SIP Project 2: Opportunities and Risks for Farming and the Environment at Landscape Scales (LM0302)

Baseline Farm Survey – Final Report
(WP 2.2A Task 2)

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Background

The Sustainable Intensification Research Platform (SIP) is a multi-partner research programme comprising farmers, industry experts, academia, environmental organisations, policymakers and other stakeholders. The platform has explored the opportunities and risks of Sustainable Intensification (SI) from a range of perspectives and scales across England and Wales, through three linked and transdisciplinary research projects:

SIP Project 1 Integrated Farm Management for improved economic, environmental and social performance
SIP Project 2 Opportunities and risks for farming and the environment at landscape scales
SIP Project 3 A scoping study on the influence of external drivers and actors on the sustainability and productivity of English and Welsh farming

Projects 1 and 2 have investigated ways to increase farm productivity while reducing environmental impacts and enhancing the ecosystem services that agricultural land provides to society.

Project 2 partners are: University of Exeter (lead), ADAS, Bangor University, Biomathematics and Statistics Scotland (BioSS), University of Bristol, University of Cambridge, Centre for Ecology and Hydrology (CEH), Eden Rivers Trust, Fera, Game and Wildlife Conservation Trust (GWCT), James Hutton Institute, University of Kent, Lancaster University, University of Leeds, Linking Environment And Farming (LEAF), Newcastle University, NIAB, University of Nottingham, Rothamsted Research, Westcountry Rivers Trust

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The views expressed in this report are those of the authors and are not necessarily shared by Defra and the Welsh Government

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Data

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Citations

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Executive Summary

Introduction
This report is the second work task in fulfilment of SIP 2 Objective 2.2A (Identify environmental and economic objectives that require coordinated action at landscape scales and design landscape scale interventions). It details the results of a 2015 ‘baseline survey’ of farms across the seven SIP case study areas, which aimed to establish current levels of farm activity and land manager opinions on a range of topics relating to the sustainable intensification of agriculture.

The survey involved face-to-face interviews with land managers and was designed to collect information on farm type, enterprise structure, size, tenure, employment, formal & informal agri-environmental management, diversification (and associated employment), profitability, and a range of social factors e.g. health and well-being, community participation. An additional objective of the survey was to quantify the type and extent of existing collaborative actions on farms and critically evaluate the perceived benefits and barriers to their implementation.

In total, 244 land managers (approximately 35 in each case study area) from a range of farm types and sizes were interviewed as part of the survey. The key findings from the survey are summarised below.

Characteristics of the surveyed farm businesses
- The majority of respondents (who represented a range of farm types and sizes) are sole proprietors or in partnership with one or more of their relatives. 27% of the surveyed farms employ one or more full-time employees, 16% employ one or more part-time employees, and 22% employ one or more casual employees. The vast majority of farms (almost 90%) also make use of contractors for some of their farming activities.
- The farm business provides the most important source of income for most respondents, with the farm business income representing, on average, 67% of respondents’ overall income. However, this average contribution varies from 51% in the Nafferton to 75% in the Avon and Eden catchments.
- Although a majority (67%) of land managers perceive their economic position to be ‘Poor’ or ‘Fair’ rather than ‘Good’ or ‘Excellent’, 67% are satisfied with their current levels of production (yield).

Recent and anticipated changes in surveyed farm businesses
- The majority of interviewees (77%) have made some kind of change to their farm business in the past 5 years. Smaller farms are less likely to have made changes than larger farms. Most of the reported changes are positive in that they have involved some kind of expansion or other investment in the farm business.
A large proportion of farmers (43%) do not have plans to make significant changes over the next 3 years. The lower occurrence of planned change compared to reported past change may indicate that farm business alterations are often undertaken opportunistically rather than as part of a long-term business strategy. However, it is also possible that current concerns about the economic state of the farming industry are making farmers cautious about planning future investments.

Views and practices of sustainable intensification (SI)

The survey reveals relatively high levels of awareness of SI (51%) but lower levels of understanding of the concept, with only 23% of farmers conceptualising SI as meaning increased production while also taking care of the environment. A further 18% understand SI as an entirely agricultural production / business oriented concept while 51% struggled to define SI. The survey also produced some evidence of resistance to SI but this was not explored systematically.

Relatively higher levels of farmer engagement were found with a range of SI activities, suggesting a disjuncture between understanding of SI and SI practice. Arguably this is important because, “ultimately, achieving a sustainably intensified European agriculture sector requires the active participation of its farmers” (RISE report 2014). Much like engagement in the agri-environment programme, if farmers are buying into the concept of SI and recognising the need to improve the environment at the same time as production it is more likely to lead to a greater degree of commitment to the concept of SI and the practices of which it is constitutive. Just because some farmers are undertaking a range of activities that SIP has identified as SI does not mean that they are actively and deliberately trying to deliver SI.

Environment and resource management

Responses to questions on environment and resource management generally indicated a stated concern for the environment, with good environmental management often being seen as part of good farming practice. Respondents cited a wide range of farming activities (including their general approach to farming/integrated farm management) as having a beneficial impact on the environment, and few believed that any of their practices have an avoidable detrimental impact.

Despite 93% of interviewees having at least one formal environmental management plan, nearly half of these have made no changes to their farm practices as a result. Many farmers appear to see such plans as a ‘tick-box exercise’ that they are required to do for regulatory reasons, but which have made little difference to their farm practices because they entail ‘common-sense’ activities that they were already doing. On the other hand, many farmers do acknowledge benefits arising from formal management plans. These benefits include increasing their general awareness and encouraging them to take greater care over environmental management practices.

Participation in formal environmental management arrangements is relatively high: The majority of interviewees are involved in at least one farm assurance scheme and
the majority have a current AES agreement. There was an association between the presence and type of AES agreement and interviewees’ understandings of SI. Those without an agreement were more likely to be unsure or unclear about the meaning of SI, and those with an advanced level agreement were more likely to understand SI as relating to both production and environmental obligation. There were also relationships between the existence and type of AES agreement and uptake levels of some (but not all) SI activities.

- There was a relationship between farm size and formal environmental and resource management. The larger the farm, the more likely they were to: have formal environmental management plans; be involved in farm assurance schemes; and have an AES agreement (and for this to be an advanced rather than a standard level agreement). This may be partly related to a greater financial and administrative capacity within larger farms. Since larger farms were also more likely to state that they had made no changes as the result of having environmental management plans, it is possible that these farms are viewing such formal arrangements as a ‘tick-box’ exercise necessary for reputational and legislative purposes, rather than as directly influencing their practical management of the environment.

Community and quality of life

- The level of contact that land managers have with both other local farmers and non-farming members of the local community appears to be relatively high on the whole, as most farmers reported having contact at least once a week. However, some interviewees reported lower levels of contact and talked about not having time to socialise, not wanting to mix business with pleasure, and being relatively isolated on the farm. Most respondents (70%) have business-related contact, and almost half (40%) have social contact, with other local farmers. Contact with non-farming members of the local community appears to be primarily in a social context.

- Interviewees generally see farming as very important or essential to the local community, often portraying farmers as contributors to the local economy, custodians of the countryside, producers of food, and/or as ‘the backbone’ of the local community. There is, however, also a sense that these contributions are frequently undervalued by the local community and wider public. Changes to the rural population, particularly the influx of ‘incomers’ from urban areas, are perceived to be at least partly responsible for a growing disconnection between agriculture and the community.

- Responses to the question, ‘What is it like to be a farmer in 2015?’ revealed a balance between those farmers who currently see the industry in a positive light, and those who are more pessimistic about farming and its future. The primary concern is around paperwork and ‘red-tape’, which are perceived as placing a disproportionate, stressful and often unnecessary burden on farmers. Economic issues are also an important concern for interviewees, with many discussing current difficulties associated with low commodity prices and market volatility. On the other hand, farmers frequently talked about the quality of life, enjoyment and job satisfaction that their occupation offers, and some are relatively optimistic about the future of the industry.
Cooperation with others

- Almost all farmers are currently involved in at least one cooperative activity. This headline figure challenges the stereotypical image of the independent and uncooperative British farmer. The cooperative activities that were characterised as the most important to farmers were: buying group membership, producer group membership and sharing labour and or machinery. Trade union involvement is common, but does not feature highly as a 'most important' activity.

- Farmers cooperate for financial reasons and gain economic benefits from cooperative activities. Financial aspects range from control of input costs, capital costs and fixed costs to increase of income, output prices and profit. Around half of all farmers mentioned a financial factor as both a reason for, and a benefit of, cooperating. Another key theme regarding reasons for cooperating was the ability to gain access to labour and machinery (39% of respondents shared labour, and 44% shared machinery, with other farmers).

- Knowledge exchange and informal cooperation, whereby farmers offer mutual help and support to each other, were identified as key reasons for, and/or benefits of, cooperation. Cooperating for environmental benefits was not a prominent theme. The most commonly cited difficulty with cooperation was the lack of timely access to labour and machinery and problems with damage to machinery. Incompatibility with, and conflict between, cooperating partners was the most commonly raised social difficulty.

- Social factors were mentioned most frequently as enablers of cooperation, and of these factors the most important was trust (mentioned by 33% of farmers). Economic factors were not raised as enablers very often, but organisational and governance issues were mentioned by 21% of respondents.

Conclusions

- If SI is to remain an important policy objective for DEFRA then steps should be taken to increase farmer engagement. Encouraging farmers to ‘buy in’ to the concept is more likely to lead to their greater commitment to the concept of SI and the practices of which it is constitutive. This is likely to involve more than awareness raising because, as the survey reveals, being aware does not necessarily equate to understanding and practice. Having said this, an SI information campaign, using various forms of media, may be of some value. Finding ways to further involve farm advisors and other ‘intermediaries’ in the SI agenda may also provide another route to extending and deepening farmer engagement with the concept. However, SIP events continue to reveal that SI remains a contested concept both by farmers and other agricultural stakeholders. Further debate around whether SI is the most effective way of tackling the key challenges facing UK agriculture may, therefore, be required.

- Many farmers claim to be engaged in individual activities that may contribute to SI. However, this does not mean that SI is being realised at a landscape level. The survey
did not allow us to establish whether an individual farmer who is employing an SI activity is doing this cooperatively. However, it does demonstrate that farmers are already involved to a considerable degree in various forms of joint working. If a scale effect in SI, i.e. within a particular landscape, is required then some form of joint working will be needed. However, this could be achieved through a coordinated approach involving the intervention of a facilitator / project officer. It need not necessarily involve attempting to impose complicated or demanding collaboration between neighbours who do not necessarily ‘get on’ or wish to work with each other.

- The survey findings suggest that relatively large numbers of farmers are already implementing a range of SI activities, would consider extending their use or introduce them into their businesses. Nevertheless, these findings have been queried by some members of the SIP team who have expressed concern that what farmers believe to be a form of, for example, precision farming, is not how a farm advisor or agricultural scientist might understand it. As such, these findings of the baseline survey would merit further investigation.

**Implications for SI platform**

Sustainable intensification, as a concept applied to UK and more broadly European agriculture, arose out of the concerns that followed the global food price increases from 2008 onwards. As a result, it was widely anticipated that farming in the UK would enter into a period of potential growth in output and productivity as farmers responded to the market opportunities represented by the new global realities. SIP was born of a desire to ensure that agriculture would respond to the productivity challenge, well-equipped in terms of technical and research-based expertise but also aware of the equally important imperatives of environmental protection and the provision of ecosystem services. But markets are notoriously tricky to predict and the downturn in global commodity prices that has coincided with the first two years of SIP has placed the British agricultural industry back into a period of challenge. For some, perhaps many, of the farmers in our study areas, belt-tightening and sometimes seeking new income streams off-farm has become more of a priority than investment of the time, intellect, and money that are the prerequisites of sustainable intensification. That some farmers in our sample are positively embracing SI principles in such difficult times is a testament to their resilience and fortitude and on such commitment we hope the SI Platform can continue to forge new possibilities for researchers and farmers to work closely together to achieve SI outcomes. That other farmers will struggle to walk such a road at this time has to be recognised and factored into SIP plans going forward.

**1. Introduction**

This report is the second work task in fulfilment of SIP 2 Objective 2.2A (*Identify environmental and economic objectives that require coordinated action at landscape scales and design landscape scale interventions*). It will contribute to Deliverables 5 and 6:
Assessment of where landscape-scale collaborative approaches have the potential to benefit businesses and the environment; and Guidance on the application of landscape scale interventions to improve economic and environmental performance).

Work under Objective 2.2A is focused on identifying, for the selected SIP case study areas, limiting factors for agricultural production and the environmental and socio-economic outcomes that can only be achieved via coordinated collaborative action between farmers at landscape scale. This report presents one of the approaches used to fulfil Objective 2.2A – a baseline survey of a sample of farms in the case study areas (CSA).

The survey was undertaken in 2015 via face to face interviews conducted by a team of researchers, following training by the socio-economic team members to ensure a standardised approach. The survey was designed to collect information on farm type, enterprise structure, size, tenure, employment, formal & informal agri-environmental management, diversification (and associated employment), profitability, and a range of social factors e.g. health and well-being, community participation. An additional objective of the survey was to quantify the type and extent of existing collaborative actions on farms and critically the perceived benefits and barriers to their implementation.

It is anticipated that the results of the survey will inform the design of landscape scale interventions for the study areas as well as informing other parts of the project.

The remainder of the report is divided into the following sections:

- Section 2 provides a description of the methodology employed in the selection of farmers for interview in the baseline survey and the means of collecting information about them and their businesses.
- Section 3 describes the characteristics of the surveyed farm businesses i.e. provides a profile of respondents.
- Recent and anticipated changes in surveyed farm businesses are presented in Section 4.
- Section 5 reports farmers’ views and practices of sustainable intensification.
- Section 6 provides an insight in the environmental and resource management activities on surveyed farms.
- Section 7 addresses the relationship between farm businesses and the wider rural community and also explores the quality of life of surveyed farmers.
- The nature and extent of cooperation between surveyed farm businesses is the subject of Section 8.
- Section 9 provides the report’s conclusions.

Key findings are provided at the beginning of Sections 4-8.
2. Methodology

2.1 Questionnaire design and testing
The questionnaire used in face-to-face interviews for the baseline survey was developed by the Nottingham and Exeter teams with input from other SIP2 team members and Defra. The questionnaire (see Appendix 1) covered the following areas:

- Sustainable intensification – farmer views and practices
- Questions about the farmer and their farm business
- Environmental and resource management
- Well-being and quality of life
- Cooperation and collaboration with other farmers

A pre-pilot version of the questionnaire was tested by the Nottingham FBS team and was subsequently modified prior to a small pilot survey. This resulted in some further modifications before the baseline survey was launched in February 2015. The final version of the questionnaire was embedded in an Excel spreadsheet. This allowed entry of simple closed questions (e.g. with Yes or No responses) at the time of interview. All interviews were audio recorded and the responses to open questions were transcribed post interview (note that only key point/quotes were transcribed). The survey was conducted with approval of the Ethics Committees of the University of Exeter and Nottingham.

Farmer interviews were undertaken by six experienced researchers, all of whom had previous experience of conducting interviews. Prior to starting the survey all interviewers were briefed by the Nottingham and Exeter survey teams. The purpose of the briefing was to ensure that each interviewer understood the purpose of each question, and to minimise the potential for inconsistencies between interviewers. In addition, each interviewer was supplied with detailed notes on the questionnaire.

2.2 Sample and response rate
The baseline survey took place in each of the seven SIP case study areas (see Figure 2.1) selected by Defra following an independent scoping study of candidate areas. Candidate CSAs were assessed on the basis of existing research investment in the area; availability of records; the potential for building a network of collaborating farmers and stakeholders and link to SIP1 study farms. The types and range of farm types was also taken into consideration but it was not intended that the CSAs would be representative of farming in England and Wales. The scoping study considered study five candidate study areas. An additional catchment (Wensum) was put forward, but as no information was provided, and it was not considered.
Full details of the assessment of candidate CSAs is included in the Case Study Selection report available from the Defra website.\textsuperscript{1}

\textbf{Figure 2.1 SIP Case Study Areas}

The sample of farms in each survey area, provided by Defra/Welsh Government, was stratified to reflect the main farm types in each area. Any Robust Farm Types accounting for less than 10\% of the case study area (CSA) population were excluded. Farms were selected to give good geographical coverage of each area. In addition, to be included in the sample each holding had to meet the criteria of being a ‘commercial holding’ as well as farming a minimum of 20 ha. Registered holders were sent an opt out letter giving five working days to opt out of being telephoned to be invited to take part in an interview. As can be seen from Table 2.1, 220 farmers (approximately 14\% of the original sample) chose to opt out and a further 611 (38\%) were uncontactable (including those who never answered the phone or where contact details were incorrect), leaving an effective sample of 782.

\textsuperscript{1}http://sciencesearch.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=18803&FromSearch=Y&Publisher=1&SearchText=sustainable intensification&SortString=ProjectCode&SortOrder=Asc&Paging=10#Description
The aim was to conduct 35 interviews in each CSA and this was achieved in most areas giving a total of 244 respondents. Due to the restrictions imposed by purdah for the 2015 general election all interviewing had to cease on the dissolution of parliament on March 30th 2015. By that date a total of 111 interviews had been completed. The remaining interviews were completed after the election. It is notable that after opt outs and farmers that proved uncontactable, the Conwy team achieved a 100% response rate which is a reflection of their very good and long-lasting relationships with local farmers.

In order to comply with requirements regarding disclosure of official Defra data, where we have used the Farm Type categories supplied from the June Survey, data points with fewer than five responses are not presented in this report. Where necessary farm type categories have been amalgamated in order to help preserve anonymity and in some cases data are not shown.

Table 2.1: Sample information and response rate

<table>
<thead>
<tr>
<th>Case Study Area</th>
<th>Taw</th>
<th>Conwy</th>
<th>Upper Welland</th>
<th>Nafferton</th>
<th>Wensum</th>
<th>Eden</th>
<th>Avon</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample size</td>
<td>240</td>
<td>175</td>
<td>239</td>
<td>240</td>
<td>240</td>
<td>239</td>
<td>240</td>
<td>1,613</td>
</tr>
<tr>
<td>No opted out*</td>
<td>44</td>
<td>57</td>
<td>28</td>
<td>40</td>
<td>34</td>
<td>27</td>
<td>47</td>
<td>220</td>
</tr>
<tr>
<td>Nil response/ wrong number</td>
<td>72</td>
<td>83</td>
<td>85</td>
<td>69</td>
<td>113</td>
<td>80</td>
<td>109</td>
<td>611</td>
</tr>
<tr>
<td>Effective sample (minus opt outs &amp; nil response)</td>
<td>124</td>
<td>35</td>
<td>126</td>
<td>131</td>
<td>93</td>
<td>132</td>
<td>84</td>
<td>782</td>
</tr>
<tr>
<td>Completed interviews</td>
<td>35</td>
<td>35</td>
<td>34</td>
<td>36</td>
<td>35</td>
<td>34</td>
<td>35</td>
<td>244</td>
</tr>
<tr>
<td>Response rate (%)</td>
<td>28%</td>
<td>100%</td>
<td>27%</td>
<td>27%</td>
<td>38%</td>
<td>26%</td>
<td>42%</td>
<td>32%</td>
</tr>
</tbody>
</table>

The interviewer training and detailed guidance notes were intended to help minimise interviewer bias, although the potential cannot be eliminated. Bearing this in mind, Table 2.2 shows the distribution of interviews by interviewer and CSA. Generally, interviews were conducted by a member of the local team but with some exceptions. For example, there wasn’t a locally based interviewer for the Wensum and Yare so these interviews were covered by other members of the farm survey team. Interview responses from the first few interviews
were checked for consistency with the questionnaire and across study areas. The potential for recording/data entry was minimised by locking cells so that values outside of expected ranges could not be entered and by making an audio recording of each interview to serve as a backup as well as source of material for qualitative analysis.

Table 2.2: Number of interviews per interviewer by CSA

<table>
<thead>
<tr>
<th>Interviewer 1</th>
<th>Avon</th>
<th>Conwy</th>
<th>Eden</th>
<th>Nafferton</th>
<th>Taw</th>
<th>Upper Welland</th>
<th>Wensum &amp; Yare</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviewer 2</td>
<td>35</td>
<td>35</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>49</td>
</tr>
<tr>
<td>Interviewer 3</td>
<td></td>
<td></td>
<td>36</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>36</td>
</tr>
<tr>
<td>Interviewer 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>30</td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>Interviewer 5</td>
<td></td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Interviewer 6</td>
<td></td>
<td></td>
<td></td>
<td>6</td>
<td>4</td>
<td>9</td>
<td></td>
<td>19</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>35</td>
<td>35</td>
<td>34</td>
<td>36</td>
<td>35</td>
<td>34</td>
<td>35</td>
<td>244</td>
</tr>
</tbody>
</table>

Analysis of Robust Farm Type in the sample compared to Defra June Survey data indicates that, with very few exceptions, the respondents are broadly representative of their study area in terms of farm type. Lowland livestock farms are somewhat underrepresented in the Taw sample as are LFA livestock farms in Conwy. (Data not shown in order to maintain confidentiality)

2.3 A note on statistical tests

On a number of occasions in this report, comparisons are made between characteristics of sub-groups of respondents using cross tabulations. We conducted a statistical hypothesis test for independence between each pair of categorical variables. We calculated a $\chi^2$ (Chi-square) statistic, which measures the dependence between two variables, and from this generated a p-value, which is the chance of obtaining such a level of dependence if the two variables were truly independent. We label an association between variables as ‘significant’ if the p-value is lower than 0.05 (i.e., 5%). In some instances, the validity of the result is weakened by a large number of cells with very low values. This is noted in the text where appropriate and in these cases the inference was checked with a Fisher’s Exact Test, which only produced a slight change in one, already marginal, result (identified in the text).

Qualitative data were analysed using the computer software package NVivo as a tool to organise the data. The qualitative material was initially organised and ‘coded’ according to a number of meaningful themes. For the most part, this was an inductive process in that the
resulting themes emerged directly from the participant narratives, rather than the material being ‘fitted-into’ pre-defined categories. The initial coding framework was then re-examined, refined and grouped into broader categories that could be analysed in relation to key participant attributes; namely CSA, farm size, farm type and respondent age. Key quotes and points that were particularly interesting or pertinent to the objectives of SIP2 were also drawn out as part of this process.
3. Characteristics of the surveyed farm businesses

The survey asked respondents about the characteristics of their business and about their role and the employment of others on the farm. All the results for these questions are quantitative and are presented for all farmers and by CSA. A Chi-squared statistical analysis by CSA was performed for each question. Where the assumptions for these tests are valid and where the result of the Chi-squared test is significant, these results are described and noted as significant. To ensure that potentially important effects are not missed, where the Chi-squared test is significant but some assumptions are not valid, these results are also described but not noted as significant.

3.1 Respondents’ role in business

Respondents’ role in their business is shown below in Figure 3.1 for all farms and by CSA.

Respondents are overwhelmingly either sole proprietors (25%) or a partner in the business with a relative [parent, son, daughter, other relative] - (50%). The Chi-squared test found a significant association between CSA and a respondents’ role in the business (p<0.001). More farmers than expected in Conwy are a sole proprietor and in Taw and Eden more farmers than expected partner with a family member. In Upper Welland, the interviewee was more likely than expected to be a director or manager or partnering with a non-relative. Unsurprisingly, perhaps, the Chi-squared test also found a significant association with size of farm (p=0.002). Interviewees on a small farm were more likely than expected to be sole proprietors whilst...
those on ultra large farms were more likely than expected to be a director, manager or partnering with a non-family member.

3.2 Area farmed by surveyed businesses

The mean area of the farms in the survey is 273ha and Figure 3.2 shows the spread of farm sizes and the distribution within the sample of small farms and very large farms in a single bar chart. However, note that the farm category area sizes (bins) are not equal.

Figure 3.2: Histogram showing the distribution of farm sizes

In order to reflect the farm size distribution of the sample and distinguish between different groups of farms at the largest end of the size spectrum, the following farm size categories have been employed:

- <50ha – Small,
- 50-99ha – Medium,
- 100-199ha – Large,
- 200-499ha – Very Large and
- 500ha and over – Ultra Large

This e-classification of the data is presented in Figure 3.3. Over 50% of farms in the sample are ‘Large’ or ‘Very Large’ farms, with the remainder evenly divided between Small, Medium
and Ultra Large farms. Very large farms range from 500ha to over 4000ha. Within the Large farm category, just over half of them are between 100ha and 200ha, making farms between 100 and 200ha the largest single group in any category. In the Small farm category, very few are less than 20ha.

**Figure 3.3: Farm sizes for all farms and by CSA following reclassification**

The Chi-squared test found no significant association between CSA and Farm Size (Figure 3.3) but, as might be expected, it found a significant association between Farm Type and Farm size (p<0.001, but 50% of cells have an expected count less than 5). Lowland Grazing Livestock farms were more likely than expected to be small or medium; Mixed farms were more likely to be Large than expected and Cereal farms were more likely to be Very Large or Ultra Large than expected.

### 3.3 People working on surveyed farms

Figure 3.4 shows the employment of family and non-family members working full time, part time and casually on the farm for all respondents.

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2 As Chapter 2 explained, a minimum size threshold of 20 ha was employed when selecting sample holdings from Defra’s June Survey database. However, as farmers no longer return an annual census form (other than every 10 years) and the June Survey is based on a sample some holdings that originally appeared to meet the size criteria had in fact declined in size. If this was not apparent until the start of the interview these farms will still be included in the baseline survey analysis.
87% of farms have one or more family member working full time on the farm, with 50% of farms having just one family member working full time on it. One or more family members work part time on 45% of farms and one or more family members take part in casual work on 13% of farms. These data indicate that the family farm remains an important institution within British agriculture.

Figure 3.4: Employment of family and non-family members (including respondent) working full time, part time and casually on the farm

Beyond the employment of family members, 27% of farms employ one or more full time employees. Wensum, Eden, Taw and Avon are the only areas where any of the farms employ more than 2 full time members of staff, with a maximum of 10 full time staff. 16% of farms employ one or more part time employee and 22% of farms employ one or more casual employee, with a maximum of 28 casual staff.

### 3.4 Use of contractors

Almost 90% of farmers use contractors but a Chi-squared test found a significant association (p=0.026, but 50% of cells have an expected count less than 5), between use of contractors and CSA (Figure 3.5). Farmers in Wensum and Yare are unusual in that more of them than expected (25%) do not use contractors.
3.5 Proportion of income from farm and other sources

Farmers were asked about the proportion of their overall income from both their farming business and other sources such as off-farm work and income from savings and pensions. Figure 3.6 shows the average proportion of total income from each source by CSA and for all farmers. As an example, the chart can be interpreted thus: ‘in the Avon CSA, the average proportion of total income from the farm is 76%’ and ‘the proportion of total income from the farm averaged over all farmers is 67%’.
The average proportion of income for all farmers from the farm business itself is almost 67%, but within the CSAs it ranges from 51% in Nafferton, 62% in Conwy and 60% in Upper Welland to over 75% in Avon and Eden. On average, no other individual source of income reaches 10% of the proportion of total income, but income from savings and pensions in Nafferton and Upper Welland is around 15% and is noticeably different from that in the other CSAs, except for Avon.

3.6 Perception of economic position

Farmers were asked to rate their perception of their economic position as poor, fair, good or excellent. A majority of farmers perceive their economic position to be Poor or Fair (67%) rather than Good or Excellent as shown in Figure 3.7.

Figure 3.7: Respondents' perception of their economic position

In Conwy more farmers than expected said their economic position was poor or fair and fewer than expected reported it as good or excellent. The situation for farmers in the Avon CSA is the reverse, with more than expected saying their economic position is good or excellent and fewer than expected saying it is poor or fair.

Examining the individual categories of poor, fair, good and excellent, the smallest proportion of farmers saying they are in a good economic position (14%) and the largest proportion saying they are in a poor economic condition are in Conwy (34%). The largest percentage of farmers saying they are in an excellent economic position are in Avon (11%).
A Chi-squared test found no significant association between Farm Type and perceived economic position, but did find a significant association with farm size \((p=0.002)\). Farmers in Ultra Large farms reported being in a good/excellent economic position more often than expected and being in a poor/fair economic position less often than expected. However, it is notable that farmers on Large farms are more likely than expected to report being in a poor/fair economic position and less likely than expected to say they are in a good/excellent position.

### 3.7 Comparison of surveyed farm income with English and Welsh averages

Farmers were asked to compare their farm business income to the average for England and Wales using a series of categories as shown in Figure 3.8. Averaging over all farmers, those in the ‘considerably less than the average’ category are the single largest group, with 40% of farmers reporting considerably less income than the average for England and Wales. 26% of all farmers reported income close to the average for England and Wales and a further 26% reported income somewhat greater than or considerably above the average.

**Figure 3.8: Farm income compared to the average farm income for England and Wales in 2013-2014**

Chi-squared tests were performed on combined categories: Lower than the average (for England and Wales), similar to the average and greater than the average. The Chi-squared test found a significant association between farm income and CSA \((p=0.023)\). Of interest, in Avon more farms than expected have a farm income greater than the average for England and Wales and fewer are similar to the average than expected. Also, in Nafferton, more farms than expected have an income lower than the average.
The Chi-squared test also found a significant association with Farm Size (p<0.001). This association is generally as might be expected, with more small farms than expected having an income below the average and more Ultra Large farms than expected with an income above the average.

3.8 Satisfaction with farm production levels

Farmers were asked how satisfied they are with their farm production levels. As shown in Figure 3.9, overall 67% of all farmers are satisfied with their production levels, with 80% of farmers in Avon and Wensum and Yare being satisfied. On average, 22.5% of farmers were less than satisfied with their production levels, but Farmers in Upper Welland and Taw were the least satisfied with over 30% of them reporting being less than satisfied.

Figure 3.9: Respondent satisfaction with farm production levels

After combining the categories into ‘Less than satisfied’, ‘Satisfied’ and ‘More than satisfied’, Chi-squared tests were performed and found no significant association between satisfaction with production levels and CSA, Farm Type or Farm Size.
4. Recent and anticipated changes in surveyed farm businesses

Key findings

- The majority of interviewees (77%) have made some kind of change to their farm business in the past 5 years. Most of the reported changes are positive in that they have involved some kind of expansion or other investment in the farm business (although 14% have contracted the size of their business). Farmers tended to see these changes as part of general business progression.

- Arable farmers appear more likely to have expanded their farmed area in the last 5 years (and to have similar plans over the next 3 years), whereas livestock farmers were more likely to have made other investments in the existing business, such as improving infrastructure or machinery.

- There appears to be some relationship between farm size and both past and planned change. Larger farms were more likely to have invested in the existing business and/or expanded their farmed area over the past 5 years than smaller farms. They were also more likely to report plans for such changes over the next 3 years. There was no relationship between farm size and those without any plans for change, but smaller farms were more likely than larger farms to have made no changes at all over the last 5 years.

- A large proportion of farmers (43%) do not have plans to make significant changes over the next 3 years. Again, for those that do have plans, these are usually ‘positive’ plans in the sense that they involve some kind of investment in, or expansion to, the existing agricultural business as opposed to investment in non-agricultural business assets.

- The lower occurrence of planned change compared to reported past change may indicate that farm business alterations are often undertaken opportunistically rather than as part of a long-term business strategy (particularly expansion to the farmed area, as several participants gave opportunism as a reason for having made this change). However, it is also possible that current concerns about the economic state of the farming industry are making farmers cautious about planning future investments. Since this was not a question that was specifically asked, it is difficult to make firm conclusions in this regard.

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3 Statistical tests for significance have not been run for the figures presented in this section due to the qualitative nature of the questions.
Respondents were asked to describe, in their own terms, recent *significant* changes made to their businesses, within the last 5 years. Their responses were organised into key themes, as shown in Table 4.1. Respondents were also encouraged to look ahead and indicate the nature and extent of any planned changes (Table 4.2).

### Table 4.1: Respondents who have made changes to their business in the last five years

<table>
<thead>
<tr>
<th>Type of change</th>
<th>Taw</th>
<th>Conwy</th>
<th>Upper Welland</th>
<th>Nafferton</th>
<th>Wensum &amp; Yare</th>
<th>Eden</th>
<th>Avon</th>
<th>All farms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
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<td>11</td>
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<td>3</td>
<td>17</td>
<td>9</td>
<td>23</td>
<td>16</td>
</tr>
<tr>
<td>Investment in existing business</td>
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<td>6</td>
<td>51</td>
<td>14</td>
<td>54</td>
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<td>27</td>
</tr>
<tr>
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<td>12</td>
<td>34</td>
<td>29</td>
<td>20</td>
<td>14</td>
<td>23</td>
</tr>
<tr>
<td>Contraction of business</td>
<td>6</td>
<td>9</td>
<td>15</td>
<td>29</td>
<td>6</td>
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<td>14</td>
</tr>
<tr>
<td>Farm practices</td>
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<td>29</td>
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<td>3</td>
<td>11</td>
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</tr>
<tr>
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<td>6</td>
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<tr>
<td>Supplementing farm income</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>17</td>
<td>9</td>
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<td>3</td>
<td>6</td>
<td>9</td>
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<tr>
<td>Increased collaboration</td>
<td>3</td>
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<td>0</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>11</td>
<td>2</td>
</tr>
</tbody>
</table>

*Columns do not sum to 100% as respondents can appear in more than one category*

### 4.1 No change

16% of all farmers have made no significant changes to their business in the last 5 years. The percentages of farmers making no changes were similar in Taw (26%), Upper Welland (26%), Wensum & Yare (17%) and Avon (23%), but lower in Conwy (11%), Nafferton (3%) and Eden (9%). No particular reason was given by farmers for this lack of significant change.

Reports of no change were most frequent among Lowland Grazing Livestock and Cereal farmers (27% and 23% respectively of whom reported no change) and least frequent among Dairy, Mixed and General Cropping farmers.
Reports of no change were more frequent among small and medium farms (23% and 22% respectively of whom reported no change) than large, very large and ultra large farms (14%, 12% and 15% respectively of whom reported no change).

The remaining farmers reported making at least one change in the past 5 years. The types of changes they have made are discussed below.

**4.2 Investment in the existing business**

27% of all farmers have made some type of investment (excluding land acquisition) in their existing business, whether this is improvements to farm infrastructure, installation of renewable energy equipment, or investment in farm machinery.

Investment in the existing business was primarily cited by farmers in the Eden, Nafferton and Conwy catchments (accounting for 29%, 27% and 21% of references respectively).

Reports of investment were most frequent among LFA Grazing Livestock and Dairy farmers (42% of LFA grazing livestock and 39% of Dairy farmers stated this change) and least frequent among Cereal farmers (13% of whom stated the change).

Reports of investment in the existing business were more frequent among large, very large and ultra large farms (34%, 33% and 27% respectively of whom made this change) than small and medium sized farms (13% and 20% of whom made this change).

Investment in the existing business was generally reported to be part of general business progression, with no further explanation offered.

**4.3 Expansion of the farm business**

24% of all farmers reported having expanded their business in some way – Of these 60 farmers, 40 have increased the area of land they farm (which may include increasing arable cropping and/or livestock numbers), whilst the remaining 20 have increased their livestock numbers without necessarily increasing the area of land they own or rent.

Farmers in the Wensum & Yare and Nafferton areas were most likely to report expansion to their farmed area (26% and 23% respectively of farmers in these areas made this change), and farmers in Upper Welland and Eden the least likely (9% of those making this change were in each of these catchments).
Reports of expansion to the farmed area were most frequent among General Cropping farmers (31% of whom made this change) and least frequent among Lowland Grazing Livestock farmers (8% of whom made this change).

Interestingly, 28% of Dairy farmers interviewed said that they had increased their livestock numbers (compared to 8% of LFA Grazing Livestock and 8% of lowland grazing livestock farmers).

Larger farms were more likely to report an expansion to the farmed area, with 10% of small and medium farms, 14% of large, 17% of very large and 33% of ultra large farms stating this change. There is of course a ‘chicken and egg’ issue here; has land expansion shifted these farms in to a large size category or, because they were larger in the first place was it easier for them to finance land expansion?

Much of this expansion appears to be opportunistic (e.g. buying a piece of neighbouring land that comes up for sale) but, in general, farmers professed to having expanded in order to increase their profitability, as part of ongoing business progression/adaptation, or as the result of a son or daughter returning home to work on the farm.

“It changes all the time. We’re always looking at new things because to stand still is to go backwards. It’s about managing a risk and we’re very susceptible to oil prices that we can’t control, so you have to try and control your inputs and labour etc. In the last 5 years we’ve taken on more land to farm for other people, we contract farm in our own right, we own land in our own right. My father was part of a family farm and in 1982 he went on his own and we had to start again. So we’ve taken opportunities and our business has changed dramatically - we do whole farm contracting and farming more land in our own right to try and improve on costs and what we’re doing.”

(General Cropping farmer, Wensum & Yare - 51080)

“Expanded and become more diverse. We’ve stopped growing sugar beet... [reconfigured our fruit growing]... taken on more land (rented or share-farmed). General growth really - responding to the market forces that affect us directly.”

(General Cropping farmer, Wensum & Yare - 51065)

“Our son has come home after working away for several years, so therefore we have taken on more ground (buying and renting) and upped our stock numbers to take that into consideration.”

(LFA Grazing Livestock farmer, Taw – 10027)
4.4 Contraction of the farm business

14% of all farmers reported having contracted their farm business in some way over the last 5 years – half of these have reduced the size their farmed area, whilst half have reduced their livestock numbers but without reducing their farm area.

Reduction in the size of farmed area was perhaps most marked in Nafferton (accounting for 28% of those reducing their farmed area) and Avon (accounting for 22%).

Reports of reduction to the farmed area were most frequent among Mixed farmers and least frequent among Dairy farmers.

There was no clear relationship between reduction to farmed area and farm size, with 5-10% of each farm size category stating this change. However, the small numbers reporting this type of change make such comparisons difficult to confirm.

Reasons for farm business contraction varied. Some farmers did so because their landlords had withdrawn land that they were renting, and others because they are winding down for retirement or have experienced health difficulties and so want to reduce labour requirements. Others did so as part of a broader financial decision.

“We’ve reduced our rented land - we just thought we’d cut back instead of spending extra money on renting land.”

(Mixed farmer, Upper Welland – 32102)

“We lost 240 acres (due to complications relating to the landowner’s...[personal situation] ...), because we were beef and arable organically, so we had to condense it down to this farm and we decided to go back into dairy - probably the only people in the country! But it was the only way to do it really and we found a guy to do organic dairy. I’m semi-retired now really.”

(Mixed farmer, Avon – 72004)

“4 years ago we sold our previous farm ... [due to my health] .. So we’ve drastically reduced livestock from 100 cattle to 40. We’ve bought a new farm, it’s a new business.”

(Lowland Grazing Livestock farmer, Nafferton – 42080)

4.5 Changes to farm practices

14% of farmers reported making some kind of change to their farm practices. This included a variety of changes such as; changing crop type or rotation; reducing the amount of inputs
used; entering or increasing participation in an agri-environment scheme; and reducing tillage.

The reasons given for these changes ranged between wanting to; increase productivity; improve environmental sustainability or gain income from agri-environment schemes; improve soil, crop or animal health; or respond to new regulations (e.g. the 3-crop rule).

The numbers of farmers reporting these types of changes were too small to make further analysis by case study area or farm type valid.

“I was leaning on wheat rape as profitable, but I moved out of that as I realised it’s not sustainable – so I’m now growing a wider rotation. I realised that you can’t keep doing that and expect optimum yields, and you risk the problem with blackgrass. And I think this idea of having a legume in the rotation is right anyway. We’ve got to go back to a rotation to improve the organic matter.”

(Cereal farmer, Upper Welland – 32050)

“We’ve done quite a lot environmentally in terms of new hedgerows, buffer strips, field corner management, woodland maintenance, introducing habitat piles. We did that partly to try and use best practice. On the environment side we’re quite involved with CSF, some of it is part of HLs but we tend to be a bit more proactive than some people may be from the point of view of improving wildlife species and farmland bird numbers.”

(General Cropping farmer, Wensum & Yare – 52076)

“We’ve given up sugar beet. It was the only thing we were ploughing for and we’re paranoid about blackgrass, any contractor on the farm is likely to bring it in, so we didn’t really want to do that, and it’s not good news for the soil. Although we were getting good crops.”

(Cereal farmer, Upper Welland – 32042)

4.6 Other recent changes

- 10% of farmers reported making some kind of change to their enterprise mix or wider farming system (e.g. switching from arable to livestock or vice versa; changing the balance of different enterprises; or moving from organic to commercial farming or vice versa).
- 8% of farmers have changed the way that their business is managed (i.e. have made changes to partnership, contractual or tenancy structures).
6% of farmers have made changes in order to supplement their farm income. Such changes included increasing their diversified enterprises, starting or increasing off-farm employment or contracting work, and renting out more land to other farmers.

3% of farmers reported making changes to their labour force (e.g. reducing the number of employees or family members leaving the business)

2% of farmers reported increasing collaborative working with other farmers (e.g. began machinery sharing).

4.7 No planned change

Table 4.2: Respondents’ plans for changes in the next three years

<table>
<thead>
<tr>
<th>Type of planned change</th>
<th>Taw</th>
<th>Conway</th>
<th>Upper Welland</th>
<th>Nafferton</th>
<th>Wensum &amp; Yare</th>
<th>Eden</th>
<th>Avon</th>
<th>All farms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
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<td>46</td>
<td>53</td>
<td>34</td>
<td>34</td>
<td>43</td>
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<td>9</td>
<td>9</td>
<td>26</td>
<td>23</td>
<td>17</td>
<td>20</td>
<td>17</td>
</tr>
<tr>
<td>Contraction of business</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>11</td>
<td>3</td>
<td>14</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Investment in existing business</td>
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<td>6</td>
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<tr>
<td>Supplementing farm income</td>
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</tr>
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<td>6</td>
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<td>3</td>
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</tr>
<tr>
<td>Increased collaboration</td>
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<td>0</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

1 Columns do not sum to 100% as respondents can appear in more than one category

42% of farmers have no firm plans to make significant changes in the next 3 years. Most farmers did not give a reason for this lack of planned change, although 3 explained it was for age or health reasons and 3 cited financial reasons such as lack of capital and the poor economic state of the industry.
Reports of no planned change were most frequent in the Upper Welland and Taw catchments (where 53% and 51% of farmers stated this) and least frequent in Nafferton, Wensum & Yare and Eden (34% in each) (Conwy = 46%, Avon = 43%).

Mixed and Dairy farmers were slightly more likely to report no planned change than the other farm types (53% and 44% of whom stated no planned change, compared to 32-38% of the other farm types).

There was no clear relationship between the numbers of farmers reporting no planned change and farm size (38% of small, 44% of medium, 27% of large, 39% of very large and 36% of ultra large farms reported this).

**4.8 Investment in the existing business**

14% of farmers plan to invest in their existing business in some way, whether that be by improving farm infrastructure, investing in farm machinery and/or installing renewable energy equipment.

Farmers in the Eden were most likely to plan investment in the existing business (accounting for 26% of farmers stating this plan) and farmers in the Taw and Avon the least likely (accounting for 6% each) (Nafferton = 21%; Upper Welland = 15%; Conwy = 15%; Wensum & Yare = 12%).

Across all farmers interviewed, plans for investment in the existing business were cited most frequently among Dairy farmers and least frequently among Mixed farmers.

There may be some relationship between plans for investment in the existing business and farm size, as such plans were cited more frequently among large and very large farms (23% and 17% of whom reported this) than small and medium farms (10% of each reported this). However, no ultra large farms cited this plan.

Few farmers offered detail reasons for these plans, although some mentioned it was out of operational necessity (e.g. building a new shed because cattle needed to be housed indoors) and others stated the plans were part of general updating or, in the case of renewable energy, efforts to improve efficiency/profitability.

**4.9 Expansion to the farm business**

17% of farmers plan to expand the farm business in some way over the next 3 years. Of these, roughly half plan to increase the area of land they farm, with the rest planning to increase livestock numbers without necessarily increasing farm area.
Farmers in the Wensum & Yare and Avon were most likely to be planning an increase to their farmed area, accounting for 30% and 25% respectively of farmers citing this plan. Farmers in the Conwy were the least likely to increase farmed area, with no farmers here citing this plan (Upper Welland and Nafferton = 15%; Taw = 10%; Eden = 5%).

Farmers in the Nafferton and Eden catchments were most likely to be planning an increase to their livestock numbers whilst maintaining the same land area (accounting for 29% and 24% respectively of farmers stating this plan). Farmers in the Upper Welland catchment were least likely, with no farmers in this area citing this plan - which is unsurprising given that the predominant farm types in the sample here are arable (Taw = 14% of citations; Conwy = 14%; Wensum & Yare = 10%; Avon = 10%).

In terms of farm type, plans to increase their farmed area were most frequent among General Cropping and Mixed farmers and least frequent among Dairy farmers.

Larger farms appear more likely to be planning an expansion to their farmed area than smaller farms (1% of small, 3% of medium, 3% of large, 4% of very large and 9% of ultra large farms cited this plan), though the small number of interviewees reporting this plan means this conclusion can only be tentative.

As with changes in the last 5 years, plans for expansion tended to be part of what the farmer saw as general progression of the business or looking for opportunities to increase profitability, although sometimes this was being enabled by a son or daughter returning home to work on the farm. Some farmers also mentioned that the need to expand is linked to the economies of scale required to run machinery and be profitable.

“Ongoing really. I've run out of projects at the moment which is a worry. I might buy some more land, there's some that's come up which is a possibility.”

(Lowland Grazing Livestock farmer, Avon - 71071)

“Because the way things are with equipment and economies of scale, the day of the 200acre farm is just going. I'm sorry but people just can't do it, and it's a great shame but it's not sustainable...And with the paperwork and the demands and everything, you're either in it or you're not, and if you're not then you need to get out. Simple as that.”

(General Cropping farmer, Wensum & Yare – 51080)

“I would take on more arable land to farm ourselves - there is something in the pipeline at the moment. Just to cover our overheads with the machinery we have. I might look at other things, but it depends on what burden my 3 sons put on me - at the moment only
one of them’s involved but if the others want to go into farming then I might have to look at something a bit more intensive.”

(Cereal farmer, Avon - 71015)

4.10 Contraction of the farm business

Only 8% of farmers are planning to contract the size of their business in some way. Of the 23 farmers planning this change, 7 plan to reduce the area of land they farm, 4 plan to reduce their livestock numbers whilst maintaining the same land area, and 10 plan to leave farming or retire completely.

Much of this planned downsizing (particularly reduction to area and/or livestock numbers) appears to be related to the farmers age or health and thus decreased capacity or desire to farm. However, a few instances were driven by current unprofitability. For instance:

"Next Thursday, 9 o'clock, I've got the auctioneers coming, and we're just going to see what options I got, I got the barns there and we're just seeing what the options would be on planning and if we can get it, I'm off”.

(Dairy farmer, Taw – 10005)

4.11 Changes to farm practices

11% of all farmers reported having plans to make some kind of change to their farm practices in the next 3 years.

Of the 27 farmers citing this plan; 12 are doing so in order to improve crop, soil or animal health (e.g. applying scientific methods to improve animal health); 10 to increase profitability (e.g. adjusting crop type to feed a new local anaerobic digester); and 5 to improve environmental sustainability on the farm (although this may be driven by financial or other motivations - e.g. going into environmental schemes and reducing food production as the farmer ages).

The numbers of farmers reporting these types of changes are too small to make further analysis by case study area or farm type valid.

“I'm investigating and want to apply scientific methods to improve flock breeding and nutrition.”

(LFA Grazing Livestock farmer, Nafferton – 41020)
“There’s a lot more renewables coming involved, there’s an awful lot of anaerobic digesters coming in locally and they will need feedstock, and that might be a different crop to the ones we grow now and the opportunities come that we can provide something for one of those.”

(Cereal farmer, Wensum & Yare - 52004)

“I think what he’s going to try and do as he gets older is go into every environmental scheme he can and slowly give up. Well he’s going to have to still grow something but it will be more and more geared towards the environment. It’s less labour intensive, plus we can see the way it’s going - with crop prices as they are at the moment, you’re producing something at a certain cost and when you try and sell it it’s less than the cost you want. Whereas, he can see that if the farm’s got no debt and he’s a single chap, he will just put it down to environmentally friendly use and take the money and run!”

(Farm agent on behalf of General Cropping farmer, Wensum & Yare – 51070)

4.12 Other planned changes

- 8% plan on supplementing their income by increasing diversified enterprises, or increasing their off-farm employment or contracting work.
- 5% plan to make some kind of change to their business management structure (e.g. bringing their son or daughter into the partnership).
- 2% plan to make some kind of change to their enterprise mix or wider farming system (e.g. moving to a pedigree breed).
- 2% have plans to increase collaborative working with other farmers in some way (e.g. start share farming).
5. Views and practices of sustainable intensification

Key findings

- The survey reveals relatively high level of awareness of SI (51%) but lower levels of understanding of the concept with only 23% of farmers conceptualising SI as meaning increased production while also taking care of the environment. A further 18% understand SI as an entirely agricultural production / business oriented concept while 51% struggled to define SI. The survey also produced some evidence of resistance to SI but this was not explored systematically.

- Relatively higher levels of farmer engagement were found with a range of SI activities suggesting a disjunction between understanding of SI and SI practice. Arguably this is important because, “ultimately, achieving a sustainably intensified European agriculture sector requires the active participation of its farmers” (RISE report 2014). Much like engagement in the agri-environment programme, if farmers are buying into the concept of SI and recognising need to improve the environment at the same time as production it is more likely to lead to a greater degree of commitment to the concept of SI and the practices of which it is constitutive. Just because some farmers are undertaking a range of activities that SIP has identified as SI does not mean that they are actively and deliberately trying to deliver SI.

5.1 Farmer awareness and understanding of sustainable intensification

The survey asked farmers about their awareness and understanding of SI and the extent to which they were engaged in SI activities.

A majority (51%) of farmers were aware of SI with the remainder either not aware (41%) or unsure (9%). These data suggest that there has been no real increase in awareness since the publication of the study by Firbank et al. (2013) which reported that 50% of the British farmers who participated in their focus groups were aware of SI.

There is some variation in awareness of SI between SIP case study areas (CSA) (Figure 5.1). Chi-squared analysis of these data produce a Pearson figure of <0.05, but at 0.046 this is not a strong effect. Furthermore, 33% of the cells have an expected count less than 5 which reduces confidence in the overall results. There are four cells in the cross tabulation CSA by aware / unaware / unsure of SI that are statistically notable. Farmers in the Taw CSA are more likely than expected to NOT have heard of SI. This is interesting as FWAG have been actively promoting the concept in the area. Meanwhile, Conway respondents are slightly less likely
than expected to have heard of SI. The only other statistically notable result in this cross-tabulation is that farmers in the Upper Welland were both less likely than expected to not have heard of SI and more likely than expected to have heard of SI suggesting that farmers in this area are particularly well informed about this policy development.

**Figure 5.1: Awareness of SI**

![Bar chart showing awareness of SI by case study area]

The farming press and other, unspecified media were the most important sources of farmer awareness of SI and were mentioned by 36% and 20% of all respondents respectively. A range of other sources including farming organisations and events (such as meetings and conferences), SI projects and Defra were mentioned but by relatively small proportions of respondents – 7%, 6% and 3% respectively. One fifth of farmers (21%) were unable to specify the context in which they had heard of SI. Chi-squared analysis (CSA by SI awareness source) reveals no statistically significant outcomes although we note that in the Upper Welland farmers are much more likely than expected to claim that the farming press is the source of their awareness of SI.

In order to gain further insight into what SI means to farmers they were asked an open question: ‘what do you understand SI to mean?’ This generated textual data which have been analysed thematically. Initially, 9 themes were identified but these were amalgamated into four themes which are described below.
Theme 1

SI is interpreted as meaning **increased agricultural production while taking into account the environment (23%)**. Arguably, this type of definition reflects most closely those circulating within policy and academic discussion. Direct quotations from farmers which illustrate this theme are as follows:

“Increasing production without beating up the environment.”

(LFA Grazing Livestock farmer, Taw - 10002)

“Diversification of agriculture and trying to lessen impact of chemical agriculture. Provide more food for increasing world population, and secure food, but at the same time on a more environmentally-friendly basis.”

(Cereal farmer, Nafferton - 41011)

“Producing lots of food but looking after the environment at the same time.”

(LFA Grazing Livestock farmer, Nafferton - 41041)

“Maintaining a high level of productivity while keeping or improving the environment. Without pollution or poisoning anything.”

(Cereal farmer, Nafferton - 42018)

In the final quote the respondent asserts that SI entails an ‘improvement’ in the environment. In the majority of cases, the understanding of SI was slightly different, to produce (more) food but not do harm to the environment or to reduce the environmental impact of agriculture. As such, only a minority of farmers conceptualise SI in terms of its strictest / strongest definition in which both food production and the environment are increased or improved.

In only a few cases did respondents mobilise a ‘feed the world’ rationale for SI in association with this type of definition (see second quote above). That this was not mentioned more often may be explained by the fact that farmers were not asked explicitly to articulate why they thought that agriculture was being encouraged to sustainably intensify. Another example of this type of response is as follows although it is worth noting that this respondent queries the projected production increase figures:

“[SI means] intensification of food production in general to satisfy the demands of an ever-burgeoning population and the supposed 100% increase in production that we need to satisfy over the next 20-30 years for 2-3 billion increase in worlds population, but without it impacting on the environment, food production, so using less fertiliser, less land, so it’s got to be sustainable for the future.”

(General Cropping farmer, Wensum & Yare - 51072)

Theme 2
SI is interpreted as a concept that speaks only to **agricultural output and the current / future state of the farm business (18%)**. Many of the responses within this theme make reference to the notion of ‘sustainability’ interpreted in a common sense way as ‘able to continue [the farm business] into the future’ rather than in the more technical sense of sustainable development with its constituent 3 pillars. Good examples of this perspective are found in the following quotations:

“*[SI is a] business term, to retain farming as a viable economic enterprise.*”  
(Dairy farmer, Eden - 60003)

“**Sustainable - keeping the business going for the future.**”  
(Mixed farmer, Nafferton - 41094)

“I've heard of the 2 words but not together like that. But intensification as in intensive farmer, sustainable as financially viable.”  
(Mixed farmer, Avon - 72005)

Other examples of this thematic response which emphasises agricultural production and /or sustaining the business:

“**Increasing profit 'clawing the profit'**.”  
(Lowland Grazing Livestock farmer, Eden - 60014)

"**We've got to produce more, with less.**"  
(Cereal farmer, Upper Welland - 31028)

"**I suppose it's simply producing more from the same.**"  
(Lowland Grazing Livestock farmer, Upper Welland - 32075)

“**Many farmers [are] struggling. It's about making a living from farming.**”  
(LFA Grazing Livestock farmer, Nafferton - 41061)

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**Theme 3**
SI is interpreted as a concept that is first and foremost, or exclusively, about **addressing the environmental impacts of agriculture (7%)**. In this type of response no explicit reference is made to production levels or business concerns.

“Well like many farmers I suppose I realise that unless we treat the land with respect it’s not going to be available to us for the future, so it’s a matter really I suppose of reverting back in some degrees to what I would consider old-fashioned methods. And not reliant quite so much on chemicals and fertilisers.”

(Cereal farmer, Upper Welland - 31016)

“The word sustainable means to me, means what you do is sustaining and it’s totally impossible with farming because you have energy input, and we’re virtually energy junkies aren’t we? So we try to protect the land and the soil and generally good husbandry.”

(Cereal farmer, Upper Welland - 32046)

“Going more green.”

(Dairy farmer, Eden - 60004)

“Being aware of what you do, and how it affects others and the environment.”

(LFA Grazing Livestock farmer, Eden - 60008)

“Renewable energy etc.”

(Lowland Grazing Livestock farmer, Eden - 60007)

None of the respondents who attempted a definition of SI in any of the three ways outlined above used the ‘technical’ language of ‘land sharing’ or ‘land sparing’. However, both approaches were implied in a **small** number of cases. The first of the next two quotes represents the land sparing model and the second the land sharing approach:

“It’s perceived to be the word that joins environmental obligations with modern farming practice. As one farmer said, you put an environmental margin around the outside of the field and farm like hell in the middle.”

(General Cropping farmer, Wensum & Yare - 51065)

“[SI means] providing ecosystem services, gaining multiple benefits from agriculture.”
Theme 4

Respondents were unable or unwilling to provide a definition of SI that went beyond repeating the phrasing in the letter sent to farmers inviting them to participate in the study (51%). As the following examples reveal respondents sometimes made an effort to provide a definition but themselves questioned their own understanding or the extent of their understanding.

“Well, I can interpret it, but not really.”

(Lowland Grazing Livestock farmer, Taw - 10015)

“Not sure - increasing output but with sustainability, but not clear definition of what is being sustained.”

(Cereal farmer, Upper Welland - 31005)

“I don't always understand these fancy words.”

(Lowland Grazing Livestock farmer, Wensum & Yare - 52097)

“Do you mean like intensive farming? Yeah, and sustainable.”

(General Cropping farmer, Wensum & Yare - 51060)

“I suppose basically it’s what’s in this paragraph on here” (refers to SIP correspondence).

(Cereal farmer, Upper Welland (Upper Welland) - 32068)

This farmer claimed that he understands what both terms mean “but not together.”

(LFA Grazing Livestock farmer, Conwy - 20029)

These four categories of SI meaning were cross tabulated with case study area (Figure 5.2).

The Pearson Chi-squared is 0.001, denoting a reasonably strong effect, with 25% of cells having an expected count less than 5. Within the cross-tabulation, the following cells are statistically of note:

- Farmers in the Taw were more likely than expected to be unsure about what SI means.
• Conway farmers were very much less likely than expected to define SI as having both a production and an environmental dimension.

• Farmers in the Upper Welland were more likely than expected to conceptualise SI as being business or production oriented.

• Nafferton CSA farmers were both much more likely than expected to define SI as having both a production and an environmental dimension and were also less likely to be unsure about the meaning of SI.

• Wensum and Yare farmers were, like those in Nafferton, more likely than expected to define SI as having both a production and an environmental dimension and were also less likely than expected to define SI as being only about production (although the numbers are very small in this instance).

Figure 5.2: Understanding of SI

5.2 Contesting SI

In association with providing (or not) their definition of SI, 8% of respondents raised questions about one or more aspects of the concept of SI. Examples of these responses are given below. It is important to note here that farmers were not asked explicitly to identify any problematic aspects to SI and as such we cannot see these data as comprehensive on the matter of contestation. We note also that respondents who were unwilling / unable to offer a definition of SI were slightly more likely to be more strongly critical of SI:
Respondents who were able to offer a definition of SI (emphases added):

“Increasing production without beating up the environment. But what beating up the environment means is debateable.”

(LFA Grazing Livestock farmer, Taw - 10002)

“They want it to mean that we can produce as much food as possible with the least possible damage to the environment and land. Reduce inputs but increase output. It’s a nonsense.”

(Mixed farmer, Nafferton - 41097)

“more output, bit of a jargony phrase without clear meaning.”

(Mixed farmer, Upper Welland - 31100)

“It’s really a case of increased production and profitability without damaging the environment. That is a big challenge. I’m... [involved with the national park] ...and it’s the sort of thing we talk about, how can you protect the environment and get the most out of the uplands. It’s a conundrum really.”

(LFA Grazing Livestock farmer, Taw - 10017)

“I’ve no idea what it means. But environmentally sustainable covers a whole gamut of greenwash - from meaningful stuff to greenwash, and intensification is self-evident.”

(Lowland Grazing Livestock farmer, Taw - 10024)

“It’s a buzzword, more glorified than it is.”

(Cereal farmer, Avon - 72012)

“As much output as possible without damaging the land. I am doing it anyway.”

(Cereal farmer, Nafferton - 42016)

The last quote suggests a view of SI as nothing new or ‘business as normal’. It is notable that more farmers did not express this view. For example, in earlier research reported by Morris and Winter (1999)\(^4\) on integrated farming systems, many farmers were of the belief that they were already practising this ‘middle way’ in agriculture.

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Respondents who did not offer a definition of SI:

“Another quango talking rubbish.”
(Mixed farmer, Upper Welland - 32101)

“Term is a misnomer.”
(Lowland Grazing Livestock farmer, Nafferton - 41085)

“Term doesn't convey anything.”
(LFA Grazing Livestock farmer, Nafferton - 42019)

“Two diametrically opposed ideas - Intensification is not sustainable. The word sustainable has been misunderstood and hijacked by the sound bite brigade.”
(Dairy farmer, Eden - 61017)

"It's bollocks, it's not even a word....it's nothing."
(Cereal farmer, Wensum & Yare - 51013)

“Is intensive farming sustainable?”
(Lowland Grazing Livestock farmer, Nafferton - 41079)

“They are hoping we can sustain ourselves and keep them in the condition they expect sitting down in their little office telling us what to do, from the hierarchy why have told them. They know nothing, they told this, they know nothing and just writing it on a bit of paper like you're doing now, and they know nothing and expect us to get on with it.”
(LFA Grazing Livestock farmer, Conwy - 20034)

Although some of these criticisms are expressed in strong language it is surprising, perhaps, that relatively few respondents expressed these types of opinions and sentiments and also that their criticism was not targeted at specific institutions involved in agricultural governance.

5.3 Farmer involvement in SI activities
Farmers were asked whether they were involved with a range of SI activities that were identified by the SIP team in consultation with a range of stakeholders. These activities were as follows. Summaries of these are provided in subsequent tables and figures:

<table>
<thead>
<tr>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grow crop varieties with increased tolerance to stresses such as drought, pests or disease</td>
</tr>
<tr>
<td>Reduce tillage to minimum or no till</td>
</tr>
<tr>
<td>Incorporate cover crops, green manures and other sources of organic matter to improve soil structure</td>
</tr>
<tr>
<td>Improve animal nutrition to optimise productivity (&amp; quality) and reduce the environmental footprint of livestock systems</td>
</tr>
<tr>
<td>Reseed pasture for improved sward nutrient value and / or diversity</td>
</tr>
<tr>
<td>Predict disease and pest outbreaks using weather and satellite data, and use this information to optimise inputs</td>
</tr>
<tr>
<td>Adopt precision farming: using the latest technology (e.g. GPS) to target delivery of inputs (water, seeds, pesticides, fertilisers, livestock manures)</td>
</tr>
<tr>
<td>Monitor and control on-farm energy use</td>
</tr>
<tr>
<td>Improve the use of agriculturally marginal land for natural habitats to provide benefits such as soil improvement, pollution control or pollination, and allow wildlife to thrive</td>
</tr>
<tr>
<td>Provide training for farm staff on how to improve sustainability / environmental performance</td>
</tr>
</tbody>
</table>

In addition to being asked if they were already carrying out the activity, respondents were encouraged to indicate if they would consider introducing them or increasing usage of them in the future, or if they were not applicable to their farming system (Table 5.1).

**Table 5.1. Involvement in SI activities**
<table>
<thead>
<tr>
<th>SI Activity (summary)</th>
<th>Already Carry Out (%)</th>
<th>Would consider introducing (%)</th>
<th>Would not consider (%)</th>
<th>Not applicable to Farming System (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Tolerant varieties</td>
<td>43</td>
<td>18</td>
<td>6</td>
<td>33</td>
</tr>
<tr>
<td>Reduced tillage</td>
<td>44</td>
<td>14</td>
<td>9</td>
<td>33</td>
</tr>
<tr>
<td>Cover crops</td>
<td>44</td>
<td>19</td>
<td>11</td>
<td>25</td>
</tr>
<tr>
<td>Improve animal nutrition</td>
<td>59</td>
<td>13</td>
<td>9</td>
<td>19</td>
</tr>
<tr>
<td>Reseed pasture for improved nutrient value etc.</td>
<td>59</td>
<td>14</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td>Predict disease and pest outbreaks</td>
<td>29</td>
<td>26</td>
<td>23</td>
<td>21</td>
</tr>
<tr>
<td>Precision farming</td>
<td>31</td>
<td>31</td>
<td>18</td>
<td>21</td>
</tr>
<tr>
<td>Monitor &amp; control on-farm energy use</td>
<td>45</td>
<td>24</td>
<td>16</td>
<td>15</td>
</tr>
<tr>
<td>Optimise marginal land for ecosystem services</td>
<td>80</td>
<td>10</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Train staff for improved sustainability</td>
<td>18</td>
<td>16</td>
<td>11</td>
<td>54</td>
</tr>
</tbody>
</table>

*Figures have been rounded up.*

*Columns do not sum to 100% as respondents may be involved in more than one activity*

These data seem to present a slightly different picture to the qualitative data, with relatively high levels of use and an interest in adopting/ extending use across all SI activities, with the exception of the ‘staff training for sustainability’ intervention. The latter result might be explained by the relatively low numbers of staff employed by farmers, at least in some of the CSAs, but also the potential costs to the business of staff training. Of particular note in these data is the 80% of respondents claiming to optimise marginal land for ecosystem services. This may well be a reflection of the success of agri-environment schemes in incentivising farmers to undertake this type of practice. There may also be a difference of interpretation of the term as deployed by natural and agri-environmental scientists and as understood and operationalised by farmers. Using weather and satellite data to predict disease and pest outbreaks is the SI activity that farmers, overall, are most likely to say they would not consider, followed by precision farming techniques.
Overall, when the extent to which farmers are utilising particular SI practices is examined i.e. what farmers are actually doing, this seems to suggest a stronger degree of engagement with SI than their own definitions / understandings of the concept.

Specific SI interventions are more strongly suited to some farming situations and areas than others. As such, it is reasonable to assume that livestock farmers, particularly in LFAs, will be less likely to use precision farming technologies and tolerant crop varieties (that are more strongly associated with arable farming), while it is more likely that arable farmers will be utilising reduced tillage and cover crops than in areas dominated by livestock farming. These assumptions appear to be supported by the data. Table 5.2 presents farm type data cross tabulated with SI activity with only significant results included. This table groups responses to an SI activity.

Because each CSA has a preponderance of particular farm types the patterns in Table 5.2 are also evident when SI activity is cross-tabulated with CSA. However, worth considering further are a couple of SI activities, the response to which is not so easily explained by differences in farm type in the CSAs: monitoring and control of on-farm energy, and training staff for improved sustainability. The first of these has a Pearson Chi-squared value of p<0.001 and no cells with a count of less than 5. In both the Taw and Wensum and Yare CSAs farmers were much more likely than expected to be engaged in this activity. Conway farmers were less likely but more likely than expected to express an interest in either increasing this type of activity or introducing it. Meanwhile farmers in the Upper Welland were more likely than expected to not want to consider introducing this activity. Nafferton farmers were both more likely to not be engaged in this activity and to not be interested in introducing it and also much more likely to view it as not applicable to their farming system.

The staff training variable has a Chi-squared value of 0.003, but 25% of cells have a value of less than 5. Of note here is that farmers in the Eden were much more likely than expected to see this activity as not applicable to their farming system. Avon farmers, however, were more likely than expected to express an interest in introducing this or doing more of it while at the same time being much less likely to indicate that this was not applicable to their farming system. Nafferton farmers are particularly disinterested in considering staff training.

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5 There is a statistically significant association between CSA and farm type of surveyed businesses.
<table>
<thead>
<tr>
<th>Farm type</th>
<th>SI activity prevalent:</th>
<th>SI activity not common:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(More than expected already carrying out or positive/Fewer than expected not already</td>
<td>(Fewer than expected already carrying out or positive/More than</td>
</tr>
<tr>
<td></td>
<td>carrying out or not applicable)</td>
<td>expected not already carrying out or not applicable)</td>
</tr>
<tr>
<td></td>
<td>% carrying out (or positive towards activity)</td>
<td>% NOT carrying out activity</td>
</tr>
<tr>
<td>LFA Grazing Livestock</td>
<td>Improve animal nutrition (88%)</td>
<td>Tolerant Varieties (66%)</td>
</tr>
<tr>
<td></td>
<td>Reseed pastures (83%)</td>
<td>Reduced Tillage (59%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cover crops (51%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Predict Disease (57%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Precision farming (50%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Monitor energy use (42%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Staff training (83%)</td>
</tr>
<tr>
<td>Lowland Grazing Livestock</td>
<td>Reseed pastures (83%)</td>
<td>Tolerant Varieties (54%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reduced Tillage (62%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cover crops (49%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Predict Disease (58%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Precision farming (56%)</td>
</tr>
<tr>
<td>Dairy</td>
<td>Nutrition (100%)</td>
<td>Predict disease (71%)</td>
</tr>
<tr>
<td></td>
<td>Reseed pastures (100%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Energy use (100%)</td>
<td></td>
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<tr>
<td>Mixed</td>
<td>Improve animal nutrition (94%)</td>
<td></td>
</tr>
<tr>
<td>General Cropping</td>
<td>Tolerant Varieties (88%)</td>
<td>Improve animal nutrition (75%)</td>
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<td>Reduced Tillage (88%)</td>
<td>Reseed pastures (63%)</td>
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<td></td>
<td>Cover crops (94%)</td>
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<tr>
<td>Cereal</td>
<td>Tolerant Varieties (95%)</td>
<td>Improve animal nutrition (57%)</td>
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<td></td>
<td>Reduced Tillage (87%)</td>
<td>Reseed pastures (52%)</td>
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<td></td>
<td>Cover crops (86%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Predict Disease (84%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Precision farming (84%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Energy use (82%)</td>
<td></td>
</tr>
</tbody>
</table>
6. Environment and resource management

Key findings

- Responses to the questions in the environment and resource management section of the survey generally indicated a stated concern for the environment, with good environmental management often being seen as part of good farming practice.

- Despite 95% of interviewees having at least one formal environmental management plan, nearly half of these have made no changes to their farm practices as a result. Many farmers appear to see such plans as a ‘tick-box exercise’ that they are required to do for regulatory reasons, but which have made little difference to their farm practices because they entail ‘common-sense’ activities that they were already doing.

- On the other hand, many farmers did acknowledge benefits arising from formal management plans. In particular, participants reported the plans having generally increased their awareness of their environmental management practices, resulting in them taking greater care over, for example, the application of fertilisers and pesticides. Farmers also particularly recognised the benefits of soil, manure and nutrient management for the health of their soils and for increasing the efficiency of their inputs. Animal health plans were also reported to have increased users’ awareness of the correct dosage and timing of animal medications.

- Participation in formal environmental management arrangements was relatively high: The majority of interviewees are involved in at least one farm assurance scheme and the majority have a current AES agreement. 61% of those in an AES had a standard level agreement (e.g. ELS) and 39% had an advanced level agreement (e.g. HLS). The high level of participation generally is broadly comparable with national uptake of Environmental Stewardship and the remaining legacy AES contracts.

- Intriguingly, there is an association between presence and type of AES agreement and interviewees’ understandings of SI. Those without an agreement were more likely to be unsure or unclear about the meaning of SI, and those with an advanced level agreement were more likely to understand SI as relating to both production and environmental obligation.

- There were also relationships between the existence and type of AES agreement and some (but not all) of the SI activities. Those with an AES agreement were more...
likely to consider introducing/increasing precision farming than those without an agreement. Interviewees with an advanced AES were more likely than those with a standard AES (who were in turn more likely than those without an agreement) to already be growing tolerant varieties of crops and optimising marginal land for wildlife. We are unable to say anything about causality here but it is interesting to note the association.

- When asked what they considered to be the main activity on the farm that benefits the environment, farmers cited a wide range of farming practices. However, a common response was that it is the integrated farming system as a whole that is of benefit to the environment (these respondents were not necessarily referring to IFM in a formal sense). The other most frequently cited activities tended to relate either to tangible features such as hedgerows and buffer strips, the avoidance of pollution, or specific wildlife-focused practices (particularly those targeted at bids). Very few believed that none of their farming activities had a beneficial impact on the environment.

- The majority of farmers (68%) did not feel that any of their farming activities have an avoidable detrimental impact on the environment. The terms ‘avoidable’ and ‘detrimental’ in this question were left open to interpretation, and farmers therefore varied in the extent to which they saw certain activities (such as the spraying of insecticides) as avoidable. Of those interviewees who did cite detrimental impacts, the issues they were concerned about usually related to either the use of sprays or soil erosion/runoff.

- Throughout the results on environmental and resource management survey questions, it is apparent that there is a relationship between farm size and formal environmental and resource management. The larger the farm, the more likely they were to; have formal environmental management plans; be involved in farm assurance schemes; and have an AES agreement (and for this to be an advanced rather than a standard level agreement). This may be partly related to a greater financial and administrative capacity within larger farms. Since larger farms were also more likely to state that they had made no changes as the result of having environmental management plans, it is possible that these farms are viewing such formal arrangements as a ‘tick-box’ exercise necessary for reputational and legislative purposes, rather than as directly influencing their practical management of the environment.

The nature and extent of farmers’ engagement with environmental management is addressed in this section. Firstly, respondent’s use of environmental management plans is reported before discussion of their involvement in farm assurance schemes and agri-environment
scheme participation. Key activities that are perceived as benefitting the farm environment are identified together with those that may have adverse environmental impacts.

6.1 Environmental management plans

The survey found a relatively high uptake of environmental management plans. In total 46% of all farms have at least one environmental management plan. The plans most likely to be ‘actively used’ by respondents include manure and nutrient plans, soil and animal health plans. Few farmers had a formal plan for energy management, biodiversity or water (see Table 6.1 and Figure 6.1).

Table 6.1. Uptake of environmental management plans

<table>
<thead>
<tr>
<th>Type of environmental management plan</th>
<th>Have and actively use</th>
<th>Have but do not actively use</th>
<th>Do not have a formal plan</th>
<th>N/A to farming system</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Manure</td>
<td>59</td>
<td>15</td>
<td>20</td>
<td>7</td>
</tr>
<tr>
<td>Nutrient</td>
<td>59</td>
<td>6</td>
<td>31</td>
<td>5</td>
</tr>
<tr>
<td>Energy efficiency</td>
<td>7</td>
<td>2</td>
<td>80</td>
<td>10</td>
</tr>
<tr>
<td>Crop protection / Integrated pest</td>
<td>40</td>
<td>3</td>
<td>31</td>
<td>26</td>
</tr>
<tr>
<td>Soil</td>
<td>61</td>
<td>11</td>
<td>26</td>
<td>3</td>
</tr>
<tr>
<td>Wildlife / biodiversity</td>
<td>27</td>
<td>2</td>
<td>67</td>
<td>4</td>
</tr>
<tr>
<td>Water</td>
<td>18</td>
<td>3</td>
<td>64</td>
<td>15</td>
</tr>
<tr>
<td>Pollution risk assessment &amp; abatement</td>
<td>45</td>
<td>7</td>
<td>39</td>
<td>9</td>
</tr>
<tr>
<td>Animal health</td>
<td>63</td>
<td>4</td>
<td>16</td>
<td>18</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Columns do not sum to 100% as respondents may have more than one management plan
Figure 6.1: Type of environmental management plan(s) held by surveyed farms

The existence and use of environmental management plans varies considerably by CSA (Table 6.2). Much of this variation is probably attributable to the dominant farming types in each area. Overall, interviewees in the Conwy and Nafferton tended to have the least number of environmental management plans, and those in the Wensum & Yare and Avon the most.

Wensum & Yare and Avon farmers were more likely than expected, and Conwy and Nafferton farmers less likely, to have (and actively use) manure management plans. More understandably, Wensum & Yare and Avon farmers were more likely to have (and actively use) crop protection/IPM management plans (probably a function of the dominant farm types in these areas). Similarly, Wensum & Yare farmers were less likely to have (and actively use) animal health plans (again, this is a reflection of the farm type characterises of this area).
Table 6.2: The association between ‘active use’ of management plans and CSA

<table>
<thead>
<tr>
<th>Type of environmental management plan held and ‘actively used’</th>
<th>Taw</th>
<th>Conway</th>
<th>Upper Welland</th>
<th>Nafferton</th>
<th>Wensum &amp; Yare</th>
<th>Eden</th>
<th>Avon</th>
<th>All farms</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Manure</td>
<td>77</td>
<td>37</td>
<td>41</td>
<td>43</td>
<td>71</td>
<td>66</td>
<td>74</td>
<td>59</td>
</tr>
<tr>
<td>Nutrient</td>
<td>63</td>
<td>31</td>
<td>71</td>
<td>37</td>
<td>80</td>
<td>49</td>
<td>80</td>
<td>59</td>
</tr>
<tr>
<td>Energy efficiency</td>
<td>11</td>
<td>9</td>
<td>6</td>
<td>3</td>
<td>14</td>
<td>3</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Crop protection / Integrated pest</td>
<td>26</td>
<td>23</td>
<td>50</td>
<td>26</td>
<td>71</td>
<td>17</td>
<td>66</td>
<td>40</td>
</tr>
<tr>
<td>Soil</td>
<td>49</td>
<td>37</td>
<td>62</td>
<td>54</td>
<td>74</td>
<td>71</td>
<td>77</td>
<td>61</td>
</tr>
<tr>
<td>Wildlife / biodiversity</td>
<td>17</td>
<td>26</td>
<td>21</td>
<td>29</td>
<td>40</td>
<td>23</td>
<td>37</td>
<td>27</td>
</tr>
<tr>
<td>Water</td>
<td>9</td>
<td>17</td>
<td>15</td>
<td>11</td>
<td>34</td>
<td>23</td>
<td>20</td>
<td>18</td>
</tr>
<tr>
<td>Pollution risk assessment &amp; abatement</td>
<td>40</td>
<td>34</td>
<td>29</td>
<td>31</td>
<td>71</td>
<td>51</td>
<td>57</td>
<td>45</td>
</tr>
<tr>
<td>Animal health</td>
<td>80</td>
<td>71</td>
<td>41</td>
<td>69</td>
<td>29</td>
<td>91</td>
<td>57</td>
<td>63</td>
</tr>
<tr>
<td>Other</td>
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<td>3</td>
<td>24</td>
<td>0</td>
<td>11</td>
<td>9</td>
<td>6</td>
<td>8</td>
</tr>
</tbody>
</table>

Columns do not sum to 100% as respondents may have more than one management plan

The relationship between farm type and environmental management plan use is explored in more detail in Table 6.3. Overall, LFA and Lowland Grazing livestock farmers tended to have fewer environmental management plans than the other farm types. Dairy farmers were more likely than expected to have (and actively use) manure management plans (100% had them).

Not surprisingly LFA Grazing Livestock farmers were less likely, and Cereal farmers more likely, to have (and actively use) nutrient management plans. Cereal farmers were more likely to have (and actively use) soil management plans and Dairy farmers were more likely to have (and actively use) pollution risk assessment and abatement plans.
Table 6.3: The association between ‘active use’ of management plans and farm type

<table>
<thead>
<tr>
<th>Type of environmental management plan held and ‘actively used’</th>
<th>Livestock</th>
<th>Arable</th>
<th>All farms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Manure</td>
<td>57</td>
<td>64</td>
<td>59</td>
</tr>
<tr>
<td>Nutrient</td>
<td>45</td>
<td>88</td>
<td>59</td>
</tr>
<tr>
<td>Energy efficiency</td>
<td>5</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>Crop protection / Integrated pest</td>
<td>22</td>
<td>78</td>
<td>40</td>
</tr>
<tr>
<td>Soil</td>
<td>52</td>
<td>69</td>
<td>58</td>
</tr>
<tr>
<td>Wildlife / biodiversity</td>
<td>24</td>
<td>36</td>
<td>28</td>
</tr>
<tr>
<td>Water</td>
<td>15</td>
<td>26</td>
<td>19</td>
</tr>
<tr>
<td>Pollution risk assessment &amp; abatement</td>
<td>39</td>
<td>59</td>
<td>45</td>
</tr>
<tr>
<td>Animal health</td>
<td>74</td>
<td>40</td>
<td>63</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>13</td>
<td>8</td>
</tr>
</tbody>
</table>

1 Columns do not sum to 100% as respondents may have more than one management plan
2 Farm Type categories have been amalgamated to maintain confidentiality. Livestock includes LFA, Lowland and Dairy farms; Arable includes general cropping and cereal farms

There was a clear relationship between farm size and the likelihood of participants having and actively using environmental management plans, with larger farms tending to have more plans (Table 6.4). Small farms were significantly less likely than expected to have (and actively use) manure, nutrient, crop protection, soil, wildlife, pollution and animal health plans.

On the other hand, very large farms were more likely than expected to have (and actively use) crop protection, water, and pollution management plans and Ultra large farms were more likely than expected to have (and actively use) nutrient, crop protection and wildlife plans.

Table 6.4: The association between ‘active use’ of management plans and farm size

45
Type of environmental management plan held and ‘actively used’

<table>
<thead>
<tr>
<th></th>
<th>Small</th>
<th>Medium</th>
<th>Large</th>
<th>Very large</th>
<th>Ultra large</th>
<th>All farms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manure</td>
<td>33%</td>
<td>68%</td>
<td>59%</td>
<td>61%</td>
<td>70%</td>
<td>58%</td>
</tr>
<tr>
<td>Nutrient</td>
<td>33%</td>
<td>49%</td>
<td>59%</td>
<td>68%</td>
<td>79%</td>
<td>58%</td>
</tr>
<tr>
<td>Energy efficiency</td>
<td>8%</td>
<td>10%</td>
<td>6%</td>
<td>5%</td>
<td>9%</td>
<td>7%</td>
</tr>
<tr>
<td>Crop protection / Integrated pest</td>
<td>15%</td>
<td>22%</td>
<td>34%</td>
<td>58%</td>
<td>64%</td>
<td>39%</td>
</tr>
<tr>
<td>Soil</td>
<td>46%</td>
<td>54%</td>
<td>61%</td>
<td>67%</td>
<td>73%</td>
<td>60%</td>
</tr>
<tr>
<td>Wildlife / biodiversity</td>
<td>13%</td>
<td>7%</td>
<td>28%</td>
<td>36%</td>
<td>52%</td>
<td>27%</td>
</tr>
<tr>
<td>Water</td>
<td>8%</td>
<td>15%</td>
<td>20%</td>
<td>27%</td>
<td>15%</td>
<td>18%</td>
</tr>
<tr>
<td>Pollution risk assessment &amp; abatement</td>
<td>18%</td>
<td>37%</td>
<td>45%</td>
<td>59%</td>
<td>58%</td>
<td>45%</td>
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<tr>
<td>Animal health</td>
<td>36%</td>
<td>71%</td>
<td>75%</td>
<td>65%</td>
<td>55%</td>
<td>62%</td>
</tr>
<tr>
<td>Other</td>
<td>3%</td>
<td>2%</td>
<td>11%</td>
<td>8%</td>
<td>12%</td>
<td>7%</td>
</tr>
</tbody>
</table>

1 Columns do not sum to 100% as respondents may have more than one management plan

The following discussion considers the extent to which environmental management plans actually lead to changes in thinking and practice on farms. It is one thing to have a plan in place but quite another for the plan to trigger a management change, although of course this is at least partly influenced by the starting position. Interestingly, of the 231 respondents (95%) who reported having at least one environmental management plan in place, 48% said that they have made no changes as a result of this plan(s).

The highest number of reports of ‘no change’ was in the Upper Welland, where 65% of farmers had not made any changes as a result of their plan(s), and the lowest were in the Nafferton, where 26% said they had made no change (Avon = 51%; Taw = 49%; Eden = 46%; Conwy = 43%; Wensum & Yare = 31%) (see Table 6.5).

Table 6.5: Percentage of farmers within each CSA who have made changes as a result of management plans

46
Reports of ‘no change’ increased with farm size, with 38% of small farms and 52% of ultra large farms stating they had made no changes as the result of environmental management plans.

Generally, these farmers felt that the plans merely reiterated what they saw as ‘common-sense’ and what they were doing anyway. They thus viewed the plans as a ‘tick-box exercise’ that do not necessarily improve farming practice and that are only necessary for bureaucratic or farm-certification reasons.

“You have a plan because you have to have one, it makes no difference to the farming behaviour. You’re either aware of the issues and do something about them or you’re not. Whether you have a plan or not is irrelevant.”

(Lowland Grazing Livestock farmer, Taw – 10024)

“When you’ve been farming for as long as I have you just do thing naturally, you don’t need a plan. And also with livestock its sixth sense, you know if things aren’t right when you go out there.”
“We already farmed in such a manner.”

(Lowland Grazing Livestock farmer, Eden – 60014)

“To be quite honest most of these things I keep because it’s a statutory requirement to do so. I’ve had to dip into our manure management plan and nutrient management plan for cross-compliance inspection and things like that. There are so many of these things now that we have to do because we’re required to, but I don’t use them for farm management purposes really, because most of it we were doing anyway. Like the wildlife biodiversity management, it’s a huge part of our business and we’re doing it all the time, but it’s not written on a piece of paper.”

(Cereal farmer, Avon – 71012)

One farmer also commented that he felt the requirements in some of the management plans – and advice given at relevant meetings – conflict with each other and are inappropriate for, or possible on, their type of land:

“There are things that they say are wrong that we know they’re wrong about - an example of that is sugar beet land in the winter which, they don’t like us going on wet land, well if we didn’t go on wet land we wouldn’t be able to take the sugar beet crop off and there wouldn’t be a sugar beet industry. So you’re practical about it, you go on on days when it’s dry enough to do a good job and you don’t want to go on when it’s not. And standing waters - you’re not allowed to get water into the ditches. I was at a soil management meeting when I heard this and I said hang on, am I in a soil management meeting or an environmental meeting? Because we’ve got to plough the land to get the water back into the watercourses and that’s the only way to get the land back into production. And if we don’t do that we lose a whole crop for one year. So from a soil management point of view we know that we have turn it over and release the water, but if you’re in an environmental meeting you’re not allowed to do that because it results in dirty water in the ditch. So it depends what meeting you go to. There’s a conflict between soil management and water management.”

(General Cropping farmer, Wensum & Yare – 51050)

6.2 Farm assurance schemes

The survey has also revealed a high level of involvement in farm assurance schemes with 78% interviewees involved in at least one farm assurance scheme. This varied somewhat by CSA with farmers in the Conwy least likely to be involved in a farm assurance scheme and Eden farmers being the most likely to be involved (Figure 6.2). There was greater variation in terms of both farm type and farm size (Figure 6.3) with Lowland Grazing Livestock farms less likely
than expected to be involved in a farm assurance scheme (Chi-squared significant, p=0.008, but 35.7% cells have an expected value less than 5). There was a significant relationship between farm size and involvement in farm assurance schemes. Small and Medium sized farms were less likely than expected to be involved whilst Very large farms were more likely than expected to be involved (Chi-squared significant, p<0.001).

Finally, Figure 6.4 indicates the range of schemes respondents were involved with the Red Tractor scheme being the most common, closely followed by Farm Assured British Beef and Lamb (FABBL).

**Figure 6.2: Involvement in Farm Assurance Schemes by CSA**

![Image showing involvement in Farm Assurance Schemes by CSA with percentages and respective farm assurance schemes]

**Figure 6.3: Involvement in Farm Assurance Schemes by farm type and farm size**

![Image showing involvement in Farm Assurance Schemes by farm type and farm size with percentages]

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1 Farm Type categories have been amalgamated to maintain confidentiality. Livestock includes LFA, Lowland and Dairy farms; Arable includes general cropping and cereal farms.

**Figure 6.4: Farm Assurance Schemes participated in by respondents**
6.3 On-farm energy generation

A significant minority of the sample (26%) currently generate energy on the farm that is used within the business. There was no significant relationship between on-farm energy generation and either CSA (Figure 6.5), farm type, or farm size (Figure 6.6), although Dairy farmers and interviewees in Taw appeared slightly more likely, and those in Nafferton slightly less likely, than expected to be generating energy on the farm.

For those generating energy on the farm, that generation provides an average of 32% of the farm’s total energy use. Perhaps unsurprisingly, solar panels (either PV or solar thermal) were the most common type of energy generator used – 68% of those generating energy did so using this type of generation. The use of solar was most common in the Taw (9 farms), Avon (9 farms) and Wensum & Yare (8 farms) catchments.

Figure 6.5: On-farm energy generation by CSA
Figure 6.6: On-farm energy generation by farm type\textsuperscript{1} and size

\textsuperscript{1} Farm Type categories have been amalgamated to maintain confidentiality. Livestock includes LFA, Lowland and Dairy farms; Arable includes general cropping and cereal farms.

6.4 Organic land

Just 16 of the 244 farms interviewed (7\%) had some land certified organic. Of those with organic land, the average area certified organic was 442ha. Only 1 farm had land under organic conversion. This farm had 100ha land in organic conversion in addition to 3000ha already certified. Given the small number of organic farms we are not able to perform any further meaningful analysis with this data.
6.5 Current agri-environment scheme agreements

The majority of interviewees (78%) had a current AES agreement and the average length of participation in a current AES was 6.3 years. For those farms with a current AES agreement, AES activities cover an average of 64% of the farm, ranging from 3% to 100%. Given the widespread uptake of AES among the sample it is not surprising that there was no relationship between having an AES agreement and CSA (Figure 6.7). On the other hand, differences in both farm type and farm size are associated with AES participation (Figure 6.8). For example, LFA Grazing Livestock and Cereal farmers were more likely than expected to have an AES agreement (Chi-squared significant, \( p<0.001 \), but 35.7% cells have an expected count less than 5). Small farms were less likely than expected to have an AES agreement (Chi-squared significant, \( p<0.001 \)) whilst Very large and Ultra large farms were more likely than expected to have an AES agreement (Chi-squared significant, \( p<0.001 \)).

**Figure 6.7: Participation in a current AES by CSA**

![Figure 6.7: Participation in a current AES by CSA](image-url)
The type of AES agreement held by farmers was also examined. Agreements have been classified as ‘Standard’ (including ELS, OELS, UELS and Glastir) and ‘Advanced’ (HLS and Glastir Advanced). Using this classification it can be seen from Figure 6.9 that Farmers in the Wensum & Yare and Avon were more likely than expected to have an advanced AES (Chi-squared significant, p=0.001).

Although there was no significant relationship between farm type and whether their AES agreement was standard or advanced, Small and Medium farms were less likely, and Very large and Ultra large farms more likely, than expected to have an advanced AES agreement (Figure 6.10) (Chi-squared significant, p<0.001).

Examples of activities cited as undertaken under agri-environment schemes were numerous both within and across the farms interviewed. These activities have been grouped into broad categories of management which they relate to, as shown in Figure 6.11 (which clearly illustrates the popularity of some of the ‘less demanding’ options). Box 6.1 explains the type of actions associated with each broad ‘activity’ category.

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1 Farm Type categories have been amalgamated to maintain confidentiality. Livestock includes LFA, Lowland and Dairy farms; Arable includes general cropping and cereal farms.
Figure 6.9: Existence and type of current AES agreement by CSA

Figure 6.10: Existence and type of current AES agreement by farm type and size.

1 Farm Type categories have been amalgamated to maintain confidentiality. Livestock includes LFA, Lowland and Dairy farms; Arable includes general cropping and cereal farms.
Figure 6.11: Main activities undertaken as part of current AES¹

![Bar chart showing the number of references to various types of activities grouped under each management category.]

¹Note that individuals may have made more than one reference to each category of activity

Box 6.1: Examples of the types of activities grouped under each management category

**Boundaries** – includes hedgerow and ditch management; maintenance of stone walls; and fencing.

**Low/no input areas** – refers to areas of land where no or low inputs are applied

**Margins/field corners** – buffer strips, field margins, headlands and field corners left uncropped

**Livestock management** – covers a range of livestock management measures designed to reduce impact on the environment. Includes mixed stocking; restricted grazing; keeping native cattle; and not over-wintering stock on certain areas.

**Birds** – covers all management activities specifically designed to improve the numbers and/or varieties of birds on the farm. Includes wild bird seed covers; plots for ground-nesting birds; bird boxes; and habitat creation and/or protection for overwintering waders.

**Specific habitats/landscapes** – refers to management undertaken specifically for certain habitats or landscape types. For example; woodland management; grassland management; scrub control; arable reversion; hay meadow management; downland reversion; heather restoration; and parkland management.

**Crop management** – covers specific crop management techniques such as; over-winter stubbles; crop rotation; cover crops; spring sown cereals; and growing root crops.
Tree planting/management – refers to the planting and/or management of on-farm trees (not including broader woodland management, which is covered under ‘specific habitats/landscapes’).

Flowers/insects – includes activities specifically designed to encourage and maintain flowers and/or insects on the farm. These include; pollen and nectar mixes; wildflower meadows; beetle banks; and floristically enhanced grass margins.

Cutting restrictions – restrictions to the times at which grass cutting can be undertaken.

Landscape and historic environment – refers to activities to manage the landscape in general; and the protection/maintenance of archaeological sites, traditional buildings and other heritage features.

Other – covers a range of miscellaneous activities cited by farmers, such as educational access; recreational access; soil testing; record keeping; and weed control.

Respondents were also questioned about cooperation in agri-environment schemes: Only 15% of those interviewees in a current AES (11% of all interviewees) had an agreement that involves formal cooperation with other farmers. Eden farmers were more likely than expected to have an AES agreement that involved formal cooperation with other farmers (Chi-squared significant, p=0.003, but 50% cells have an expected count less than 5) (See Figure 6.12). LFA Grazing Livestock farmers were also more likely than expected to have a current AES agreement which involved formal cooperation with other farmers (Chi-squared significant, p=0.001, but 25% cells have an expected count less than 5). There was no significant relationship between farm size and participation in an AES involving cooperation (Figure 6.13).

Figure 6.12: Current AES agreements involving formal cooperation by CSA
6.6 Previous AES agreements (for those in a current scheme)

- 66% interviewees in a current AES have also had a previous agreement.
- There was no significant relationship between CSA and whether those in a current scheme had also been in a previous scheme (Figure 6.14). However, some CSAs (notably Avon, Conwy and the Upper Welland) have a long history of participation in AES.
- There was no significant relationship between farm type and whether those in a current scheme had also been in a previous scheme (Figure 6.15).
- Small farms were less likely than expected to have been in a scheme prior to their current agreement (Chi-squared significant, p=0.009) (Figure 6.15).

6.7 Previous AES agreements (for those not in a current scheme)

- Of the 54 farmers not in a current scheme, only 10 (19%) had ever participated in an AES (Figure 6.16).
- Of the 10 who had previously participated, 8 had an ELS agreement, 1 a Countryside Stewardship agreement, and 1 an Environmentally Sensitive Area agreement. The average length of previous involvement was 6.2 years, ranging from 1 to 10 years.
- The main management activities undertaken as part of a previous AES included hedgerow management; bird boxes; buffer strips; a beetle bank; public access; root crops; slurry injection; restricted stocking levels; and tree planting.
- On average, these activities covered 62% of the farm, ranging from 10 – 100%.
Figure 6.14: Respondents with previous (as well as a current) AES agreements by CSA

Figure 6.15: Respondents with previous (as well as a current) AES agreements by farm type\(^1\) and size

\(^1\)Farm Type categories have been amalgamated to maintain confidentiality. Livestock includes LFA, Lowland and Dairy farms; Arable includes general cropping and cereal farms.
6.8 Relationships between AES participation and understandings of SI

Interestingly, although not statistically significant, there may be some link between having an AES and the way in which SI is understood (Figure 6.17). 64% of those without an AES were not clear about the meaning of SI, compared to 49% of those with a standard AES and 47% of those with an advanced AES. In contrast, 31% of those with an advanced AES understood SI as relating to both production and environmental obligation, compared to only 15% of those with no AES and 21% of those with a standard AES.

Relationships were found between the existence/type of AES agreement and the following types of SI activity: Tolerant varieties; Re-seed pasture; Precision farming; Optimise marginal land for wildlife. These relationships are explored below. No relationships were found between existence/type of AES agreement and the other SI activities.
As Figure 6.18 indicates, those with an advanced AES agreement were more likely than expected to already be growing tolerant varieties (58%, compared to 41% of those in a standard scheme and 29% of those without an agreement) (Chi-squared significant, p=0.012, but 16.7% cells have an expected count less than 5). The relationship between having an advanced AES agreement and willingness to reseed for improved sward nutrient value and/or diversity is more complicated (Figure 6.19). Farmers with an advanced AES were more less willing to consider introducing this activity in the future (25% compared to 11% of those with a standard agreement and 8% of those without an agreement) (Chi-squared significant, p=0.029). Several interviewees said that they would not consider introducing this activity because their agreement would not allow them to re-seed permanent pastures.

Those with a standard AES were more likely than expected to consider introducing precision farming activity in the future (38% compared to 29% of those in with an advanced AES and 19% of those without an agreement – see Figure 6.20) (Chi-squared significant, p=0.007). However, the higher occurrence of ‘would consider’ among those with a standard AES compared to those with a high level AES may be due to the fewer numbers of interviewees in this category who feel that precision farming is applicable to their farming system. Those without an AES agreement appear slightly less likely to already be carrying out precision farming, or to consider introducing it, though this was not statistically significant.
Figure 6.18: The association between growing stress tolerant varieties and existence / type of AES

Figure 6.19: The association between reseeding for improved sward nutrient value and/or diversity and existence / type of AES

Of particular interest, Figure 6.21 indicates that farmers with an advanced AES were more likely than expected to already be optimising marginal land for wildlife (99% compared to 78% of those with a standard AES and 60% of those without an agreement) (Chi-squared significant, p<0.001, but 41.7% cells have an expected count less than 5).
6.9 Main activities on the farm that benefit the environment

This question elicited a range of responses, with the majority of farmers citing at least one activity on the farm that benefits the environment, although 6 said that nothing really benefitted it and another 6 were not sure and found it difficult to answer. In general, though, interviewees believed that they were helping the environment in some way and several commented on how they enjoy seeing wildlife on the farm.
“I like to see my swallows, my birds, all my other animals, so if I can manage around them and not cut that field until they've nested and gone, then I do that.”

(Lowland Grazing Livestock farmer, Taw – 10019)

“We've got a wildflower area ... ... and that definitely generates a lot - it's only 2 acres but there's so many bees and butterflies out there in the summer, it's wonderful.”

(Lowland Grazing Livestock farmer, Avon – 72007)

In answering this question, several farmers also talked about how they believe that looking after the environment is part of good farming practice and that farmers are custodians who are responsible for the way that the countryside looks today. Some interviewees also indicated how they see looking after the environment as part of ensuring the long-term sustainability of the farm.

“Good farmers do look after the environment. They maintain the environment which has been created over several generations of farming.”

(Mixed farmer, Nafferton – 42093)

“So it's not my single aim, but that's all part of farming isn't it, looking after it as best you can for as long as you can.”

(Lowland Grazing Livestock farmer, Taw – 10019)

“You have got your wetlands and various things that livestock can't get on, and that's ideal for certain birds and creatures, but you've still got to maintain your grass and your woodlands as far as I'm concerned. You can't just let things - Mother Nature will take over and the balance will be right one day but it's going to take many years for that to happen so you do have to help it.”

(Lowland Grazing Livestock farmer, 47, Wensum & Yare – 52092)

“We want our grandchildren and great-grandchildren, a few generations down the line, we want them to be here farming and still making a profit because you've got, but looking after what we've got.”

(LFA Grazing Livestock farmer, Taw – 10016)

The most common types of farm activities cited by interviewees as beneficial to the environment are presented in Table 6.6 and discussed below.
The most common response from interviewees to question 22 was that their general farming system benefitted the environment and that it was difficult to single out any particular activity (28% of all farmers gave this type of answer). These farmers often commented on seeing farming as integral to the way that the countryside looks today; explained that their type of farming has a low or beneficial impact on the environment; or cited examples of how they help wildlife across the farm.

This type of response was most frequent in the Taw catchment (51% of farmers here gave this response) and least in the Conwy and Wensum & Yare catchments (17% in each) (Avon = 34%; Nafferton = 31%; Eden = 23%; Upper Welland = 21%).

“Farming. The environment we live in is one that has been created by farming, so as long as we keep farming it it will continue along as long as we don’t tweak things in the wrong way, which is presumably what we’re trying to avoid with all we’ve just talked about. Even the uplands is a farmed landscape, you can see the remains of the iron-age farming.”

(LFA Grazing Livestock farmer, Taw – 10017)

“That’s a difficult one to answer really because I believe the farm benefits in all sorts of ways… We maintain our ditches, we maintain our hedges. We’ve never cut our hedges every year, we’ve always managed to maintain some berries on the hedges. We haven’t done this consciously, it’s just something that’s been done without really thinking, probably because it’s always been done that way.”

(Cereal farmer, Upper Welland – 31016)

“The fact that we farm 208 ha. Because it’s our everyday activity which sustains that 208 ha and helps diversity of wildlife and habitats. It would just be a wasteland if it wasn’t farmed.”

(LFA Grazing Livestock farmer, Nafferton – 41071)

“It’s a jigsaw of various things and bringing them together. So it’s the whole package. From our point of view, we’re managing the land, obviously we need to earn an income on it, but we also need to be able to put that bit back and so we’re doing our bit. So it’s the whole thing together.”

(General Cropping farmer, Wensum & Yare – 51080)
Table 6.6: Farm activities that benefit the environment, as cited by respondents

<table>
<thead>
<tr>
<th></th>
<th>Taw</th>
<th>Conway</th>
<th>Upper Welland</th>
<th>Nafferton</th>
<th>Wensum &amp; Yare</th>
<th>Eden</th>
<th>Avon</th>
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<tr>
<td>Count</td>
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<td>7</td>
<td>11</td>
<td>6</td>
<td>8</td>
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<tr>
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<td>21</td>
<td>31</td>
<td>17</td>
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<td>34</td>
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<tr>
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<td>8</td>
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<td>11</td>
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<td>22</td>
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<td>14</td>
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<td>18</td>
<td>14</td>
<td>23</td>
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<td>23</td>
<td>15</td>
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<td>22</td>
<td>17</td>
<td>21</td>
<td>20</td>
<td>6</td>
</tr>
</tbody>
</table>

\(^1\)Column percentages do not sum to 100\% as respondents may cite more than one activity

This type of response was particularly common among LFA Grazing Livestock and Mixed farmers (37\% and 35\% respectively of whom made such comments), who frequently commented on the low environmental impact of their extensive farming approach.

“We try not to destroy natural habitats and the extensive system gives wildlife an opportunity to exist.”

(Lowland Grazing Livestock farmer, Eden – 60007)

“Way it's farmed. Extensive system sheep and cattle. Good for wildlife. When FMD, lost stock and noticed all the birds went - peewits and curlews etc. - quiet. Black grouse now.”

(LFA Grazing Livestock farmer, Nafferton – 42054)
“Well I’m not that intensive, so if you walked around the fields now you’d see skylarks nesting, you’d see curlews. So because I’m not that intensive, I like to see my swallows, my birds, all my other animals, so if I can manage around them and not cut that field until they’ve nested and gone, then I do that. So it’s not my single aim, but that’s all part of farming isn’t it, looking after it as best you can for as long as you can.”

(Lowland Grazing Livestock farmer, Taw – 10019)

There appeared to be no relationship between this type of response and farm size.

Hedgerow management was also a common answer to the question about key activities that are environmentally beneficial, with 56 farmers (23%) including this in their responses.

These references were relatively evenly spread across the case study areas, but were slightly more concentrated among Mixed and Dairy farmers than other farm types; 41% and 33% respectively of whom cited this activity.

These references were most frequent among small farms (36% of whom cited the activity) and least frequent among ultra large farms (12% of whom cited the activity) (medium = 22%, large = 19%, very large = 24%).

“Looking after my hedges, which I don’t massacre, and some of them I only cut every other year and also I don’t cut them flat, I cut them like a triangle at the top and therefore it isn’t killing it.”

(Lowland Grazing Livestock farmer, Taw – 10006)

“We’ve got hedgerows planted that are 10 years old now and corridors for wildlife.”

(Dairy farmer, Conwy – 20013)

“We’ve always maintained hedgerows, we’ve never been ones to rip out hedgerows. We’ve got a lot of small fields probably at the detriment to profitability, but we maintain those.”

(Cereal farmer, Upper Welland – 32040)

36 farmers (15%) included their use of buffer strips, margins and field corners as one of the main activities on their farm that benefits the environment.
Instances of farmers citing this activities were slightly more common in the Wensum & Yare, Upper Welland and Avon catchments than the other areas, accounting for 22%, 22% and 17% respectively of those farmers citing this activity (Nafferton = 14%; Taw = 11%; Conwy = 8%; Eden = 6%). This is likely to be linked to farm type, as 46% of those citing this activity were either General Cropping or Cereal farmers.

References to this activity were most frequent among ultra large farms (21% of whom cited the activity) but fairly similar among the other farm sizes (12-16% of whom cited the activity).

“I would say the grass strips around the field... I think they provide a lot of seeds for birds, and habitat for wildlife.”

(Cereal farmer, Upper Welland – 32026)

“Buffer strips are great ... they help our LERAP value of the farm and obviously help with the pollution, and some of them are walkways as well so that's attracted more public to the farm, which I think is a good thing.”

(Cereal farmer, Wensum & Yare – 51011)

“I would think the margins do. Because we keep away from the hedges and water with our fertilisers and sprays, which we've got to anyway, so the margins are there to protect that - and we're getting paid for it... that wasn’t the reason I started to do it in the first place, but that does come into it. But they do protect the water, and help birdlife and everything else, which I love. We now see birds that I haven't seen since I was a kid. It does help that.”

(General Cropping farmer, Wensum & Yare – 52069)

“All the HLS – margins in particular. I have seen an incredible increase in small birds - we always did some of it, we always kept tracks and things around fields because I never liked going right up to hedgerows, but there’s absolutely no doubt that the planting of the field margins and buffer strips has made a huge difference. It's very exciting.”

(Cereal farmer, Avon – 72019)

33 farmers (14%) considered their low application of insecticides and artificial fertilisers to be one of the main activities that benefited the environment.

This was mentioned slightly more frequently by farmers in the Nafferton, Conwy and Avon catchments (accounting for 27%, 21% and 21% of comments respectively) than the other areas (Wensum & Yare = 12%; Taw = 9%; Eden = 9%; Upper Welland = 0%). This activity was
mentioned most frequently by Mixed farmers and least frequently by General Cropping farmers.

“Manure, as it helps a lot. We store it and it goes back on land or we sell it – it’s better than fertiliser for the environment.”

(LFA Grazing Livestock farmer, Conwy – 20024)

“Not applying N fertiliser. When we stopped doing that 20 years ago we noticed more clover and much smaller thistles, but not much change in output. People had assumed that N helped - and it used to be cheap.”

(LFA Grazing Livestock farmer, Nafferton – 42060)

“The whole thing is benefitting the environment. We don’t use any chemicals, we don’t use any fertilisers - although I am all in favour of chemicals and fertilisers being used properly with the population we’ve got to feed. But the whole business structure is to look after the environment - due to payments, if I didn’t get the payments I couldn’t farm the way I do.”

(Lowland Grazing Livestock farmer, Avon – 72002)

26 farmers (9%) mentioned their management activities that help birdlife as being one of the main activities on the farm that benefits the environment. The use of wild birdseed mixes and plots for ground-nesting birds (usually undertaken as part of an agri-environment scheme) were particularly cited as beneficial (other activities mentioned as beneficial to birds included over-winter stubbles, root crops, ponds and bird boxes).

Bird-related activities were cited more frequently in the Wensum & Yare, Conwy and Avon areas, accounting for 33%, 24% and 19% respectively of these comments (Upper Welland = 14%; Nafferton = 5%; Eden = 5%; Taw = 0%). These citations were most frequent among General Cropping farmers, whereas no Dairy or Mixed farmers made reference to bird-focused activities in their responses.

References to bird-related activities were most frequent among very large and ultra large farms (17% and 12% respectively of whom mentioned this activity) and least frequent among medium farms (none of whom mentioned it) (small = 8%, large = 5%).

“The stone curlew plot has worked well - for 3 years now we’ve actually had 2 pairs on there, it’s been good.”

(Cereal farmer, Avon – 71037)
“Having areas of arable land managed in some way for wild birds. Providing seed through the winter for animals and birds to eat. Hedges are also important.”

(General Cropping farmer, Wensum & Yare – 51050)

“I don’t kill things for the sake of it. I keep the hedges for birds, bird boxes, and shoot magpies for the little birds.”

(LFA Grazing Livestock farmer, Conwy – 20034)

A range of other activities were mentioned by farmers as benefitting the environment but less frequently. These included:

- Grazing management activities (mentioned by 7% of farmers)
- Woodland management activities (7% of farmers)
- Tree planting/maintenance (5% of farmers)
- General compliance with agri-environment scheme requirements (5% of farmers)
- Wildflower management/pollen and nectar mixes (3% of farmers)
- No or minimum tillage (2% of farmers)
- Cropping diversity and rotation (2% of farmers)
- Protecting watercourses (2% of farmers)
- Pest/predator control (2% of farmers)
- Management for shooting (2% of farmers)

6.10 Farming activities that have an avoidable detrimental impact on the environment

As Figure 6.22 shows, the majority of farmers (68%) did not feel that any of their farming activities had an avoidable detrimental impact on the environment (18% responded yes, 13% were not sure).

There were no significant differences between farmers’ responses across case study areas.

LFA grazing livestock farmers were more likely than expected to feel that none of their farming activities had an avoidable detrimental impact. In contrast, Dairy and Cereal farmers were more likely than expected to say that yes, one or more of their farming activities had an avoidable detrimental impact (Chi-squared significant, p=0.003, but 42.9% of cells have an expected count less than 5). The main concern for Dairy farmers appears to be soil erosion/run-off, and the main concern for Cereal farmers appears to be the spraying of insecticides.
There was little difference in responses to this question across farm size, although ultra large farms were less likely than expected to state ‘no’ and more likely than expected to state ‘not sure’ (Chi-squared significant, \( p=0.047 \), but 6.7% cells have an expected count less than 5).

**Figure 6.22: Respondents’ perception of whether any of their farming activities have an avoidable detrimental environmental impact**

Of those farmers who responded ‘no’ to this question, most did not elaborate any further. However, some did go on to justify their answer. 14 farmers, for instance, talked about how they actively avoided any activities that would have a detrimental impact. Avoiding run-off and pollution were regularly cited by these farmers.

“We try not to kill bees, we try not to run on ground when it’s not fit to run on. It doesn’t always work, sometimes you have to depending on the season. All I can say is we try not to be detrimental. In farming you can’t do more than try. I like to think we’re environmentally aware, put it that way. I’m not saying we always get it right but we do try.”

(Cereal farmer, Upper Welland – 32006)

“We try to avoid things like run-off. There’s always room for improvement, but I can’t think of anything right now where I thought oh we shouldn’t have done that. And if you do do something you learn from it and don’t do it again do you. We work with the weather.”

(LFA Grazing Livestock farmer, Taw – 10016)

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6 In this case, the Fisher’s exact test was \( p=0.053 \), which is a slight change in an already marginal result.
10 farmers felt that their generally extensive, low-input farming system meant that their activities were not harmful for the environment.

“I don’t think we do, because we don’t use sprayers, we don’t use fertilisers, we don’t have slurry issues, so all the manure goes back to an arable farm where we swap for straw.”

(Lowland Grazing Livestock farmer, Avon – 71052)

“No, because our system isn’t intensive.”

(LFA Grazing Livestock farmer, Eden – 60011)

10 farmers noted that they adhered to all regulations and/or agri-environment stipulations, thereby implying that this showed they did not undertake any environmentally damaging activities.

“No, because I’m doing what Glastir and RSPB are telling me.”

(LFA Grazing Livestock farmer, Conwy – 20032)

“We carry out all the rules and regulations, what more can we do.”

(Cereal farmer, Wensum & Yare – 52014)

Other comments included seeing avoiding environmental harm as part of good farming practice (6 farmers). A few farmers also mentioned that although they do not undertake damaging activities, they see evidence of it elsewhere.

The 18% of farmers who responded yes, they felt that one or more of their farming activities had an avoidable detrimental impact on the environment, cited a range of examples of these types of activities. However, the two most frequently cited activities concerned the spraying of insecticides (13 farmers/72%) and issues of soil damage and/or run-off (12 farmers/67%). Note that many of those farmers who answered ‘yes’ to this question nevertheless stressed that they attempt to mitigate these impacts wherever possible, or that, although they do not like it, they feel the activity is necessary for operational reasons.

“I suppose you could argue that quite a bit of it could potentially, in the fact that if you spray any chemical it’s going to, but I’ve only sprayed once in 3 years and I’ll probably have to spray one field this year.”

(Lowland Grazing Livestock farmer, Taw – 10030)
“Spraying – I would like if we didn't have to but there are lot of thistles here.”

(LFA Grazing Livestock farmer, Conwy – 20030)

“Yes, because despite what we do in terms of margins and application, here we are on a sloping part of [the area], we must be getting run-off into water courses... It does concern me.”

(Cereal farmer, Upper Welland – 31005)

“Sometimes you will get poaching with dairy cows, and it is difficult to avoid it. I suppose there's no such thing as unavoidable, but is something that we will have to look at more and more, especially with the re-seeds we've done. That sometimes would be avoidable - the poaching and soil structure. We do our best but sometimes it is not physically possible to cover everything.”

(Dairy farmer, Taw – 10035)

“Very minimal - soil erosion I suppose is the big thing, but we're very aware of it. It's incredibly minimal compared to most farms because we have this 5 year rotation, so it's not as big a problem as it would be on other farms. We don't have a lot of water erosion, that's not really a problem on chalk ground. I think we manage it quite well but you're aware that sometimes you can be doing more harm than good. Ironically it's the manure heaps that can be the problem because they tend to be out in the field so you're going out there in the winter a dumping your manure and you end up spreading soil all over the road.”

(Mixed farmer, Avon – 71095)

The spraying of insecticides was also a concern cited by 6 farmers who felt that this activity was completely unavoidable, and therefore answered ‘no’ to the question.

“The spraying is always the concern - but I can't see how it's really avoidable. We can be careful, when we spray with as far as insecticides go, bees and such like... It's something we can't really get round.”

(Cereal farmer, Upper Welland – 31028)

Four farmers also made comments about how they see insecticides and fungicides as necessary at the moment, but that these could be avoided or reduced if there were not as many regulations around the use of genetically modified crops and neo-nicotinoids.
“Well if we didn’t use any crop-protection products - and that is avoidable - I feel fairly sure that there would be an improvement in the environmental atmosphere. So I’ll take potatoes as an example, ... and, as a matter of necessity to control potato blight, [we] go through ......15, 16, 17 times with potato fungicides, otherwise there wouldn't be a crop. Professor Jonathon Jones at UEA has developed a blight-resistant cultivar of potatoes through a degree of genetic engineering. Clearly that isn't available in the commercial market. The Americans have done the same and are growing it commercially, which will reduce quite dramatically the amount of crop-protection products that have to be used in that crop. That will benefit the environment. It will not only benefit the environment from reducing the amount of fungicides that's used, it will also reduce the carbon footprint because there's far less energy used in applying them. And that's just one tiny example of where public pressure, NGO pressure, is slowing up the development and research of new aspects of crop production.”

(General Cropping farmer, Wensum & Yare – 51072)

“There is no doubt that farming activities in the modern lifestyle are going to have a detrimental effect. The question is, is it avoidable? And that's in the eye of the beholder isn’t it really... I mean one of the big ones at the moment is neo-nics, they've been banned so we use something else - a lot of people would say that that's going to result in more bees being killed, because the thing that's being sprayed is going to cause more death, and is sprayed more often. Is that avoidable? Well yeah it would have been if they hadn't passed a law that may not have been very clever.”

(General Cropping farmer, Wensum & Yare – 51084)

“Yes, insecticides. ...We try to minimise the use of insecticides, and we're disappointed that the neonicotinoid sprays have been withdrawn as we thought that was a step forward.”

(Cereal farmer, Upper Welland – 320310)
7. Community and quality of life

Key findings

- The levels of contact that farmers have with both other local farmers and non-farming members of the local community appear to be relatively high on the whole, as most farmers reported having contact at least once a week (76% have contact with other farmers, and 82% with non-farmers, this often). It is possible that interviewees over-stated their levels of contact if they were embarrassed about being socially isolated, but the presence and extent of such a bias is impossible to ascertain. There were instances among those with less frequent contact where interviewees talked about not having time to socialise, not wanting to mix business with pleasure, and being relatively isolated on the farm.

- A large proportion of farmers (70%) have business-related contact with other local farmers, and almost half (40%) mentioned having some sort of social contact with their peers. The lines between business and social related contact are frequently blurred, however, with interviewees often referring to them both together. Some also explicitly mentioned the mutual learning benefits arising from mixing with other farmers.

- Farmers’ contact with non-farming members of the local community appears to be primarily in a social context, with farmers mixing with friends and neighbours in the local village and getting involved in a wide range of community activities. However, interviewees also talked about providing farming-related products and services to the local community (e.g. selling milk and providing hay bales for village fetes).

- Question 27b (how important do you feel farming is to the local community?) provided more nuanced responses regarding contact with non-farmers. Interviewees generally saw farming as very important or essential to the local community, often portraying farmers as contributors to the local economy, custodians of the countryside, producers of food, and/or as ‘the backbone’ of the local community. There was, however, also a sense that these contributions are frequently undervalued by the local community and wider public. Changes to the rural population, particularly the influx of ‘incomers’ from urban areas, were perceived to be at least partly responsible for a growing dis-connection between agriculture and the community.

- Interviewees gave a wide range of detailed and interesting responses to the question ‘what is it like to be a farmer in 2015?’ These responses revealed a broad
balance between those farmers who currently see the industry in a positive light, and those who are more pessimistic about farming and its future. Many talked about both the upsides and downsides of farming and gave pragmatic opinions about the balancing of these and the up-and-down nature of the economic health of the industry. The primary concern talked about by interviews was related to paperwork and ‘red-tape’, which are perceived as placing a disproportionate, stressful and often unnecessary burden on farmers. Economic issues were also an important concern for interviewees, with many discussing current difficulties associated with low commodity prices and market volatility. On the other hand, farmers frequently talked about the quality of life, enjoyment and job satisfaction that their occupation offers, and some were relatively optimistic about the future of the industry.

7.1 Contact with other local farmers

76% of farmers said that they typically had contact with other local farmers at least once a week (24% once a week, 52% more than once a week), and this was fairly consistent across the case study areas (no significant relationship with CSA) (see Figure 7.1).

There was no significant relationship with farm type, although General Cropping and LFA Grazing Livestock farmers appear slightly more likely to have contact at least once a week compared to the other farm types (94% and 80% of LFA Grazing Livestock and General Cropping farmers respectively had contact at least once a week, compared to 71-73% across the other farm types).

There was no significant relationship between levels of contact with other local farmers and farm size.

170 farmers (70%) mentioned having some type of farming-related business contact with other local farmers. Although many of these farmers did not elaborate further, some specified that they had contact through their provision of services to other farmers (e.g. contracting) or through their employment on other farms.

70 farmers (29%) included markets/auctions as one of the contexts in which they have contact with other farmers.

Of particular interest to SIP 2:

- 39 farmers (16%) mentioned informally working with other farmers, for instance neighbours ‘helping each other out’.

75
• 29 farmers (12%) mentioned being involved in some type of discussion group, farming club/union or taking part in training courses with other farmers. Some farmers cited both the social and benefits of being involved with these.

• 8 farmers specifically mentioned formal cooperation agreements with other local farmers. These agreements included the short-term keep of livestock and a machinery-sharing ring.

• 21 farmers (9%) specifically mentioned social learning as a benefit arising from having contact with other local farmers (either in a business and/or social context).

When asked what type of context their contact with other local farmers was in, 47% specifically mentioned some sort of social contact (note that other farmers may also have social contact but just not have mentioned this in their response). Farmers mainly talked about this context as general social contact (e.g. ongoing social contact, or bumping into neighbours), but some mentioned specific activities such as going to the local pub, playing skittles, and hunting or shooting together.

Only 4 farmers (2%) professed to not having any contact at all with other local farmers, though 55 (23%) said they had contact less than once a week. Most farmers did not elaborate on their lack-of contact, however a few cited specific reasons, such as; ‘not wanting to talk shop all the time’; a lack of cooperative spirit; a lack of time; and isolation from other farmers.
“Not very much [contact]. I don't shoot and I like to socialise with people who aren't farmers. If you only talk to people in the same industry then when things are going wrong that's all you ever talk about.”

(Mixed farmer, Avon – 72005)

“There's not a lot of cooperative mentality in this area, unless it's to one farmer's particular advantage.”

(Mixed farmer)

“You wave to your neighbour more than you speak to them ... one time of day you could stop and talk to them but you don't have time anymore.”

(Cereal farmer, Upper Welland – 32046)

“I farm with my brother, but I often don't see anyone else all day. We’re the only surviving farm in the village (there used to be 4).”

(Mixed farmer, Nafferton – 42093)

7.2 Contact with non-farming members of the local community

82% of farmers said they had contact with non-farming members of the local community at least once a week (25% once a week and 57% more than once a week).

There was little difference in this reported level of contact across case study area (Figure 7.2) or farm size.

There was also little difference across farm type, although of those farmers who had contact at least once a week, Cereal farmers were more likely than expected to have contact more than once a week, and Dairy farmers more likely than expected to have contact just once a week. Dairy farmers were also more likely than expected to have no contact at all (Chi-squared significant, p=0.018 but 65.7% cells have an expected count less than 5).

In explaining the context in which they have contact with non-farming members of the local community, 71 farmers (29%) made reference to general social contact, although some (23) made specific reference to general social contact in the local pub.

64 farmers (26%) made references to general neighbourliness or ad-hoc contact, such as just seeing people around and about. 29 farmers (12%) specifically mentioned having contact with walkers passing by/through their land.
71 farmers (29%) specifically mentioned being involved in one or more community-focused group and/or activity. For instance:

- 33 (14%) talked about being involved in general village activities such as helping out (sometimes providing farm-related props such as hay bales) with the annual village show.
- 20 (8%) reported being involved in the parish council.
- 15 (6%) mentioned local sports clubs.
- 11 (5%) had contact through the church.
- Other community groups that interviewees were involved with included singing groups, the Scouts, and the Rotary club.

Some (17) farmers’ level of contact with non-farming members of the local community was also facilitated/increased through their children, who mixed with other friends in the area and/or attended the local school.

50 farmers (20%) mentioned having some sort of business or farm-related contact with members of the non-farming community.
• 25 (10%) were either employed locally in addition to working on the farm (e.g. as a barman) or met people through their own non-agricultural business activities (e.g. livery stables).
• 11 farmers (5%) mentioned specific community engagement activities relating to the farm, such as participating in Open Farm Sunday and/or hosting other farm visits.
• 9 farmers (4%) had contact through the selling of farm produce (e.g. milk, potatoes, straw).

Only 2 farmers (less than 1%) said that they had no contact at all with non-farming members of the local community, though 25% had contact less than once a week. Most farmers did not give a particular reason for this. However, those that did cited issues such as not knowing anyone due to recent increases in the number of incomers, being too busy on the farm, and a lack of village meeting points (i.e. shop, post office).

7.3 Contact with individuals, organisations or companies to whom farm products are sold

61% of farmers have contact with the individuals, organisations or companies to whom they sell their products less than once a week, with 19% typically having contact once a week and 20% more than once a week.

There was little difference in this reported level of contact across case study area (Figure 7.3) or farm size.

Figure 7.3: Typical levels of contact with customers by CSA
However, there was some relationship between farm type and levels of contact with customers ($p = 0.013$, but 57.1% cells have an expected count less than 5) (Figure 7.4). Cereal farmers were more likely than expected to have contact more than once a week. Dairy and Mixed farmers were more likely than expected to have contact with their customers less than once a week.

**Figure 7.4: Typical levels of contact with customers by farm type**

![Bar chart showing levels of contact with customers by farm type.](image)

1 Farm Type categories have been amalgamated to maintain confidentiality. Livestock includes LFA, Lowland and Dairy farms; Arable includes general cropping and cereal farms.

Most farmers gave very brief responses to this question, generally just stating that they had contact with their buyers in a general business context, perhaps contacting them to negotiate prices or arrange sales etc.

- 86 farmers (35%) specifically mentioned that the contact was through the livestock market
- 27 (11%) mentioned an agricultural merchant or agent as one of their main points of contact
- 24 (10%) stated they have direct contact with the public or local businesses who buy their products
- 22 (9%) mentioned selling products through a cooperative or marketing group (e.g. ARLA)
- 21 (9%) referred to having contact with an abattoir

Few farmers commented further on this question, although 4 did say that they felt they did not have enough contact with those who bought their products. For instance:
“Some [contact]. But nowhere near enough. Modern agriculture has severed relations with some of our customers, which is detrimental. But grain merchants and the like are quite approachable and we speak when we need to. We get text messages with prices and stuff. But it's not as personable as it used to. But then I've got one buyer, one of our biggest customers, who I speak to several times a week, that's a good relationship, but I've got others where, we've got one particular crop - I won't say which one it is - and we've got 1 guy between 4 growers who represents us to speak to the buyer and none of the other growers have ever met him. We can just about remember his name and that's it. And I think that's very poor, but I think it's up to him to come and see us, rather than us to see him. I think it's a lack of respect really.”

(General Cropping farmer, Wensum & Yare – 51065)

7.4 Importance of farming to the local community

The majority of interviewees (83%) felt that farming is either essential (56%) or quite important (27%) to the local community. This was the case across all case study areas (Figure 7.5), although farmers in Upper Welland were less likely than expected to perceive farming as ‘essential’ and more likely than expected to perceive it as ‘quite important’ (Chi-squared significant, p=0.18, but 60% cells have an expected count less than 5).

There was no relationship between perceived importance of farming to the local community and farm size.

Figure 7.5: Perceived importance of farming to the local community by CSA

<table>
<thead>
<tr>
<th>Case study area</th>
<th>Not important at all</th>
<th>Not particularly important</th>
<th>Neither important nor unimportant</th>
<th>Quite important</th>
<th>Essential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taw</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Conway</td>
<td>11</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>17</td>
</tr>
<tr>
<td>Upper Welland</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>Nafferton</td>
<td>2</td>
<td>2</td>
<td>9</td>
<td>10</td>
<td>65</td>
</tr>
<tr>
<td>Wensum &amp; Yare</td>
<td>2</td>
<td>4</td>
<td>10</td>
<td>22</td>
<td>137</td>
</tr>
<tr>
<td>Eden</td>
<td>2</td>
<td>5</td>
<td>9</td>
<td>16</td>
<td>137</td>
</tr>
<tr>
<td>Avon</td>
<td>4</td>
<td>4</td>
<td>9</td>
<td>17</td>
<td>137</td>
</tr>
<tr>
<td>All farms</td>
<td>7</td>
<td>17</td>
<td>65</td>
<td>137</td>
<td>137</td>
</tr>
</tbody>
</table>

There was also little variance between farm types, with the exception of Mixed farmers, who were more likely than expected to feel that farming is ‘not particularly important’ to the local community. LFA Grazing Livestock farmers were more likely, and Cereal farmers less likely,
than expected to feel that farming is essential to the local community (Chi-squared significant, p=0.001, but 70% cells have an expected count less than 5).

The explanations given by interviewees for their answers had a number of common themes. Farmers tended to characterise farming as relating to economic contribution, countryside stewardship, food production, contribution to community life, and/or a sense that it is not actually that important to the local community. Interviewees were thus organised into associated categories according to the primary emphasis of their response (although note that several talked about more than one of these themes). 22 farmers (9%) were not categorised in this way due to their response not being detailed or clear enough to allow this. The 5 key themes emerging from this question are explored further below.

7.4.1 Contributors to the local economy

29% of interviewees primarily explained their perception of farming as important to the local community through reference to the industry’s economic contribution to the area. These people saw farming as key to the economic wellbeing of their community, often citing the secondary effects of agriculture on related industries and local employment. There was, however, also recognition that farming does not employ as many local people as it used to and thus may be economically less important than in the past.

Farmers in the Eden, Conwy and Taw were most likely to give this as their primary explanation (21%, 16% and 15% of farmers in these areas) and those in Upper Welland, Avon and Wensum & Yare the least (3%, 4% and 5% respectively) (Figure 7.7). This corresponds with the predominant farm types in these areas, as 56% of Dairy farmers, 51% of LFA Grazing Livestock farmers and 22% of Lowland Grazing Livestock farmers gave this as their primary explanation, compared with less than 15% of Arable farmers.

Figure 7.7. Perceptions of the primary importance of farming to the local community

<table>
<thead>
<tr>
<th>Case study area</th>
<th>% interviewees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taw</td>
<td>11%</td>
</tr>
<tr>
<td>Conwy</td>
<td>22%</td>
</tr>
<tr>
<td>Upper Welland</td>
<td>36%</td>
</tr>
<tr>
<td>Nafferton</td>
<td>50%</td>
</tr>
<tr>
<td>Wensum &amp; Yare</td>
<td>57%</td>
</tr>
<tr>
<td>Eden</td>
<td>66%</td>
</tr>
<tr>
<td>Avon</td>
<td>77%</td>
</tr>
<tr>
<td>All Farms</td>
<td>88%</td>
</tr>
</tbody>
</table>

- Producers of food
- Farming not seen as important by community
- Custodians of the countryside
- Contributors to local economy
- Backbone of community
- Unclear / no comment
There appeared to be no relationship between those giving this as their primary explanation and farm size.

“It is everything to rural communities in terms of the whole economy as there are no other industries. It’s what the countryside is made of. The money that gets generated around agriculture here sustains the whole economy in the region.”

(LFA Grazing Livestock farmer, Eden – 6011)

"Without farming life in the villages themselves would be dead. When a farmers makes some money he spends it. He spends it in the locality itself!"

(LFA Grazing Livestock farmer, Conwy – 20015)

“If we weren't here nobody would have any food and they wouldn't have any jobs - the number of people around here contracting, or employed indirectly, the number of people living off the back of farming is unbelievable. You’ve only got to go to the dairy events to see the number of what I call parasites who are living off the backs of us, and they're earning a damn-sight more than we're earning. All the estate agents and advisory companies and people who are selling stuff to farmers. Not meaning that in a rude way, but it is essential to the whole country not just the community. But especially the South West, it is agriculturally orientated and even the holiday industry. But the reason why it's more essential down here in a way is because it's all small farms, whereas up in the Midlands or wherever where there's just one farmer with 3 or 4000 acres, well he doesn’t need employees - it would be one farm instead of 10, so less employment.”

(Dairy farmer, Taw – 10021)

7.4.2 Custodians of the countryside

29% of interviewees primarily characterised farmers as custodians of the countryside. For these people, farmers are particularly important to the local community because of the work that they do in looking after the environment and keeping the way that the countryside looks today.

This characterisation was offered most frequently by those in the Upper Welland catchment (38% of whom emphasised it) and least frequently by those in Conwy (20% of whom emphasised it) (Wensum & Yare = 34%, Taw = 31%, Eden, Nafferton and Avon = 26%) (Figure 7.8).

There appeared to be no relationship between this type of characterisation of farming’s importance and farm size.
“Well, you've only got to sit here and have a look around... If somebody doesn't look after it, it won't look like that.”

(Cereal farmer, Upper Welland – 32026)

“Particularly in this area, we're providing the backdrop to the landscape, to the environment, that invites tourists to enjoy the Broads and the North Norfolk coast, so we're maintaining the environment that exists within Norfolk, which makes Norfolk what it is. So that's part of it. And the importance that food production plays in the food production of East Anglia. It's a combination of the two really, it's maintaining the environment and producing food - which are sustainable and go hand-in-hand.”

(General Cropping farmer, Wensum & Yare – 51072)

“If farmers didn't farm the land it would just be a barren wilderness. Which they saw in the 30s when in the great depression a lot of it wasn't farmed and it just went to rack and ruin and gorse and bracken.”

(Mixed farmer, Avon – 72004)

### 7.4.3 Producers of food

11% of interviewees focused on farmers’ role in the production of food in answering this question (though others did also mention this).

This role was emphasised most frequently by farmers in the Wensum & Yare and Upper Welland catchments (29% and 18% of farmers in these areas respectively), and least by those in Eden, Conwy and Nafferton (0%, 3% and 6%) (Taw = 9%, Avon = 14%) (Figure 7.8). Correspondingly, General Cropping farmers were significantly likely to emphasise this factor over others, with 44% of this farm type focusing on it in their response (Cereals = 16%; and Livestock farms less than 14%.

There appeared to be no relationship between this type of characterisation and farm size.

“Well, if people wish to survive, they've got to have food, so I should say it's pretty essential.”

(Lowland Grazing Livestock farmer, Upper Welland – 32080)

“Because they've all got a stomach. That's what I always tell people if they start going on about what we're doing, I say hang on a minute, what's the most important thing that you need? I think it's very essential.”

(General Cropping farmer, Wensum & Yare – 52069)
“It’s basic food production, it goes back to Maslow’s hierarchy of needs doesn’t it, it’s absolutely essential. And also, ought we be buying food from other countries? Should we not be producing our own? I mean I know we’ve never produced all our own food in this country, even in the last war, but it strikes me that we’ve gone through some funny times - I mean set-aside had to be wrong didn’t it. Leaving ground and buying in food from elsewhere. It’s theft of water as well - if you buy beans from Kenya. We’ve lost sight of where we going and farming needs to be re-trenched into the, so yeah, essential. Essential to everything.”

(Lowland Grazing Livestock farmer, Taw – 10020)

There was, however, a sense among many of the interviewees that the role of farmers as producers of food is not one that is recognised by the local community or government. Several farmers also commented on how there is a lack of understanding among the wider public about where food comes from.

“They don’t realise how important food production is and how our own food sustainability is as an island, it could be wiped out nearly over night and then they would really feel the pinch.”

(Lowland Grazing Livestock farmer, Wensum – 51100)

“As long as food comes from somewhere it doesn’t matter where it comes from as far as a lot of people are concerned. But it’s got to come from somewhere and we happen to be in an area where there is land that can be used for it, so I think it is important. As time goes on and we’re shorter and shorter of food it is important. I don’t think the locality thinks that, but it is important.”

(Cereal farmer, Avon – 72010)

“Food is the most important industry in world. If you’re starving, everything else is worthless. But the government and the general population don’t care.”

(Lowland Grazing Livestock farmer, Nafferton – 42089)

7.4.4 The ‘backbone’ of the community

Another common theme that interviewees talked about was the portrayal of farmers as being central to community life in the rural areas, or in other words, and this was the primary focus in 9% of farmer responses. The descriptor ‘backbone of the community’, as used by a couple of interviewees, would seem appropriate here.

The emphasis on the role of farmers in community life was most frequent among Conwy farmers, 20% of whom gave it as their primary explanation for the importance of farming (compared to 3-9% within the other case study areas).
Overall, there was little difference in the occurrence of this type of response between farm types, except that 0% of General Cropping farmers focussed on this aspect of farming (6-12% within the other farm types).

There appeared to be no relationship between this type of characterisation and farm size.

“We think that farming is essential, we think it provides the backbone and a framework. We've got a little tiny village and people come and people go, but when you want to get anything done, when there's money to be raised for the church, the community - we're involved with all of it - it's always, new people come in and have got new ideas, and it's great because it provides enthusiasm, but when it becomes boring and it's old hat, it's the farming families that go on doing it and do all the boring bits.”

(LFA Grazing Livestock farmer, Taw – 10016)

“The local community IS farmers in this area.”

(Cereal farmer, Nafferton – 42018)

“I would hope it's essential, I don't know if other people would agree with that, but in this locality I think it is essential. It's the way of life, it's the way it's always been. I suppose they could live here without farming quite happily, but I think it's important - here in this area, where we've been farming ... [a long time]..., I think it gives a basis for the community, otherwise you start to lose the identity with people coming in. It's grassroots with some of the characters that are involved.”

(Cereal farmer, Avon – 72012)

The prevalence of this type of response in Conwy is partly explained by the way in which several farmers here talked about how farming is closely connected to the Welsh language and culture, and is important for ensuring its continued survival.

“It's part of the tweed of the local community and is interwoven into the valley community. It's culturally important.”

('Other’ farm type, Conwy – 20010)

“We're quite lucky, all the farmers around here are Welsh and it helps the community and keeps everybody together. Farming helps the language, you go to the markets on Tuesday and you know except the odd one it's mostly Welsh speaking. You know if you had a lot of English farmers coming in you'd lose it.”

(LFA Grazing Livestock farmer, Conwy – 20026)
7.4.5 Farming as not particularly important to local community

13% of detailed responses to question 27b were more negative in that they portrayed a sense that farming is not particularly important to the local community (as expected given the 7% who said farming was not particularly important, and the 3% who said it was not at all important, in response to question 27a).

However, this is a slightly problematic category, as it contains a mix of opinions that are difficult to unpick in terms of whether the interviewees see farming as either i) unimportant to the local community in terms of not having any direct benefits for them, or ii) important, but not recognised as such by the local community. The question may have been variably interpreted in this respect. Generally, though, the responses in this category revealed a sense that local communities are increasingly disconnected from agriculture (particularly those who are close to urban centres) and do not necessarily understand it, as few people are directly employed in the industry and simply see the countryside as ‘somewhere nice to live’.

This type of response was most frequent in the Upper Welland, Nafferton and Avon areas, where 24% and 23% and 23% respectively of farmers were grouped under this category (Wensum & Yare = 11%, Conwy = 9%, Taw = 3%, Eden = 0%), and among Mixed and Cereal farmers, of whom 29% and 23% respectively expressed this sentiment (Lowland Grazing Livestock = 14%, LFA Grazing Livestock = 7%, Dairy and General Cropping = 0%).

There appeared to be no relationship between this type of characterisation and farm size.

“It’s difficult to say around here, because it’s just farming around the village but I wouldn’t say that it’s important because in the village everyone goes out to the town to work, it’s just somewhere nice to live.”

(LFA Grazing Livestock farmer, Taw – 10023)

“Well around here, we’re close to the city, so it’s not important at all... The city is the main thing. If you live in a rural county it’s probably different, but where we’re farming it’s neither here nor there.”

(Cereal farmer, Upper Welland – 31062)

“We’re on the urban fringe, so the majority of population within 5 miles find farming a complete irrelevance. A small minority are very aware.”

(Mixed farmer, Nafferton – 41097)

Note that this farm is located near to Peterborough, hence the comment about the city.
“I think it’s less than it was, because there isn’t the people involved, there isn’t the farming community. Well here. I think it should be important, but I don’t think it is, because the numbers of people involved is so much less. I think it should be because I think it’s very important to take an interest, not just driving and looking over the hedges criticising. They need more education.”

(Cereal farmer, Wensum & Yare – 52037)

7.5 Changes in the level of contact with non-farming members of the local community over the last 5 years

Most farmers (66%) reported no change in their level of contact with non-farmers over the last 5 years. However, 21% said that it had increased, and 11% that it had decreased. There was little difference between the frequency of these reports across the case study areas (Figure 7.8).

There was no relationship between changes in levels of contact with non-farmers and case study area, farm type or farm size.

Figure 7.8: Change in levels of contact with non-farmers over the last five years

The factors influencing these changes in the level of contact farmers have with non-farming members of the local community (question 28b: why is it that your level of contact with non-farmers has changed?) are briefly discussed below.
7.5.1 A changing rural population

21 farmers (9%) made reference to changes in the local population in their explanations for why their levels of contact with non-farmers have changed over the last 5 years.

13 farmers felt that their levels of contact with non-farmers had increased as a result of a general increase to the local population and/or the number of urban-rural migrants or ‘incomers’ in the area.

“There’s more houses, so more interest in seeing the cows, so there’s more contact through local interest.”

(Lowland Grazing Livestock farmer, Upper Welland – 31090)

This increased contact was not necessarily spoken about in a positive way, however, with some farmers commenting on the friction caused by an increased population and lack of understanding:

“Where we are here there’s just more and more people moving in, and people don’t understand. This is the thing. The population and housing is getting big, wherever you go there’s new housing estates. So you’ve got more contact with people on the roads, and more older people. So that’s getting more difficult.”

(General Cropping farmer, Wensum & Yare – 51060)

7 farmers felt than an increase in urban-rural migrants (‘incomers’) was responsible for a decrease in their levels of contact with non-farmers. These farmers felt that these people are generally less interested in farming than the older ‘locals’ and do not socialise with them as much. One person also commented on how counter-urbanisation has led to an increase in retired, ‘upmarket’ people in the area.

“Decreased a bit. As you get new people coming in, they’re not the same as the old people. When the old people die you get the new ones coming in and you don’t see them like you did the old ones.”

(Lowland Grazing Livestock farmer, Taw – 10025)

7.5.2 Personal circumstances

21 farmers (9%) cited personal circumstances as a reason for the change in their level of contact with non-farmers.

Reasons related to personal circumstances behind an increase in the level of contact included;
• having more contact through their children now being at the local school (6 farmers)
• having more time due to retirement/semi-retirement (3 farmers)
• a consequence of moving farms (3 farmers)

Reasons related to personal circumstances behind a decrease in the level of contact included;
• their children no longer being at the local school (2 farmers)
• a lack of time due to having children (2 farmers)
• a consequence of moving farms (2 farmers)

7.5.3 Business-related factors
21 farmers (9%) cited business or employment related factors as a reason for the change in their level of contact with non-farmers.

Business-related reasons behind an increase in the level of contact included;
• An increase in their off-farm employment or business expansion/diversification (10 farmers)
• Business-related changes which meant that they now had more time for contact with non-farmers (3 farmers)

Business-related reasons behind a decrease in the level of contact included:
• a lack of time having become busier on the farm (5 farmers)
• business/finance related pressures (2 farmers)

7.6 What is it like to be a farmer in 2015?
This question elicited a wide range of responses from farmers, but with several themes commonly recurring across all farm types and case study areas. In terms of their general sentiment towards farming at the present time, a crude allocation of farmer responses into broad categories revealed that 37% of all farmers were either ‘very or generally positive’, 37% were either ‘very or generally negative’, and 25% were ‘relatively neutral’, with the remaining 1% not expressing enough of an opinion to allow categorisation. The ‘relatively neutral’ farmers tended to express a mixture of positive and negative opinions, suggesting that they see the downsides of farming as being more or less balanced by the upsides.

As Figure 7.9 shows, there was a relatively even spread between those farmers who generally saw the industry in a positive light and those with more negative opinions, and this was the case in most of the case study areas. The main exception to this was that farmers in the Conwy catchment were markedly more negative than positive, with 20 out of the 35 farmers
interviewed expressing opinions that were either wholly or predominantly negative in outlook. Conversely, farmers in the Wensum & Yare, Avon and Taw catchments appeared slightly more positive than negative, though this was a more marginal difference. The high occurrence of criticism regarding legislation and paperwork in Conwy may partly account for the negativity expressed in this area. However, it does not appear to be strongly correlated with the predominant farm type in Conwy (LFA Grazing Livestock), as across the sample as a whole the number of LFA Grazing Livestock farmers expressing negative views were broadly similar to those with positive views. There may be a connection between farm type and positivity in the Wensum & Yare, as General Cropping farmers (the predominant farm type in Wensum & Yare) were notably more positive than negative across the board, but such a connection does not appear to be valid for farmers in the Avon or Taw.

There was no clear relationship between general positivity/negativity and farm size. Large and ultra large farms were slightly more negative than the other farm sizes (44% of large and 48% of ultra large farms were either generally or very negative, compared to 31% of small and 27% of medium farms), but very large farms did not fit into this pattern (32% of whom were either generally or very negative). Interviewees from small and medium farms were the most balanced in their responses, often weighing the positives against the negatives, with a relatively equal number giving positive, neutral and negative responses.

**Figure 7.9: General positivity/negativity of responses to the question ‘what it is like to be a farmer in 2015?’**

<table>
<thead>
<tr>
<th>Case study area</th>
<th>Very or generally negative</th>
<th>Relatively neutral</th>
<th>Very or generally positive</th>
<th>Uncategorised</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taw</td>
<td>7</td>
<td>13</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>Conwy</td>
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<td>12</td>
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<tr>
<td>Upper Welland</td>
<td>5</td>
<td>11</td>
<td>11</td>
<td>11</td>
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<tr>
<td>Nafferton</td>
<td>12</td>
<td>13</td>
<td>13</td>
<td>2</td>
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<tr>
<td>Wensum &amp; Yare</td>
<td>12</td>
<td>11</td>
<td>11</td>
<td>11</td>
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<tr>
<td>Eden</td>
<td>14</td>
<td>8</td>
<td>11</td>
<td>8</td>
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<tr>
<td>Avon</td>
<td>11</td>
<td>11</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>All farms</td>
<td>89</td>
<td>66</td>
<td>89</td>
<td>4</td>
</tr>
</tbody>
</table>

7.6.1 The upsides of farming
Positive comments about farming in 2015 generally related to the *enjoyment* that farmers gleaned from their occupation and the quality of life it afforded them. Part of this enjoyment
relates to the pleasures of working outside in the countryside and being able to witness or help wildlife and the natural environment.

Instances of farmers expressing enjoyment from their work occurred relatively evenly across all the case study areas and farm types, although interestingly livestock and Mixed farmers were notably more likely to describe farming as ‘a way of life’ than arable farmers (40% of these comments were from livestock/dairy farmers, 40% from Mixed farmers, and 19% from arable farmers).

“It’s great. I thoroughly enjoy it - it’s hard work, it’s stressful, there’s no money, but it’s a way of life. Mainly it's the way of life, that's why we do it. To live somewhere like this.”

(LFA Grazing Livestock farmer, Taw - 10023)

“I thoroughly enjoy it, I'm incredibly privileged to own the land that I own and go and walk over the land, and I love what I'm doing. I love the idea of organic, I love the idea of the HLS scheme and what it's able to provide for wildlife, so what I'm doing I love. I wouldn't do it any other way on this land. I can see the wildflowers and the invertebrates getting better every year, and that's a fact.”

(Lowland Grazing Livestock farmer, Avon - 71075)

Many farmers considered themselves fortunate to be able to farm and to live the way that they do - often contrasting farming to other occupations such as ‘office jobs’ - and 17 farmers explicitly stated that they ‘wouldn’t want to do anything else’.

“I wouldn’t do anything else. I wouldn't want to do anything else. I'm very lucky. I get out of bed in the morning and I don't have too many people telling me what to do and it doesn't get any better really. Especially this time of the year, it's a bit serious in November when it's dark. But we're very lucky, we do most things we want to do, it's a great place to bring kids up, who enjoy it. There's nothing better really is there.”

(General Cropping farmer, Wensum & Yare - 51080)

Several farmers portrayed a pride in what they do and a common theme linked to this pride was the satisfaction that participants derived from farming, with 22 farmers explicitly stating that they found it ‘satisfying’ or ‘rewarding’:

“Oh I love it. I might be 70 but I still love it. I do most of the combining still and to see the yield metre on a combine going up to a level which you think is very, very good is, well it sends shivers down my neck. That might sound odd, but if you've done right, the weather's been right for you, you've got a good crop, that's something to be satisfied with. I find that very satisfactory. And that's farming isn't it, that's farming.”
Participants also valued the independence that farming enables:

“Yeah it’s pretty good really I suppose... If you enjoy working for yourself, and independent, like I am, you couldn’t have anything better really.”

(Cereal farmer, Upper Welland - 31062)

Some farmers were optimistic about the future, making reference to both technological advances within the farming industry and potential market opportunities arising from an increased demand for food:

“It’s quite exciting ... I think it’s more exciting if you’re younger because there’s more things coming up. Things like technology, and understanding genetics and realising that you don’t need to genetically modify something, you can do it by breeding - whether it’s a plant or an animal. So there’s huge potential.”

(LFA Grazing Livestock farmer, Taw - 10017)

“I think it’s quite exciting - exciting future... because more and more food’s going to be required, hopefully prices will pick up, more technology’s being involved.”

(General Cropping farmer, Wensum & Yare - 52080)

Some farmers talked about how they farm partly because it is something they have always done, or because they are carrying on a family tradition. This was not usually conveyed with a sense of obligation but, rather, with a sense of pride in what they do, or simply as something that they had always accepted as part of their life.

“I’m definitely proud to be a farmer, I’m proud to be third generation here and to be carrying that on, the boys will be fourth and that means a lot to me.”

(Cereal farmer, Upper Welland - 32040)

“It’s the only thing I know so I can’t say what it’s like, I don’t know anything other than farming.”

(LFA Grazing Livestock farmer, Taw – 10026)

Farming was thus associated with personal and familial memory and experience and was presented as central to the individual’s identity, with 4 farmers explaining that they ‘don’t know anything different’ and another 3 explicitly making reference to farming being ‘in the
blood’. This was sometimes used by participants to explain why they continued farming in spite of the challenges it poses.

“So it’s challenging, but I like a challenge and it’s a family farm for me. It’s all in the blood and we’ll find a way of doing it.”

(Cereal farmer, Wensum & Yare – 52009)

7.6.2 The downsides of farming

Perhaps the most common initial reaction to the question ‘what is it like to be a farmer in 2015’ was either ‘difficult’ (55 references), ‘hard work’ (45 references), or ‘challenging’ (25 references). A range of reasons were given for such descriptions, including the physical aspects of farming such as the burden of manual labour and working outside in all weathers. However, for the most part, the experience of difficulty was reported as relating to the business and economic pressures of working in the farming industry. In particular, the demands of paperwork and legislative requirements, along with economic concerns in the face of current low commodity prices, uncertainty and market volatility, were cited as particularly challenging. Participants frequently cited these factors as sources of significant stress and frustration to farmers and some made explicit connections between this and instances of anxiety, depression and suicide among their peers.

Legislation and paperwork was, overwhelmingly, the most common complaint about farming made by participants, with 103 out of the 244 interviewed referring to it (entirely unprompted) in their description of what it is like to be a farmer in 2015. Dissatisfaction with this element of farming was particularly high in Conwy and Eden where 74% and 60% respectively of farmers raised it as an issue (compared to 26-46% in the other areas). This may be partly linked to the predominant farm types in these areas, as across the whole sample criticism regarding legislation and bureaucracy appeared to be slightly greater among livestock and Mixed farmers (raised by 56% of LFA Grazing Livestock, 39% of Lowland Grazing Livestock, 50% of Dairy, and 71% of Mixed farmers) than Arable farmers (less than 26%).

Although several farmers explicitly acknowledged the need for some regulation, the majority felt that farming is over-regulated and unnecessarily demanding in terms of paperwork.

“But the problem then is with the regulation around the business - that makes things life very difficult. Changes on everything, like the basic payment scheme, changes on registration, websites falling over, changes in policy - 3 crop rule, all this sort of nonsense. Doesn’t affect me the 3 crop rule, … … I don’t care, but what a load of crap. Stuff just comes left-field. We can’t adopt new technologies - GM and other things - because of regulation. We have planning restraints on what we can do with the land, we have HLS and ELS and stuff and uncertainty about the future of those - are we going to be in or out, how do I plan long term? Dubious interpretation of agreements by Natural England, inconsistencies from Natural England, RPA being inefficient and punitive. So it’s difficult. It’s interfered with too much unnecessarily. I mean this farm is very simple really, it’s a very simple business. And it
needs to be regulated of course but the amount of regulation we have, what's it achieving at the end of the day?”

(Cereal farmer, Wensum & Yare – 52009)

Participants frequently gave their own examples of ‘pointless’ regulations and/or felt that many requirements are simply a ‘box-ticking’ that relate to common-sense practices and are, therefore, a waste of time.

“The 6 day selling restriction is over cautious and especially sheep identification is a bloody disgrace! You've got to have them tagged and god knows what. ...[in abattoirs]... the first thing they chop off is the head - tags gone! Traceability is not there because the tag has been removed - they should leave the bloody head on so that it arrives in the butcher shop.”

(Lowland Grazing Livestock farmer, Conwy – 20012)

“It's all a tick boxing exercise which nobody reads but if you can present somebody with tick the box then you're flavour of the month. To do that isn't difficult but it's a nuisance.”

(Lowland Grazing Livestock farmer, Eden – 60007)

Legislation and paperwork was often reported as detracting from the overall enjoyment of farming – particularly in comparison to past decades – and perceived as having ‘taken over from farming’ in that it has fundamentally altered the occupation from one requiring practical farming skills to one requiring business and administrative skills.

“Stressful. When I started farming 35 years ago it was all about producing something. Now it's all about ticking the boxes and making sure the paperwork's right. As for the welfare of the stock, it's important to me, but as long as you've got all the paperwork right that appears to be all that anyone else is interested in...And it takes the fun out of the job, and if there's no fun in the job then I kind of wonder what the hell I'm doing really.”

(Lowland Grazing Livestock farmer, Taw – 10003)

Many farmers were generally critical of the regulatory authorities. Specific complaints included the perceived inefficiency of the Rural Payments Agency, particularly in light of difficulties regarding BPS payments in 2015, and several farmers (particularly in Conwy) felt that there is generally a lack of understanding about farming among policymakers and civil servants and that farmers themselves are not listened to.

“The people working for the government, they have an attitude problem. The last person they want to believe and listen to is the farmer. Especially with this habitat thing, they think that all farmers want to destroy habitats and that's not the case at all but that's the mentality that they have got; don't listen to a farmers, he's there to ruin it.”

(LFA Grazing Livestock farmer, Conwy – 20032)
Finally, there was a recurring sense that farmers are over-penalised when they inadvertently make a mistake and that they are generally assumed to be ‘guilty until proven innocent’ by the authorities.

“It’s over policed and controlled by the Welsh Assembly Government through forms and visits. They’ll be checking SFPs and double checking them, they could turn up and measure a field, and God knows what. They’re over staffed if you like and have nothing better to do.”

(Lowland Grazing Livestock farmer, Conwy – 20012)

“There’s constant pressure due to Defra and RPA forms and Natural England. It’s not so much the quantity, but you can’t afford to make a mistake. If you make a small mistake on a form there is nothing you can do, you’re very heavily penalised - disproportionately. The fault is always on the farmer’s side and never the other side.”

(LFA Grazing Livestock farmer, Nafferton - 41071)

This threat of prosecution – and perhaps a feeling of persecution – was cited as a significant source of stress and anxiety (specifically noted by 7 interviewees).

“That does create a lot of stress, and I know one person who did kill himself because he couldn’t handle the stress. He shot himself because they rang him up and said we’re doing an inspection, they gave him 24 hours, and he did shoot himself. So we’re put under a lot of stress from civil servants. It’s not as enjoyable as it used to be.”

(Cereal farmer, Wensum & Yare – 52039)

Perhaps unsurprisingly, a very common theme was the financial difficulties that farmers face, particularly at the current time (explicitly mentioned by 76 interviewees). There was some variance across the case studies in the frequency of financial difficulties being reported unprompted by interviewees: 60% of Nafferton farmers raised it as an issue, compared to only 20% of Wensum & Yare farmers (Taw = 34%; Conwy = 34%; Upper Welland = 24%; Eden = 23%; Avon = 23%). In terms of farm type, financial difficulties were reported most among LFA Grazing Livestock (44%), Mixed (41%) and Dairy (33%) farmers (compared to 19% of Lowland Grazing Livestock, and 25% of Arable farmers). Economic pressure was given as the main reason behind the most negative of responses, but was also a concern even for many interviewees who were generally more positive about being a farmer.

“Crap, pretty crap, you wonder what you do it for ... we came into it really enthusiastic, and we think what have we got from it, a big overdraft.”

(Dairy farmer, Taw - 10005)
“Enjoyable but with testing times ahead - I feel like I have to become more efficient.”

(LFA livestock farmer, 36, Conwy – 20031)

“For me it's a lifestyle choice. But it is madness to be in farming really, when you actually analyse the costs and everything, I'd probably be much better off getting a job somewhere else. But it makes up for it in other ways, being out in the countryside. It's a lovely way of life, but if you looked at it hard-nosed financially you'd say you should give up now probably.”

(Mixed farmer, Avon - 71095)

“It’s stressful and unpredictable because of market prices, but I wouldn't change the lifestyle for anything. But you need to always be thinking one step ahead, you can’t stand still.”

(Cereal farmer, Nafferton – 42018)

Many farmers simply referred to the general financial pressures and low (or negative) profit margins they experience, but low commodity prices, rising input prices, market volatility (and subsequent difficulties for business planning) and uncertainties over subsidies were frequently noted as specific sources of financial pressure. Nafferton and Conwy farmers appeared particularly concerned about uncertainties relating to market volatility and subsidy payments, with 29% and 26% respectively of farmers in these areas raising it as an issue (Taw = 0%; Upper Welland = 9%; Wensum & Yare = 14%; Eden = 3%; Avon = 20%).

“I would say, across the board, it's a struggle at the moment because the prices are so low… Most of the stuff that you sell, grain for instance is 75% what it was… So, there’s not a lot of money left to play with … And when farmers are making plenty of money, they spend it, so it's not just farming that suffers but it's the land rover dealers and all the rest of it.”

(Cereal farmer, Upper Welland – 31054)

“2015 for a farmer looks daunting. The pound is getting stronger against the Euro, commodity prices are crashing. I think we’re coming down of the wave, we’ve had a few good years, farming has, no doubt, and now we’re coming back down on the other side of the wave really. You’ve got BPS and the uncertainty of that, you’ve got poor commodity prices so we’re just about on the price of production, next year it looks potentially worse. We’ve got some investments in things to finish off things that we’ve started, but we’re definitely going to have to cut back on our investments for this coming year because there isn’t the money to do it and there isn’t the confidence to do it.”

(General Cropping farmer, Wensum & Yare - 51065)

“If you asked me two years ago I’d have said quite good but now it seems to be getting more difficult; you don’t know what you’re going to get for your stock from day to day and it’s
more uncertain now from what it’s been for a few years. I don't know how many lambs we've sold, I take a guess and say somewhere around 400 lambs and I'd say that they're down £20 a head from last year. And it doesn't matter who you talk to it whether it's milking, or beef or grain, everything is down.”

(LFA Grazing Livestock farmer, Conwy - 20017)

“It is like looking into a crystal ball and not seeing a solution as to how come out of it. Because of these prices. It is not being able to see the way forward to sustain the business. The planning is what we need. We need some sort of guidance with prices, we don't need this roller-coaster of prices and farm payments, so as we know how to budget ahead, how to expand or consolidate your business. Very unpredictable.”

(Lowland Grazing Livestock farmer, Avon – 72002)

These financial pressures were generally perceived to be greater than in the past, marking a change in the farming industry and making it particularly difficult for younger farmers to get established.

“It’s much, much more difficult than it was 40 years ago when we started. We had ambition, but we could do it. Even though we were only making 3-400 pounds a month we could go out and buy another cow, we could do our paperwork and you could see that that business would go forward. You can't do that today, there's a huge amount of borrowed money - we didn't, banks didn't loan so we had to do it that way. And it was dammed hard work but we could do it, you could always see the light at the end of the tunnel. Interest rates were 19%, but you could still make a living, and now interest rates are 3 or 4% and you can't make a living. Young people are really struggling.”

(Dairy farmer, Taw – 10021)

“There’s very little money it, I’m always tired, government legislation is expensive - sheep tagging and TB testing for instance. And prices of food stuffs are just too low. Young people in particular just can't afford to stay on farms.”

(Lowland Grazing Livestock farmer, Eden - 61015)

Related to the financial issues discussed above, farmers talked about feeling pressured to constantly expand or intensify their business. These changes are perceived to be having negative effect on the viability of small businesses and the traditional farming way of life.

“The financial pressures are quite immense at the moment, and it's getting worse because you always try to be become, to be better you always think you have to become bigger but that's not always the best thing to do, which creates a lot of pressure.”

(Dairy farmer, Taw – 10018)

“There is an intensification of what has been happening over last 40 years - instead of 40
farms there are only 2 left locally. Because now you need 1000 acres to justify a combine, so medium-size farms use contractors a lot. And you have to question whether that's for the benefit of the countryside. Livestock units getting bigger too - factory units are unpopular, but it’s what everyone’s being driven to.”

(Mixed farmer, Nafferton – 41097)

“The problem with farming today is that they’ve got so big that there isn’t going to be many small independent ones left. That’s my opinion. The equipment has got so big, and if they haven’t got x amount of acres to do - they need 2000 acres or something like that. For instance, I know the next door farm’s been sold and all the arable land is farmed by a contractor.... That’s the worrying part about how I see the farming going, that individual farmers are going to go and we'll all just be run by big contractors.”

(General Cropping farmer, Wensum & Yare – 51053)

“For the smaller farmer I’m very concerned about, I just bigger and bigger agricultural enterprises, well it's the economies of scale - they've got to make money where it is. The milk price is frightening for anyone who’s got dairies. And for the smaller sort of what I call lifestyle farmer I see as being under threat.”

(Cereal farmer, Avon – 71001)

These issues are seen as being exacerbated by very high land values.

“You can’t buy a piece of land at the moment and profitably farm it, there's absolutely no way. Land around here is £10,000 -15,000 an acre, so if you go and buy a farm for £5 million quid you wouldn’t even pay the interest back. It’s just not sustainable. I don’t see that the future's particularly rosy. It’s like gambling half the time, I may as well go and put my money on a horse. There’s no rhyme or reason to it, the prices are so difficult to predict. It's stressful and we don’t need it financially, if you were reliant on it for your sole income, especially if you borrowed money to buy the farm - we’re lucky that we own the land - you’d just lie awake every night worrying. It’s not surprising that there's a high suicide rate in agriculture.”

(General Cropping farmer, Wensum & Yare – 52076)

“The worst thing about it is that you could flog the land for 15,000 an acre, and live off that very comfortably, but somebody else would have to buy it and farm it - I don’t really want to do that, that's not my intention, but it's a shame really that you can't make even - this year we've made under 1% return on capital – what’s the point really? But then you've got years when you make, well I suppose only 2%. But then the trouble is the land's so valuable. The value land went from £6,000 to £15,000 in 3 years - it's not farmers buying it, it's people who want a bit of countryside.”

(Cereal farmer, Avon - 72010)
The move towards larger, more dispersed farms and the reduction in labour as a result of technology is also perceived to be **increasing social isolation** for farmers.

“You’re having to do more to stay in the same place, and you’re going to have to be better at what you do to stay in the same place. And the fact that you have to be better means that everyone else has got to be better, so that raises the bar and gradually people are dropping off the end and their little holding is being amalgamated. And we’re getting to the point now where it’s starting to impact socially, because there’s less farmers. People are farming greater areas, people are farming remotely, greater distances between farms. It’s a lot more dispersed.”

(LFA Grazing Livestock farmer, Taw - 10022)

“There’s a lot less labour on farms than there used to be... one nearby farm is 1300 acres but it has huge machinery and only 2 workers. And that’s replicated throughout country. So it can be very lonely at times.”

(LFA Grazing Livestock farmer, Nafferton – 42019)
8. Cooperation with others

Key findings

- Almost all farmers are currently involved in at least one cooperative activity. This headline figure challenges the stereotypical image of the independent and uncooperative British farmer. This is an image that was endorsed by some respondents but it is a belief may not reflect reality.

- The most common cooperative activities that are characterised as the most important to farmers are: buying group membership, producer group membership and sharing labour and or machinery. Trade union involvement is common, but does not feature highly as a 'most important' activity.

- Farmers in Wensum and Yare, Cereal farmers and Very large and ultra large farmers appear to be involved in cooperative activities more often than would be expected across a variety of activity types. There is a significant association between farm type and farm size and between CSA and farm type and the effect of this association is perhaps being shown here.

- Farmers cooperate for financial reasons and gain economic benefits from cooperative activities. Financial aspects range from control of input costs, capital costs and fixed costs to increase of income, output prices and profit. Around half of all farmers mentioned a financial factor as both a reason for and as a benefit of cooperating.

- Farmers cooperate with each other to gain access to labour and machinery and overall 39% share labour and 44% share machinery. Sharing labour allows farmers to manage the capacity of the workforce on their farm, it allows them to temporarily increase their workforce, ensure availability at critical times, get jobs done more quickly and in a timely manner and provide the flexibility to react to unexpected demands.

- Sharing machinery allows farmers to take advantage of economies of scale which increases the utilisation of the machinery, reduces duplication of machines in the area, provides access to a wider range of machinery and specialist equipment and a bigger and better piece of machinery may be accessible than would be affordable individually.
Knowledge exchange was identified by only 13% of farmers as a motivation for cooperation, but nearly twice as many raised this aspect as a benefit of cooperation i.e. a feature of cooperation that emerges once the activity is underway.

Informal cooperation, whereby farmers offer mutual help and support and where no money changes hands, was mentioned by over 10% of farmers as both a reason for cooperating and as a benefit of it. A related notion of neighbourliness and maintaining a sense of community through cooperation was also raised.

Environmental reasons for cooperating and the benefits to the environment of cooperating were not prominent themes. Only 5% of farmers indicated that the environment was a reason for cooperating.

Two aspects of cooperation which were only mentioned by a few farmers were: the idea of strength in numbers to influence decision-makers or to increase their bargaining power in commercial agreements; and that cooperating could improve the quality of the end product in a way that would not be possible individually.

Economic factors were not raised very often as enablers of cooperation, but organisational and governance issues were mentioned by 21% of farmers.

Social enablers were mentioned most often and of these the most important was trust which was mentioned by 33% of farmers.

The most commonly cited difficulty with cooperation was the lack of timely access to labour and machinery and problems with damage to machinery. Incompatibility with and conflict between cooperating partners was the most commonly raised social difficulty.

The survey explored with respondents the nature and extent of their cooperation with others. Only 6 farmers (2.5%) out of the total number of farmers (244) were found to be not currently involved in any co-operative activities. Therefore, 238 (97.5%) farmers were involved in at least one co-operative activity. The majority of this section of the report is concerned with this group of farmers and is referred to as ‘all farmers’. The small percentage of surveyed farmers who are not currently involved in any cooperative activities are discussed at the very end of this section of the report.
8.1 Co-operative activities on surveyed farms

The stacked bar chart in Figure 8.1 shows co-operative activity for all farmers. The bars show the percentage of all farmers currently co-operating, previously co-operating, willing or unwilling to consider co-operating in that activity or not deeming that activity to be a co-operative activity. The co-operative activities in which more than 30% of farmers reported being currently involved were: involvement in trade union (71%), sharing machinery and labour (44% and 39% respectively), discussion group (37%), involvement in buying groups and producer organisations (both 36%) and short term keep of livestock for or by others (34%). Over 10% of farmers had previously been involved with buying groups and discussion groups, but are now no longer involved. No other co-operative activity had had more than 10% of farmers who had been previously involved in them.

Figure 8.1: Involvement in co-operative activities

The categories of involvement in co-operative activities of all farmers were reduced to just two: Currently Involved and Not Involved, to enable cross tabulation by CSA, Farm Type and

The categories of involvement in co-operative activities of all farmers were reduced to just two: Currently Involved and Not Involved, to enable cross tabulation by CSA, Farm Type and
Farm Size and use of Chi-squared tests of association. The key findings are summarised below, and full details can be found in Appendix 2.

In addition to their involvement in co-operative activities, more farmers than expected from Very large farms had set up co-operative activities (p=0.005 V=.264).

Sharing of labour and machinery is widespread with 39% and 44% of farmers respectively currently involved in these co-operative activities and 22% of farmers are currently involved in joint environmental management. None of these activities is influenced by CSA, Farm Type and Farm Size. Involvement in contract rearing of livestock (7%) and Short-term keep of livestock (34%) also seem to be independent of these three factors.

As previously noted, there is an association between CSA and Farm Type and some types of co-operative activities appear to be influenced by this. Farmers in the Wensum and Yare CSA and on Cereal farms are more likely than expected to be involved in Buying groups and growing contract crops; those in the Eden and Conwy CSAs and on LFA farms are more likely than expected to be involved in commons; Very large farms and General Cropping farms are also more likely than expected to be growing contract crops and Dairy and Cereal farms are more likely than expected to be involved in producer organisations/cooperatives; Farmers in Wensum and Yare and Avon, on General Cropping and Cereal farms and on Ultra large farms seem to be more likely than expected to be involved in swapping manure for straw. Finally, although the sample size has caused the Chi-squared test assumptions to be invalid, there is an indication that farmers in the Wensum and Yare CSA, on Cereal farms and on Ultra large farms are involved in Share Farming more often than expected.

It has already been noted that there is an association between CSA and Farm Type and between Farm type and Farm size, particularly that Cereal farms are likely to be very large or ultra large. However, of note in these results is that farmers on very large farms are more likely to be involved in a discussion group, while larger farms are more likely to be involved in joint environmental management and farmers on very large farms are more likely than expected to have set up a co-operative activity. In these cases, the association is only with the size of farm.

8.2 Most important form of co-operation to surveyed farms

Respondents were asked to specify the single most important co-operative activity for them and these results are summarised in Figure 8.2.
Table 8.1 shows the relationship between CSA and the most important form of co-operation for each farmer. This table is read thus: in the Avon CSA, 11% of farmers chose share farming as their most important co-operative activity; overall, 3% of all farmers chose share farming as their most important co-operative activity.

The co-operative activities chosen by over 10% of farmers as their single most important activity were: involvement in buying groups, producer organisations, and a trade union. These are followed closely by sharing labour and machinery, but farmers often mentioned these together and the ‘most important’ was recorded as whichever was mentioned first. Therefore, sharing labour and/or machinery is the most important single activity for 17% of farmers. Note that although over 70% of farmers are involved in a trade union, only 10% of them see it as their most important co-operative activity – this is the most marked disparity between involvement in an activity and whether it is the most important activity.

The top two cooperative activities for each CSA are given below with examples of the reasons given for choosing the activities.
Table 8.1: The single most important form of co-operation for each respondent

<table>
<thead>
<tr>
<th>% within Case Study Area</th>
<th>Taw</th>
<th>Conwy</th>
<th>Upper Welland</th>
<th>Nafferton</th>
<th>Wensum &amp; Yare</th>
<th>Eden</th>
<th>Avon</th>
<th>All Farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Buying group</td>
<td>9</td>
<td>6</td>
<td>6</td>
<td>3</td>
<td>26</td>
<td>6</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>Commons agreement</td>
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<td>0</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>21</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Contract growing of crops for/by other farmer</td>
<td>0</td>
<td>0</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Contract keeping of livestock for/by other farmer</td>
<td>9</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Discussion group</td>
<td>9</td>
<td>6</td>
<td>6</td>
<td>0</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Joint environmental management</td>
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<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>2</td>
</tr>
<tr>
<td>Lending breeding sires</td>
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<td>0</td>
<td>0</td>
<td>6</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
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<tr>
<td>Producer org./cooperative</td>
<td>9</td>
<td>6</td>
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<td>20</td>
<td>0</td>
<td>3</td>
<td>20</td>
<td>10</td>
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<tr>
<td>Short-term keep of livestock</td>
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<td>0</td>
<td>6</td>
<td>3</td>
<td>3</td>
<td>14</td>
<td>7</td>
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<td>3</td>
<td>0</td>
<td>9</td>
<td>0</td>
<td>11</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Sharing labour</td>
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<td>14</td>
<td>6</td>
<td>15</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Sharing machinery</td>
<td>9</td>
<td>0</td>
<td>19</td>
<td>14</td>
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<td>3</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Swapping manure for straw</td>
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<td>0</td>
<td>3</td>
<td>0</td>
<td>15</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Membership of trade union</td>
<td>3</td>
<td>41</td>
<td>13</td>
<td></td>
<td>12</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informal swapping of help &amp; services</td>
<td>0</td>
<td>3</td>
<td>13</td>
<td>17</td>
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<td>0</td>
<td>8</td>
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<tr>
<td>Other</td>
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<td>3</td>
<td>0</td>
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<td>3</td>
<td>5</td>
</tr>
<tr>
<td>No answer / not applicable</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>11</td>
<td>3</td>
<td>21</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Taw – Short term keep of livestock and Sharing of labour

“Ewes and lambs that the neighbour temporarily brings down, helping out with a neighbour - 'benefit of that is all about basically, I want might want something from him, although having said that, it isn't necessarily like that, it's part of farming really”

(Lowland Grazing Livestock farmer, Taw - 10006)

“Taking grasskeep is important, because we wouldn't be able to keep as much stock otherwise.”

(LFA Grazing Livestock farmer, Taw - 10029)

“Informal sharing with neighbours - because it's labour at critical times. We're generally cutting at different times so it works quite well.”

(Lowland Grazing Livestock farmer, Taw - 10024)

Conwy – Involvement in Trade Union and sharing labour

“We cannot gather sheep without help in the commons....”

(LFA Grazing Livestock farmer, Conwy - 20003)

“Trade union membership as they give you a voice.”

(LFA Grazing Livestock farmer, Conwy - 20030)

“Involvement in trade union - because there is so much regulation which needs clarification and legal things.”

(LFA Grazing Livestock farmer, Conwy - 20033)

Upper Welland – Sharing Machinery and Contract crops

“Arable contracting, because I wouldn’t be farming without this support”

(Cereal farmer, Upper Welland - 31007)

“Contract farming - economies of scale”

(Cereal farmer, Upper Welland - 32004)
“Sharing with another farm, enabled to do contract work elsewhere, enabled to have more up-to-date machinery. Economies of scale”

(Cereal farmer, Upper Welland - 32015)

Nafferton – Involvement in producer group and Informal swapping of help, goods and services

“With neighbour, looking after each other’s stock while away. Critical on a livestock farm, or couldn’t go away. Check stock daily, and deal with problems if they arise.”

(LFA Grazing Livestock farmer, Nafferton - 41034)

“The neighbourly stuff is the best thing. One does my silage contracting and bits of work so easy to ask to borrow something. Has ... [family locally] ... and they help each other out (machinery).”

(Lowland Grazing Livestock farmer, Nafferton - 42083)

“Only one - producers' co-op which buys cereal output and supplies inputs. Crucial part of farm business. Fully farmer-owned co-op.”

(Cereal farmer, Nafferton - 42006)

Wensum and Yare – Buying Group and swapping manure for straw

“Swapping straw for muck, because the muck goes back for the sugar beet, and he helps me by clearing the straw up from behind the combine.”

(Cereal farmer, Wensum & Yare - 52021)

“Straw for muck because don’t have arable to harvest. Share sheep and labour with neighbours. Will get together for lambing, shearing etc.”

(Lowland Grazing Livestock farmer, Wensum & Yare - 52092)

“Buying group, because of the cost control and the certainty of it. We know where we are and we get the leverage from it. If we didn’t have that I think our costs would go up substantially.”

(Cereal farmer, Wensum & Yare - 52009)
Eden – Commons and sharing labour

“Commons agreement - if you don’t cooperate the whole system falls down. Trust.”

(LFA Grazing Livestock farmer, Eden - 60008)

“Neighbours - handy shared labour. Keeping others sheep, helping others and getting income.”

(Dairy farmer, Eden - 61014)

Avon - Involvement in producer and buying groups:

“The buying group is absolutely brilliant and everyone should do that (...) and it saves an absolute packet.”

(Lowland Grazing Livestock farmer, Avon - 71071)

“Grain-selling cooperative, because now that so much of our income depends on grain prices, it’s vital to be part of a group where you’ve got an appointed grain seller, so we can get the best prices. And it’s so important for our business to get the best price.”

(Cereal farmer, Avon - 71012)

“...[Supermarket]...producer group - that is an immediate financial return, so that has to be the most important part of what we’ve done.”

(Mixed farmer, Avon - 72005)

8.3 Formal and informal modes of cooperation

Farmers were asked whether they have a preference for formal or informal modes of cooperation.

Figure 8.3 reveals a clear preference for informality when it comes to cooperating with others. Although there was no statistically significant difference between CSAs in this regard it is noted that the Eden CSA has a notably large percentage of farmers preferring informal agreements and the Conwy CSA has an unexpectedly small number of farmers who are not sure which they prefer.
Farmers were asked why they preferred formal or informal agreements. They described why they preferred the cooperation approach they had indicated and some recognised, and mentioned, the benefits of the ‘other’ approach. More than half (53%) of farmers who chose ‘not sure’ went on to talk about how their preference for a formal or informal approach depended on specific circumstances. For some, this depended on what the co-operative activity might be and for some farmers it depended on who they would be co-operating with.

Farmer responses were coded and analysed in the following themes.

**Economic theme**

Farmers indicated that where there is a large-scale initiative and or a significant amount of money at stake, then a formal agreement is necessary.

“When on a larger scale you need formal agreements because people fall out every now and again.”

(LFA Grazing Livestock farmer, Taw – 10013)

“If there’s a lot of money involved then it needs to be formal so everyone knows what the rules are if they fall out.”

(LFA Grazing Livestock farmer, Taw – 10002)
However, in the case of small-scale cooperation, where often no money changes hands, then an informal approach is possible and is preferable.

“We are too small scale for anything formal.”

(Cereal farmer, Wensum & Yare – 51024)

“Help each other out. No money passes - they pay us back when they work for us.”

(LFA Grazing Livestock farmer, Taw – 10001)

**Governance and organisation theme**

Formal agreements are often intrinsic to some types of cooperative activities. E.g. contract farming, share farming, Commons agreements and grain storage. When farmers preferred a formal approach, they saw it as a way of preventing disagreements in the future (mentioned by 18% of farmers who preferred formal agreements), or if they did occur then the existence of a formal agreement would protect them.

“Because it saves disputes down the line, and you know that if it doesn’t work, you’ve got to have it written down, you’ve got to have some form of structure or you’ll end up with an argument.”

(LFA Grazing Livestock farmer, Taw – 10022)

They often referred to the benefits of the clarity provided by a formal agreement (mentioned by 24%).

“Everybody has a clear understanding of what their role is, and it quantifies it. Makes far easier if things don’t go to plan and prevents misunderstandings.”

(Mixed farmer, Upper Welland – 31097)

In contrast, farmers preferring informal agreements often valued them for their lack of rigidity and the fact that they are not binding. They found that these informal arrangements worked for them because of their flexibility (mentioned by 11% of farmers preferring informal agreements), offering them the ability to discuss and adapt their cooperation arrangements to changing circumstances and they found it easier to solve any problems with this approach.

“Cope with unanticipated needs. Can’t set up something formal. Need to play it by ear a lot of the time.”

(Lowland Grazing Livestock farmer, Nafferton – 42083)
Some said explicitly that they did not want a binding commitment and did not want to be ‘tied down’ (mentioned by 12%).

“It doesn’t tie you to future decisions you might have to make - can alter things if necessary.”

(LFA Grazing Livestock farmer, Taw – 10010)

Informal agreements were also seen as being ‘easier’ (15%) in that they did not incur administration overheads and were easier to negotiate and implement in a timely manner.

“Easier - less computer work.”

(LFA Grazing Livestock farmer, Conwy – 20035)

However a few farmers mentioned they had written agreements that they considered to be informal.

Social theme

Only four farmers preferring formal agreements mentioned trust - either that it was required even with a formal agreement, or that they would need a formal agreement in the absence of trust, for example if they did not know someone. No other social factors were mentioned by any of these farmers.

“That's what we normally do and trust both sides to do their bit. Sometimes a written contract can be even overwritten.”

(LFA Grazing Livestock farmer, Conwy – 20029)

Social factors were extremely important for farmers who preferred informal agreements and trust was mentioned by 16% of them. They referred to informal cooperative arrangements as ‘helping each other out’ (14%).

“Informal is good for me, all my feed purchases are informal. It's more sociable, it's more trusting. It helps build trust and friendships, because you're helping each other out and you're honouring your informal agreements, which I think has a greater bonding aspect to it in social life.”

(General Cropping farmer, Wensum & Yare – 51064)
They made these arrangements with people they knew well, neighbours, friends, family (16%) and some expressed a belief that ‘my word is my bond’ (Lowland Grazing livestock farmer, Eden – 61009) and settled agreements with a handshake. Farmers preferring informal agreements relied on these social factors to make the agreements work.

“It depends how well I know them really. I don’t mind either to be honest - if it’s informal well then I know it’s fine, but if I don’t know them then it will be formal.”

(Mixed farmer, Avon – 7109)

8.4 Co-operation: reasons, benefits, difficulties and enablers

Respondents were asked 4 questions – their reasons for co-operating, the benefits of co-operating, the difficulties of co-operating and the factors that enable co-operation. Each question has been analysed and presented in a similar way. Often farmers made more than one response to each question, so all responses were analysed and assigned to categories for each question.

In the following sections the themes revealed as a result of the textual analysis of each question are described. For each question, these descriptions are then followed by a table which shows, for each category, the percentage of farmers who responded with a remark in that category. For example, Table 8.3 shows the reasons for co-operating given by all farmers and by CSA. The table is interpreted thus: ‘Within the Avon CSA 11% of farmers mentioned Access to resources\Labour as a reason for co-operating’ and, overall, 14% of all farmers mentioned Access to resources\Labour as a reason for co-operating’. As each farmer could respond with multiple reasons, the column totals do not add up to 100%. Tables 8.3, 8.4 and 8.5 should be interpreted in a similar way.

8.4.1 Reasons for co-operating

Farmers were asked for their reasons for co-operating and the analysis of their responses was informed by the SIP2 research on collaborative initiatives. The case study work investigated economic, social and environmental aspects of collaboration and these form the broad themes for the analysis of the reasons for cooperating reported by farmers in the baseline survey.

Table 8.3: Reasons for co-operating given by respondents
<table>
<thead>
<tr>
<th>Reasons for co-operating</th>
<th>Taw</th>
<th>Conway</th>
<th>Upper Welland</th>
<th>Nafferton</th>
<th>Wensum &amp; Yare</th>
<th>Eden</th>
<th>Avon</th>
<th>All farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td><strong>Economic</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capacity</td>
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<td>28</td>
<td>9</td>
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<td>25</td>
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<td>14</td>
<td>8</td>
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<td>Skills / Expertise</td>
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<td>6</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Financial (costs / income / efficiency / profit)</td>
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<td>46</td>
<td>41</td>
<td>44</td>
<td>54</td>
<td>53</td>
<td>57</td>
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<td>Swaps</td>
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<tr>
<td>Access to resources (machinery)</td>
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<td>3</td>
<td>31</td>
<td>11</td>
<td>3</td>
<td>17</td>
<td>11</td>
</tr>
<tr>
<td>Access to resources (labour)</td>
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<td>11</td>
<td>3</td>
<td>31</td>
<td>11</td>
<td>15</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>Access to resources (other - land / sires / grazing / store)</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>0</td>
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<td>2</td>
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<tr>
<td><strong>Environmental</strong></td>
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<td></td>
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<tr>
<td>Knowledge exchange (learning / information / advice / ideas)</td>
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<td>15</td>
<td>0</td>
<td>14</td>
<td>9</td>
<td>26</td>
<td>13</td>
</tr>
<tr>
<td>Mutual support (reduction of workload / pressure / stress)</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Mutual support (general help / support)</td>
<td>11</td>
<td>14</td>
<td>12</td>
<td>17</td>
<td>20</td>
<td>21</td>
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<td>12</td>
<td>6</td>
<td>0</td>
<td>12</td>
<td>6</td>
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</tbody>
</table>
**Reasons for co-operating**

<table>
<thead>
<tr>
<th>Reasons for co-operating</th>
<th>Taw</th>
<th>Conwy</th>
<th>Upper Welland</th>
<th>Nafferton</th>
<th>Wensum &amp; Yare</th>
<th>Eden</th>
<th>Avon</th>
<th>All farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>(neighbourliness / community)</td>
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<td></td>
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<tr>
<td>Mutual support (other)</td>
<td>11</td>
<td>3</td>
<td>9</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Off-farm bargaining power (influence / Trade Union support / lobbying)</td>
<td>9</td>
<td>9</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>4</td>
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<tr>
<td>No Answer - N/A</td>
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<td>3</td>
<td>14</td>
<td>3</td>
<td>21</td>
<td>17</td>
<td>11</td>
</tr>
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</table>

**Economic reasons for cooperating**

**Financial Sub-theme**

The economic theme encompasses financial aspects of the co-operation activity and resource management. Farmers co-operate with each other for financial reasons: cost control – (cost of inputs, sharing of capital costs, and reducing fixed costs), and to increase income, output prices and profit. Almost half (48%) of all farmers mentioned financial reasons for co-operating and this percentage is also reflected with little variation between each CSA.

The co-operative activities each affect one or more of these financial aspects and example comments from farmers in a variety of CSAs and farm types on the financial theme are:

**On costs:**

“*Spreading fixed costs, reducing levels of fixed costs, and to help other farmers in the area maintain a level of independence.*”

(General Cropping farmer, Wensum & Yare - 51072)

**On prices:**

“*Producer group: Save costs; confident in assured price for beef (not reliant on market).*”

(Mixed farmer, Nafferton - 41094)
On capital costs:

“Save big capital costs (dryer and storage).”

(Lowland Grazing Livestock farmer, Nafferton - 42089)

On income:

“You have to work together to get income from the fell.”

(LFA Grazing Livestock farmer, Eden - 61023)

On profits:

“...We can produce better livestock and we can keep more numbers. More numbers normally means a little bit more profitability.”

(Lowland Grazing Livestock farmer, Avon - 72002)

Resource management sub-theme

Farmers co-operate with each other to gain access to resources. This is predominantly through the sharing of labour and machinery, but also includes gaining access to land and sharing other resources such as land, animals for breeding and grain storage. 13% of farmers co-operated by sharing labour with those in the Nafferton CSA notably more involved (31%) in sharing labour than farmers in the other CSAs. The reasons that emerged for sharing human resources were to manage the capacity of the workforce on the farm. Sharing labour allows farmers to temporarily increase their workforce as this farmer explained: “Flexibility - increased labour force enables to react to situations.” (Cereal farmer, Wensum & Yare - 52004). It also ensures the availability of the workforce at critical times: “Labour at critical times, cost-savings” (Lowland Grazing Livestock farmer, Taw - 10024). This availability of labour allows jobs to be done more quickly and in a timely manner. For example: “You get a bigger team for the speed of harvest” (LFA Grazing Livestock farmer, Taw - 10016). For some farmers, sharing labour is a necessity: “We couldn't work the farm without cooperation as we need 8 people to gather the sheep.” (LFA Grazing Livestock farmer, Conwy - 20003), and in some cases, jobs would simply not get done without access to additional labour “...we're going to get something done that might not get done if they weren't there to help.” (General Cropping farmer, Wensum & Yare - 52069). A few farmers (3) recognised that sharing labour also increases access to specialist skills and expertise “Another advantage might be specialised labour - you might be working with someone who's more clued up than you at something.” (General Cropping farmer, Wensum & Yare - 52080). Farmers in Nafferton were most likely to give ‘capacity’ reasons for sharing labour (28%) compared to the other CSAs.

Farmers share other resources, predominantly machinery but also grain storage, land and breeding sires, to take advantage of economies of scale. Clearly, sharing machinery reduces the financial costs for a farmer, but they gave other reasons as well for sharing it. For instance: utilising a piece of machinery; reducing duplication of equipment; and allowing access to a wider range of specialist machinery:
"To utilise our own machinery as much as possible, and enable us to have to access to other machinery we don't have on a short term basis."

(Cereal farmer, Upper Welland - 31056)

“To share resources. We don’t all need to buy the same machinery.”

(Cereal farmer, Nafferton - 41013)

“I can access machinery that would otherwise be unaffordable.”

(Cereal farmer, Wensum & Yare - 51024)

Again, sharing machinery is important for farmers in Nafferton, with 31% of them within the CSA involved in this. They are also the most likely to give ‘economies of scale’ as the reason for sharing machinery (25% within the CSA). In contrast, no-one in Conwy mentioned sharing machinery as a reason for co-operation.

**Environmental reasons for cooperating**

Only 5% of all farmers mentioned environmental reasons for co-operating, but amongst this group there was some recognition of the landscape scale of environmental issues, for example:

“From an environmental point of view it’s obviously much better if it's over a wider area, with common goals rather than focusing just on one area.”

(General Cropping farmer, Wensum & Yare - 52076)

Some find co-operation helps with HLS compliance: “we can tick all the boxes in the environmental scheme” (Lowland Grazing Livestock farmer, Avon - 72002) and two farmers voiced support for the cluster farm group approach for environmental management:

“So if you can get a cluster of farmers in an area talking about what they’re going to do, you’re going to get faster, better results than if you’re being dictated to by Brussels or whoever it is.”

(Cereal farmer, Avon - 71012)

**Social reasons for cooperating**
Knowledge sharing sub-theme

13% of farmers mentioned various aspects of knowledge exchange as reasons for co-operating. This sub-theme includes learning from others and sharing information:

“To swap information and try different things out; that’s how everything improves isn’t it. You learn something new yourself, things change don’t they.”

(LFA Grazing Livestock farmer, Conwy - 20022)

It also includes the giving and receiving of advice:

“...because farming can be a lonely life, so when you’re speaking to someone else at least it takes that boredom away, and you can get advice from someone.”

(General Cropping farmer, Wensum & Yare - 51060)

Generating new ideas was also mentioned: “But you get further by sharing ideas with local like-minded people I think.” (Cereal farmer, Avon - 71012). Farmers in Avon (26% within the CSA) and Taw (23% within the CSA) were more likely (while those in Conwy and Nafferton were much less likely) to mention knowledge exchange as a reason for co-operating than farmers in other CSAs.

Mutual support sub-theme

This sub-theme has a number of aspects. 2% of farmers gave their reason for co-operating in labour sharing because it reduces their workload and reduces pressure and stress: “Nice to share the workload when busy. It helps when need to get a job done quickly e.g. with harvesting when it rains.” (LFA Grazing Livestock farmer, Taw - 10001).

A second aspect is reciprocal help and support, informally, without money changing hands:

“Mutual support - if he gets stuck or his vehicle lets him down he can use one of mine and it’s just dead easy.”

(Lowland Grazing Livestock farmer, Wensum & Yare - 51092)

14% of farmers gave Mutual support/Help/Support as a reason for co-operating, although farmers in Avon were less likely to give this as a reason than farmers in other CSAs.
The third aspect to the mutual support sub-theme is where farmers co-operate in order to foster neighbourliness and community spirit and 6% of farmers gave this as a reason for co-operation:

“Nice to help one another. In the old days it was what’s called community spirit. Just neighbourly, neighbourly values. And I think with a lot of farming it’s traditional values, like it was 50 years ago.”

(LFA Grazing Livestock farmer, Taw - 10001).

“Community spirit. We might as well live in the city if we ask for £10 for this and that.”

(‘Other’ farmer, Conwy - 20010)

Some farmers mentioned that co-operative activities are an opportunity to meet people and this helps counteract the loneliness and isolation of farming.

“...it’s good to meet people because it can be a lonely business, farming, unless you’ve got a team of people around you all the time. It saves money and energy and cost. Being a member of discussion groups is all very important for me - it’s supportive. The benefits are meeting people and learning something. So it’s the social part of it and networking and making friends.”

(Lowland Grazing Livestock farmer, Avon - 72007)

Bargaining power sub-theme
A small number of farmers (4%) were co-operating because they found some strength or security in numbers. In most cases this was directed at a purely economic objective such as the strength of producer groups to get the best deal:

“Communal selling of grain - strength in numbers. If done individually, then weak power compared to big buyers. If on own and don’t produce enough to fulfil a contract then are sunk. Big buyers are more willing to buy from a big outfit and possibly give a better price.”

(Cereal farmer, Nafferton - 42006)

However, one farmer was concerned that more co-operation would be needed for farmers to compete internationally.

“If we’re going to grow we are going to have to work together to compete internationally.”

(Lowland Grazing Livestock farmer, Conwy - 20027)
8.4.2 Main benefits of cooperation

Farmers were asked for the main benefits of co-operating. Again, most responded by highlighting a number of benefits, so all benefits put forward by all farmers were analysed and assigned to categories. For each benefit of co-operation, the following tables show the percentage of all farmers who mentioned that benefit. Table 8.4 shows the benefits of co-operating for all farmers and by CSA.

Table 8.4: Perceived benefits of co-operating

<table>
<thead>
<tr>
<th>Benefits of co-operation</th>
<th>Taw</th>
<th>Conway</th>
<th>Upper Welland</th>
<th>Nafferton</th>
<th>Wensum &amp; Yare</th>
<th>Eden</th>
<th>Avon</th>
<th>All farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capacity</td>
<td>6</td>
<td>9</td>
<td>6</td>
<td>11</td>
<td>6</td>
<td>9</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Economies of Scale</td>
<td>9</td>
<td>3</td>
<td>6</td>
<td>25</td>
<td>20</td>
<td>0</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Skills / Expertise</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>6</td>
<td>3</td>
<td>3</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>Financial (costs / income / efficiency / profit)</td>
<td>51</td>
<td>34</td>
<td>47</td>
<td>64</td>
<td>60</td>
<td>59</td>
<td>49</td>
<td>52</td>
</tr>
<tr>
<td>Access to resources (machinery)</td>
<td>23</td>
<td>6</td>
<td>9</td>
<td>31</td>
<td>31</td>
<td>6</td>
<td>31</td>
<td>20</td>
</tr>
<tr>
<td>Access to resources (labour)</td>
<td>6</td>
<td>11</td>
<td>6</td>
<td>14</td>
<td>6</td>
<td>12</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>Access to resources (other - land / sires / grazing / store)</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Improve product/end result</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>6</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Environmental</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental benefits</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>8</td>
<td>3</td>
<td>0</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Social</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge exchange (learning / information / advice / ideas)</td>
<td>31</td>
<td>34</td>
<td>15</td>
<td>22</td>
<td>23</td>
<td>15</td>
<td>34</td>
<td>25</td>
</tr>
</tbody>
</table>
The analysis for this question was again informed by the work done on the SIP2 collaboration case studies, which investigated on-farm and off-farm benefits. Whilst the case study work asked respondents explicitly about on and off-farm benefits, the baseline survey Q33b was an open question and interviewees rarely identified any off-farm benefits. Therefore, unless otherwise indicated, categorisation of responses refers to on-farm benefits. It is worth noting that very few farmers (1%) claimed that there are no benefits to co-operation.

The themes that emerged from the analysis of the farmer responses to this question are similar to the themes derived from Q33a – Reasons for co-operation. Individually and overall, farmer responses to the two questions were similar, so themes common to the two questions are not described in full again in this section.
Economic benefits of cooperating

Financial sub-theme
Just over half (52%) of all farmers mentioned financial benefits of co-operation, which is a similar proportion to those mentioning financial aspects as a reason for co-operating.

Resource management sub-theme
Whilst 11% or farmers mentioned sharing machinery as a reason for co-operating, 20% considered it to be a benefit of co-operation, with farmers in Avon, Wensum and Yare and Taw mentioning it as a benefit markedly more than as a reason for co-operating. The benefits of sharing labour did not show this disparity.

Improve product/end result sub-theme
This sub-theme was introduced by 2% of farmers as a benefit of co-operation, whereas it had not featured previously in their reasons for co-operation. Farmers suggested that co-operation enabled them to improve the quality of their outputs, which would not have been possible for them to achieve individually. This applied to sharing a better quality breeding sire and producing better crops and livestock and one farmer also pointed out the international competition.

“Get a better animal due to higher joint investment.”
(Lowland Grazing Livestock farmer, Eden - 61008)

“Well hopefully reduced costs, better crops, better farming, a more efficient business.”
(General Cropping farmer, Wensum & Yare - 51080)

“Farmers need to work together rather than alone to give an internationally better product. Farmers aren’t competing with their neighbour but with farmers in other countries.”
(Dairy farmer, Conwy - 20009)

Environmental benefits of cooperating

These are similar to those for reasons for cooperation.
Social benefits of cooperating

Knowledge exchange sub-theme
In their responses to Q33a – reasons for co-operating, 13 % of all farmers mentioned knowledge exchange. However, 25% of farmers responded that knowledge exchange is a benefit of cooperation, with Conwy and Nafferton showing a particularly large difference between knowledge exchange as a reason for co-operating (3% and 0% respectively) and as a benefit of co-operation (34% and 22% respectively). This may indicate that knowledge exchange is an unanticipated benefit that becomes apparent once cooperation activities are in place.

Mutual support sub-theme
Farmer responses for benefits of co-operation are similar to those for reasons for cooperation.

Off-farm – Bargaining power
Farmer responses for benefits of co-operation are similar to those for reasons for cooperation.

8.4.3 Main enablers of cooperation
Farmers were asked for the main enablers for co-operation. They responded with a number of enablers, so all enablers mentioned by all farmers were analysed and assigned to categories. Three enablement themes were identified associated with organisation and governance, social factors and economic factors. Amongst these, social enablers were the most likely to be mentioned (Figure 8.4).

Figure 8.4: Respondents mentioning at least one enablement theme
Economic enablers

Economic enablers for co-operation reflect most of the points described in the 33a economic reasons for co-operation. Farmers identified the need for the co-operation to provide everyone with some financial benefit:

“Everybody getting a more of a benefit. Everything comes down to money, it’s either that or a better standard of life.”

(LFA Grazing Livestock farmer, Conwy - 20029)

However, one farmer mentioned the importance of financial equality between partners in a cooperative venture:

“You need them to be strong financially in their own account, because as soon as you’re dealing with someone weaker financially it tips the balance.”

(Cereal farmer, Wensum & Yare - 51033)

Organisation and governance enablers

This theme includes the business structure of the cooperative activity (professional structure, similarity of enterprise, proximity of co-operating parties) and its management (skills and knowledge, leadership/facilitation, goals, aims, vision).

Having agreed plans, roles and responsibilities were seen as vital enablers of a co-operative activity:

“Forward planning really. And sticking to it, it needs to be a structured plan to start with, which we’re not very good at! We veer from the structured plan, but having one to start with does help.”

(Cereal farmer, Avon - 71037)

The similarity of the farming enterprises involved in some co-operative activities was seen as an enabling factor:

“It’s having comparable systems and farms. Every farm is different, but if you can have something that’s on similar cropping, similar size, and obviously good geography - as in nearby - then it works. Because then you can get the timeliness right, you can have
a bigger machine that does a whole field far quicker and then they can pop over the hedge and do the next one.”

(Cereal farmer, Wensum & Yare - 52009)

Associated with this was the suggestion that co-operating farmers need to be relatively close geographically:

“Ideally you want the contractor/share farming to be within 8 or 9 miles…”

(Cereal farmer, Wensum & Yare - 51033)

“It's got to be local.”

(Cereal farmer, Wensum & Yare - 52004)

Interviewees remarked on the need for facilitators and leaders as enablers for the success of the co-operation.

“It depends on what the cooperation is. I think you need some sort of external facilitation just to bring a group together, (...) I think if you want good farmer cooperation they’ve got to really be pushing it along themselves and on their own agenda.”

(Lowland Grazing Livestock farmer, Taw - 10030)

“... And someone’s got to be boss - you’ve got to have one leader. You’ve got to have one person in charge and you’ve got to trust him. And it’s finding that one person that you can do that with, and leave everything to him.”

(Cereal farmer, Wensum & Yare - 52004)

And one farmer talked about leading from the front:

“So the soil is quite a good example - we looked at it, we liked it, everybody else around here was quite negative about it, so we went ahead and did it anyway, (...) they're now doing all of their farms on it. Somebody's got to be first to make the leap, and then once people can see that actually there's a real cost-benefit of doing this, just attention of detail making so much difference to gross margin, everybody wants to do well.”

(General Cropping farmer, Wensum & Yare - 52076)

Finally, an enabler for co-operation is the added skills and expertise that can be brought to the shared activity:
“... you want them to be both competent and also have additional skills, so a good contractor may have good machinery but what is he doing in terms of marketing his crops?”

(Cereal farmer, Wensum & Yare - 51033)

Social enablers

This theme is concerned with social behaviours (give and take, communication for example) and attributes (similar mind-set, trust, personalities) when involved in a co-operative activity. Some farmers made general references to getting on with partners, mentioning personalities and having similar mind-sets. Others attempted to describe the sort of behaviours that enabled co-operation, such as give and take, good communication, fairness, being reasonable, understanding others and being flexible.

Trust was the most dominant sub-theme, being explicitly mentioned by 33% of farmers and was often mentioned with comments about working with friends or family:

“Like-minded. Trust. People you know well - know each other's families; more like friends.”

(LFA Grazing Livestock farmer, Nafferton - 42060)

“Neighbours, friends/known for years.”

(Lowland Grazing Livestock farmer, Eden - 61020)

Farmers identified ‘getting on with’ their partners as an enabler and having common values and beliefs:

“Getting on, listening, understanding one another.”

(Lowland Grazing Livestock farmer, Avon - 72007)

“Everybody to be on the same wavelength and pull together.”

(LFA Grazing Livestock farmer, Conwy - 20022)

“I was going to say a similar age, but then it is quite nice to help a young person, so perhaps similar outlook.”

(Lowland Grazing Livestock farmer, Avon - 71061)
They also identified various behaviours as enablers of co-operation. They were concerned about give and take in the co-operative relationship. They talked about flexibility and fairness, remarking on how they expected partners to be reasonable and co-operative. Also, good communication was raised as an important enabler. These aspects are illustrated in the following quotes:

“Fairness, understanding other people’s problems. I know what my own problems are but other people have other problems you know so you have to help them with their problems to help yourself so everyone can help each other.”

(LFA Grazing Livestock farmer, Conwy - 20030)

“Give and take. If you don’t give then they’re not going to give back are they, in times of need.”

(Dairy farmer, Taw - 10021)

“Willingness to compromise, being prepared to change something slightly, be flexible.”

(Cereal farmer, Avon - 72003)

“That you can talk and communicate and therefore you can potentially cooperate as you can identify where cooperative opportunities could occur.”

(Lowland Grazing Livestock farmer, Eden - 60007)

It is noticeable that economic factors do not feature strongly as enablers as only 5% of all farmers identified them as such. But, 21% of all farmers mentioned organisation and governance issues at least once as enablers of co-operation. There was little variation between CSAs except that, compared to the other CSAs, an unusually large percentage of farmers in Upper Welland (15%) raised geographical proximity as an enabler, whereas for Conwy and Nafferton it was hardly mentioned. More farmers in Conwy (11%) suggested that having a similar enterprise enabled co-operation and farmers in Taw (11%) and Avon (9%) were more likely to refer to having similar goals and vision as an enabler.

Of all the enablers, social enablers were mentioned most frequently (68% of all farmers mentioned at least one social enabler) and of these Trust was mentioned by a third of farmers and ‘Getting on with partners’ was identified by 13% of farmers. Farmers in Conwy (57%) referred to trust most often and those in Upper Welland and Avon mentioned it least (15% and 17% respectively) compared to the other CSAs. 23% of those in Wensum and Yare mentioned ‘Getting on with partners’ but only 6% of farmers in Nafferton.
8.4.4 Main difficulties of cooperating

Farmers were asked about the main difficulties associated with co-operation. They responded with a number of difficulties, so all difficulties mentioned by all farmers were analysed and assigned to categories. For each difficulty, the following tables show the percentage of all farmers who mentioned that difficulty. Table 8.5 shows the difficulties of co-operating for all farmers and by CSA.

The themes within the difficulties question reflect those in the previous Enablers section and concern social, economic and organisational / governance issues.

Figure 8.5: Respondents mentioning at least one difficulty per theme

<table>
<thead>
<tr>
<th>Difficulties of cooperating</th>
<th>% Interviewees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social</td>
<td>84</td>
</tr>
<tr>
<td>Organisation and Governance</td>
<td>38</td>
</tr>
<tr>
<td>Economic</td>
<td>71</td>
</tr>
<tr>
<td>None</td>
<td>61</td>
</tr>
</tbody>
</table>

Table 8.5: Main difficulties of co-operating
## Main difficulties of co-operating

<table>
<thead>
<tr>
<th>Economic</th>
<th>Taw</th>
<th>Conwy</th>
<th>Upper Welland</th>
<th>Nafferton</th>
<th>Wensum &amp; Yare</th>
<th>Eden</th>
<th>Avon</th>
<th>All farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of availability of and damage to resources</td>
<td>23</td>
<td>14</td>
<td>15</td>
<td>44</td>
<td>31</td>
<td>24</td>
<td>43</td>
<td>28</td>
</tr>
<tr>
<td>Lack of financial incentive</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>6</td>
<td>1</td>
</tr>
</tbody>
</table>

| Organisation and Governance                    |     |       |               |           |               |      |      |             |
| Agreement negotiation difficulties             | 0   | 6     | 6             | 11        | 3             | 6    | 6    | 5           |
| Bio-security risk                              | 6   | 0     | 3             | 0         | 0             | 6    | 3    | 2           |
| Poor governance or management                  | 0   | 3     | 3             | 0         | 3             | 0    | 3    | 2           |
| Unsuitability/Limitations of Co-operative initiatives | 6   | 9     | 0             | 6         | 9             | 3    | 17   | 7           |

| Social                                         |     |       |               |           |               |      |      |             |
| Freeloading and unfairness                     | 9   | 20    | 9             | 3         | 14            | 3    | 0    | 8           |
| Incompatibility and conflict                   | 9   | 23    | 18            | 3         | 26            | 26   | 3    | 15          |
| Independence of farmers                        | 3   | 9     | 12            | 11        | 6             | 9    | 6    | 8           |
| Lack of trust                                  | 6   | 14    | 0             | 8         | 11            | 6    | 3    | 7           |
| No difficulties                                | 43  | 9     | 35            | 19        | 20            | 21   | 29   | 25          |
| No answer - N/A                                | 11  | 3     | 0             | 14        | 0             | 21   | 17   | 9           |

### Economic difficulties

A small number of farmers identified the lack of a financial incentive to co-operate, but the main economic difficulty that they raised was with the lack of availability of machinery and labour when they wanted it (timeliness) and the problems caused by machinery being returned damaged and not ready for use (28% of all farmers). Overall, 29% of all farmers mentioned economic difficulties at least once.
“If you’re sharing machinery you could get it back broken or I want it when you want it.”
(LFA Grazing Livestock farmer, Conwy - 20022)

“It’s awkward when machinery comes back broken.”
(LFA Grazing Livestock farmer, Nafferton - 41034)

“...[I know people locally who] ... sold their own machinery and bought bigger and better communal machinery. Formal arrangement. It lasted 7 years and they’ve all fallen out. Timing and access to machinery was a problem. They lost some good friends. There’s also the problem of damage or breakdown. With a contractor, it is a clear business arrangement.”
(LFA Grazing Livestock farmer, Nafferton - 42019)

Organisation and Governance difficulties

16% of all farmers mentioned organisation and governance difficulties at least once. Farmers referred to the difficulty of negotiating agreements, whether formal or informal. For example:

“With commons agreements, getting the commoners to agree!”
(Lowland Grazing Livestock farmer, Avon - 72006)

“Complicated and expensive to set up formal agreement.”
(LFA Grazing Livestock farmer, Nafferton - 41036)

They identified various ways in which the co-operative initiatives on offer had limitations, risks or were unsuitable for them:

“Being a purely grass-based livestock farm, the benefits are not so clear, because I’m neither buying in large quantities of anything and I’m not selling through a group, so I don’t feel our farming system is particularly suitable for that sort of cooperation.”
(Lowland Grazing Livestock farmer, Avon - 72014)

Some referred to bio-security risks with the danger of introducing disease to livestock or blackgrass onto a cereal farm and others cited poor management or governance of a co-operative initiative as a problem.
“I’m considering swapping manure for straw but loathe to because aware of the potential disease being brought in (but am looking into bringing in some pig manure). Would never consider lending breeding sires - think it’s the worst thing farmers can do, it’s horrendous, because of the risk of spreading disease.”

(Lowland Grazing Livestock farmer, Taw - 10030)

Social difficulties

34% of all farmers mentioned social issues as difficulties for co-operation. They referred to incompatibility and conflict between co-operating partners, describing them as ‘not getting on’ or ‘falling out with’ each other.

“Relationships problems - likely to fall out (as we have, many times).”

(LFA Grazing Livestock farmer, Taw - 10010)

“You’ve got to get on with your neighbours. And I think that’s why you want it informal, so that if there’s a disagreement you can walk away and not upset the apple cart too much.”

(General Cropping farmer, Wensum & Yare - 52076)

Farmers were also specific about freeloading and unfairness, identifying difficulties such as a lack of balance and equality, not upholding the spirit of agreements, greediness, people who are happy to take but not to give and gave examples of how this behaviour can undermine the purpose of the co-operative initiative. They also identified a lack of trust (or the need for it) as a difficulty:

“You have people who are greedy where they will take all the help off everybody and not repay but that’s very few and far between and they will be rectified somewhere down the line. They will be ousted from the fair exchanges in the community.”

('Other' farm type farmer, Conwy - 20010)

“When we used to buy cake together people used to leave group to try and buy off other people and get a better deal. There needs to be trust.”

(Dairy farmer, Conwy - 20009)

Some farmers also thought that farmers are independently minded and that causes difficulties for co-operative initiatives.
“We all think we can farm best - we’re not born to cooperate.”
(Cereal farmer, Upper Welland - 31007)

“You lose independence to some degree, you don’t make independent decisions you make collective decisions. Unless everybody in the group is in agreement - you’ve got an interesting debate then!”
(Cereal farmer, Upper Welland - 31016)

The issue causing most difficulties for co-operation is the sharing of machines (and to some extent labour). Labour and machinery may not be available in a timely manner due to competition for the resource, but machinery has added difficulties such as it being returned broken. Farmers in Nafferton (44%) and Avon (43%) cited this as a difficulty more often and those in Conwy (14%) and Upper Welland (15%) referred to it less often than those in other CSAs.

The second largest category is the ‘No difficulties’ category (25% of all farmers), indicating that many co-operative initiatives are, or have the potential to be, working satisfactorily, although farmers in Conwy were much less likely to report no difficulties (9%) and the contrast with farmers in Taw, where 43% of them reported no difficulties, is marked.

Farmers in Avon and Nafferton mentioned incompatibility and conflict as a difficulty least (3% each), whilst farmers in Wensum and Yare and Eden mentioned it the most often (both 26%). Freeloading and unfairness was not mentioned at all by Avon but was clearly an issue for Conwy (20%), who also mentioned lack of trust as a difficulty more than other areas (14%) whereas farmers in Upper Welland did not mention lack of trust as a difficulty at all.

8.5 Involvement in setting up co-operative initiatives

Farmers were asked whether they had ever set up any co-operative initiatives. Just under a third of farmers (31%) responded that they had. Farmers in the Upper Welland (48%) and Wensum and Yare (41%) CSAs were more likely to have set up a cooperative initiative than farmers from other CSAs as shown in Figure 8.6.

Figure 8.6: Respondents who have set up co-operative activities
8.6 Farm businesses not co-operating

Only six of all surveyed farmers were not currently involved in any co-operative activities. Two of these farmers stated that there were no benefits to co-operating, three acknowledged the cost benefits of sharing machinery, one recognised the potential value of knowledge exchange and another thought that help would be useful in case of illness.

Two farmers cited loss of independence as a potential difficulty, one identified the lack of availability of machinery as a problem, two mentioned lack of fairness, one a lack of trust and one thought a clash of personalities might be a problem.
9. Conclusions

9.1 Introduction

The baseline survey of farmers in the SIP case study areas provides a valuable and unique insight into the current state of agriculture in each of these areas. Notable differences were found between CSAs which is not surprising to the extent that the areas were selected to reflect a range of agricultural systems and contexts across England and Wales. Many of the results about the characteristics of respondents’ businesses confirm what might be expected e.g. very large farms commanding the highest incomes and being the most optimistic about their economic position. However, they also reveal some issues that may be less anticipated, even surprising, notably the extent to which farmers work together and the degree to which environmental concerns have become embedded in the day to day business of farming.

In this final chapter of the report we reiterate the key findings of the survey that have the most immediate relevance to SIP 2, and consider some of the implications for policy and practice, further research, and the SI platform more broadly.

9.2 Key findings

Farmers, SI and environmental management

The survey presented an important opportunity to establish the degree of farmer engagement with the concept of sustainable intensification. The results indicate that only half of the farmers in the survey are aware of SI, a figure little changed from an earlier study of fewer farmers. The media appears to be the most important source of this awareness. Less than a quarter of farmers understand SI to be about both production and environmental management with the majority uncertain or sceptical about its meaning.

A range of SI activities developed by the SIP team with stakeholders are, however, being widely practised on surveyed farms albeit with some differences between CSAs which can be largely – but not entirely - explained by differences in farming type. Techniques that foreground the role of digital technologies and staff training for sustainability were the least attractive SI activities while the overwhelming majority of farmers claimed to be optimising marginal land for ecosystem services. The latter result is reinforced by our finding that the majority of surveyed farmers are engaged in formal environmental management in particular through their participation in an agri-environmental scheme. That the levels of participation in AES are broadly comparable with national uptake of schemes demonstrates that the survey is not dealing with an unrepresentative selection of unduly ‘environmentally engaged’ farmers. Of note is the association between presence and type of AES agreement and surveyed farmer understandings of SI. Those without an agreement were more likely to be unsure or unclear about the meaning of SI, and those with an advanced level agreement were more likely to understand SI as relating to both production and environmental obligation.
The relatively high numbers of farmers participating in one or more of the SI activities – together with the positive attitudes towards environmental management and ‘good farming practice’ - suggests that they are, for the most part, seeking (or at least open) to managing their land in a way that both minimises environmental impact and optimises productivity. Factors such as financial pressures, lack of time and the weather, however, often pose difficulties for farmers in working towards this goal (as evidenced by farmers’ responses to the open questions around environmental management and quality of life). These findings mirror the observations of practitioners in the case study areas (e.g. Taw) following informal discussions between SIP 2 researchers and farmers on this topic.

Cooperation

Another important concern of the survey was to develop understanding of the nature and extent of cooperation amongst farmers. Overall, when taking into account all forms of cooperative activity, levels of cooperation were found to be very high across the survey although counter intuitively cooperation is more apparent than expected between the largest farms. A strong preference was expressed for informality in this way of working. Financial factors predominate in motivating farmers to cooperate and these also feature prominently in the list of stated benefits of cooperating. However, a variety of social benefits arising from cooperation were also identified and social factors are emphasised within the range of factors that are recognised by farmers as enabling cooperation to take place including trust, give-and-take / flexibility, like-mindedness and good communication. Formal cooperation with respect to environmental management i.e. in the form of collaborative AES agreements remains relatively uncommon and the environment does not feature prominently as a reason for cooperation.

That farmers cooperate to the degree uncovered by the survey is a finding that challenges the stereotype, often perpetuated by farmers themselves (including by survey respondents), that British farmers are staunchly independent actors who are disinterested in collaborating. However, there are clearly caveats and limitations to the willingness/ability of farmers to collaborate in different contexts. Although the economic and organisational/governance difficulties may be relatively straightforward to resolve with suitable interventions (though these may be resource-demanding), social barriers such as the need for trust, concerns around compatibility of group members, and the cultural emphasis on independence, are more challenging to address.

9.3 Implications for policy and practice

Sustainable Intensification

The survey suggests that farmer awareness and understanding of SI is not as high as might be expected given the period of time that has elapsed since it first emerged within policy at the end of the 2000s. If SI is to remain an important policy objective for DEFRA then steps should be taken to increase farmer engagement. As the RISE report argued in 2014, “a sustainably intensified European agriculture sector requires the active participation of its farmers”. Encouraging farmers to ‘buy in’ to the concept is more likely to lead to their greater
commitment to the concept of SI and the practices of which it is constitutive. This is likely to involve more than awareness raising because, as the survey reveals, being aware does not necessarily equate to understanding and practice. Having said this, an SI information campaign, using various forms of media, may be of some value. Finding ways to further involve farm advisors and other ‘intermediaries’ in the SI agenda may also provide another route to extending and deepening farmer engagement with the concept. However, SIP events continue to reveal that SI remains a contested concept both by farmers and other agricultural stakeholders (dissenting voices have been heard from Natural England and its equivalent organisations in Wales and Scotland). One farmer at the SIP Science Meeting in Bangor, April 2016, asserted publicly that SI is an oxymoron and as such a meaningless farm business and policy objective and yet, as his involvement in LEAF demonstrates, he is committed to more sustainable ways of producing food. Further debate around whether SI is the most effective way of tackling the key challenges facing UK agriculture may, therefore, be required.

Realising SI at a landscape level

Many farmers claim to be engaged in individual activities that may contribute to SI (although the nature and depth of this practice probably requires further investigation – see below). However, that individual farmers practice one or more techniques that could deliver sustainable intensification does not mean that SI is being realised at a landscape level. The survey did not allow us to establish whether an individual farmer who is employing an SI activity is doing this cooperatively. However, it does demonstrate that farmers are already involved to a considerable degree in various forms of joint working. If a scale effect in SI, i.e. within a particular landscape, is required then some form of joint working will be needed. However, this could be achieved through a coordinated approach involving the intervention of a facilitator / project officer. It need not necessarily involve attempting to impose complicated or demanding collaboration between neighbours who do not necessarily ‘get on’ or wish to work with each other. That said, as the work of Boulton et al. (2013) has demonstrated, coordinated schemes should involve land managers in their design and seek to gain voluntary engagement through appropriate incentives. This has already been shown to be effective within the context of some Nature Improvement Areas e.g. the Marlborough Downs. The SIP2 literature review also highlighted the importance of effective and sustained facilitation to build up trust within social networks over a period of time. Such facilitation and coordination has the potential to harness the social benefits, such as knowledge exchange and mutual support, arising from joint working, as well as optimising the potential economic and environmental opportunities offered by SI activities.

9.4 Implications for further research

The survey findings suggest that relatively large numbers of farmers are already implementing a range of SI activities, would consider extending their use or introduce them into their businesses. Nevertheless, these findings have been queried by some members of the SIP team who have expressed concern that what farmers believe to be a form of, for example, precision farming, is not how a farm advisor or agricultural scientist might understand it. As such, these findings of the baseline survey would merit further investigation. A sub-sample of farms who indicated in the survey that they are currently involved / would consider involvement in some or all of the SI activities could be contacted again and their involvement investigated in further
detail through, for example, a telephone or face to face interview. This would also provide an opportunity for exploring with these farmers whether the SI activity is being undertaken collaboratively or whether there is scope for doing so.

9.5 Implications for SI platform

Sustainable intensification, as a concept applied to UK and more broadly European agriculture, arose out of the concerns that followed the global food price increases from 2008 onwards. As a result, it was widely anticipated that farming in the UK would enter into a period of potential growth in output and productivity as farmers responded to the market opportunities represented by the new global realities. SIP was born of a desire to ensure that agriculture would respond to the productivity challenge, well-equipped in terms of technical and research-based expertise but also aware of the equally important imperatives of environmental protection and the provision of ecosystem services. But markets are notoriously tricky to predict and the downturn in global commodity prices that has coincided with the first two years of SIP has placed the British agricultural industry back into a period of challenge. For some, perhaps many, of the farmers in our study areas, belt-tightening and sometimes seeking new income streams off-farm has become more of a priority than investment of the time, intellect, and money that are the prerequisites of sustainable intensification. That some farmers in our sample are positively embracing SI principles in such difficult times is a testament to their resilience and fortitude and on such commitment we hope the SI Platform can continue to forge new possibilities for researchers and farmers to work closely together to achieve SI outcomes. That other farmers will struggle to walk such a road at this time has to be recognised and factored into SIP plans going forward.
Appendix 1

SUSTAINABLE INTENSIFICATION PLATFORM

BASELINE FARM SURVEY

Farmer interview schedule

SECTION A. SUSTAINABLE INTENSIFICATION – YOUR VIEWS AND PRACTICES

1. Have you heard of the term Sustainable Intensification? (Tick one box)
   
   ☐ Yes
   ☐ No
   ☐ Not sure

   If YES, in what context have you been made aware of this term?

2. What do you understand Sustainable Intensification to mean?

3. a. The following are some examples of Sustainable Intensification activities. Please indicate if you are already involved in carrying out these activities, would consider introducing them or increasing usage of them in the future, or if they are not applicable to your farming system. (Tick all that apply)
<table>
<thead>
<tr>
<th>Activity</th>
<th>Already carry out</th>
<th>Would consider increasing / introducing</th>
<th>Would not consider using</th>
<th>N/A to farming system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grow crop varieties with increased tolerance to stresses such as drought, pests or disease</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduce tillage to minimum or no till</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incorporate cover crops, green manures and other sources of organic matter to improve soil structure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improve animal nutrition to optimise productivity ( &amp; quality) and reduce the environmental footprint of livestock systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reseed pasture for improved sward nutrient value and / or diversity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Predict disease and pest outbreaks using weather and satellite data, and use this information to optimise inputs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adopt precision farming: using the latest technology (e.g. GPS) to target delivery of inputs (water, seeds, pesticides, fertilisers, livestock manures)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitor and control on-farm energy use</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Improve the use of agriculturally marginal land for natural habitats to provide benefits such as soil improvement, pollution control or pollination, and allow wildlife to thrive</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide training for farm staff on how to improve sustainability / environmental performance</td>
<td></td>
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</tr>
</tbody>
</table>
3b. Are there any particular barriers that would prevent you from considering these practices?

SECTION B. QUESTIONS ABOUT YOU AND YOUR FARM BUSINESS

4. What is your role in the farm business? (Tick one box)

☐ Sole proprietor
☐ Partner with parent
☐ Partner with son/daughter
☐ Partner with other relative
☐ Partner with non-relative
☐ Director/manager
☐ Other (please tell us) _____________________
5. What is the total area that you farm? ……acres ……… hectares

6. a. How many people are working in your business, including yourself and your family?

<table>
<thead>
<tr>
<th></th>
<th>Full-time (year round)</th>
<th>Part-time (year round)</th>
<th>Casual</th>
</tr>
</thead>
<tbody>
<tr>
<td>You and your family</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employees</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b. Do you use contractors?

☐ Yes

☐ No

If YES, what for?

...........................................................................................................................

7. Approximately, what proportion of your total household income is derived from each of the following sources: *(Tick one box in each row)*

Farming ..............................................................................

Non-farming (diversified) enterprises .................................

Your off farm employment: ..................................................

Off farm employment by other members of farm’s main household ..........................
Savings, investments & pensions ................................

Other (please tell us) ..............................................

8. Taking all of your income sources into account, how would you describe the current economic position of your farm business? *(Tick one box):*

- [ ] Poor
- [ ] Fair
- [ ] Good
- [ ] Excellent

9. The average net profit for England from the 2013/14 financial year was £43,000. In comparison to this, was your farm business income *(Tick one box):*

- [ ] Considerably lower *(less than £21,500)*
- [ ] Similar *(less than £5000 away from £43,000)*
- [ ] Somewhat greater *(greater, but less than £86,000)*
- [ ] Considerably greater *(more than £86,000)*
- [ ] Prefer not to disclose

10. How much are you satisfied or dissatisfied with the overall level of physical production / yield of the farm business? *(Tick one box)*

- [ ] Not satisfied at all
- [ ] Less than satisfied
- [ ] Satisfied
- [ ] More than satisfied
11. Does the farm business make use of any software, including apps, or specific guidance documents, such as the RB209 fertiliser manual, to inform decisions? (Tick one box):

☐ Yes ☐ No

If YES, please provide the name of up to three that you find most useful?
1………………………… 2………………………… 3…………………………

SECTION C. RECENT AND ANTICIPATED CHANGES IN THE FARM BUSINESS

12. Has there been any significant change in this farm business over the last 5 years? If so, what AND why?

Prompt for changes in area farmed, farm infrastructure (e.g. buildings, slurry store), enterprise mix, changes in land management, changes in livestock numbers or breeds, changes in crop types/varieties and the adoption of new technology

13. Have you any firm plans to make any significant changes to this farm business in the next 3 years? If so, what AND why?

Prompt for changes in area farmed, farm infrastructure (e.g. buildings, slurry store), enterprise mix, changes in land management, changes in livestock numbers or breeds, changes in crop types/varieties and the adoption of new technology

SECTION D. ENVIRONMENTAL AND RESOURCE MANAGEMENT

14. Do you have, and use, any of the following management plans for your farm business? (Tick one box in each row)

<table>
<thead>
<tr>
<th>Management Plan</th>
<th>Have and actively use</th>
<th>Have but do not actively use</th>
<th>Do not have formal plan</th>
<th>N/A to farming system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manure management plan</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Nutrient management plan</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Energy efficiency plan</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Crop protection plan / Integrated Pest Management plan</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Soil management plan</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wildlife / biodiversity management plan</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Water management plan</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Pollution risk assessment and corresponding action plan</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Animal health plan</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

15. If you do have one or more of the above plans, can you give examples of where a plan has led to a change in your management.

16. Are you involved in any farm assurance schemes?
   
   *Examples: Red Tractor, LEAF Marque, Other retailer scheme, LEAF Audit*

17. a. Do you generate any energy on your farm that is used within your business? (Tick one box):

   □ Yes       □ No

   If YES, please estimate the percentage of your total energy use (other than diesel and petrol) that you generate .............%

   b. What type of renewable technology do you have on the farm (if any)? (e.g. Wind, AD)

18. a. What area, if any, of your land is certified organic? ................. Acres or Hectares
b. Do you have any land under organic conversion?  

\[ \text{Acres or Hectares} \]

19. Do you currently have an agri-environment scheme agreement? (Tick one box):  

[Note – NOT including the new ‘greening’ measures following CAP reform]

\[ \square \text{Yes (Go to Q20)} \quad \square \text{No (Go to Q21)} \]

20. If YES (you have an agri-environment scheme agreement):

a. In which scheme(s) are you participating and for how long?

b. Were you in another scheme before this?

\[ \square \text{Yes} \quad \square \text{No} \]

If YES, for how long? ..............................

c. What are the main management activities you are carrying out under this/these agreement(s)?

d. What area (or proportion) of the farm is covered by the agri-environment management activities? [Note – include rotational options and woodland creation]

e. Does the agreement involve formal cooperation with other farmers?

\[ \square \text{Yes} \quad \square \text{No} \]

(Now go to Question 22)

21. If NO (you do not have an agri-environment scheme agreement):

a. Have you had an agri-environment scheme agreement previously?  

\[ \square \text{Yes} \quad \square \text{No} \]
b. Which scheme(s) did you participate in and for how long?

c. What were the main management activities you carried out under the agreement(s)?

d. What area (or proportion - % area) of the farm was covered by the agri-environment management activities? [Note – include rotational options and woodland creation]

22. What do you consider to be the main activity on the farm that benefits the environment?

23. Do you feel that any of your farming activities have an avoidable detrimental impact on the environment?

☐ Yes
☐ No
☐ Not sure

Please explain:

SECTION E. COMMUNITY AND QUALITY OF LIFE

24. Typically, how much contact (e.g. face-to-face, phone, email) do you have with other local farmers? (Tick one box)

☐ None
☐ Less than once a week
☐ Once a week
☐ More than once a week

If YES (you have contact with other local farmers), in what capacity / context?

25. Typically, how much contact (e.g. face-to-face, phone, email) do you have with non-farming members of the local community? (Tick one box)
If YES (you have contact with non-farming members of the local community), in what capacity / context?

26. Typically, how much contact do you have with the individuals, organisations or companies to whom you sell your products? *(Tick one box)*

- [ ] Less than once a week
- [ ] Once a week
- [ ] More than once a week

In what capacity / context?

27. a. How important do you feel farming is to the local community?

- [ ] Essential
- [ ] Quite important
- [ ] Neither important or unimportant
- [ ] Not particularly important
- [ ] Not important at all

b. Why do you say that?

28. a. Have your levels of contact with non-farmers changed over the last five years?

- [ ] Increased
- [ ] Stayed the same
- [ ] Decreased

b. Why is that?

29. Please describe what it is like to be a farmer in 2015
### SECTION F. COOPERATING WITH OTHERS

30. Are you involved, either formally or informally, in any of the following forms of cooperation/joint working with other farmers?

<table>
<thead>
<tr>
<th></th>
<th>Currently involved</th>
<th>Previously involved</th>
<th>Considering involvement</th>
<th>Not involved</th>
<th>Do not regard as cooperation/joint working</th>
</tr>
</thead>
<tbody>
<tr>
<td>Membership of buying group(s)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Membership of discussion group(s)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Membership of producer organisation/co-operative(s)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Membership of trade union(s) (e.g. NFU)</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commons agreement (any type, including AES)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental management (e.g. joint agri-environment scheme agreement)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Contract rearing of any livestock – for / by other farmers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contract growing of any crop - for / by other farmers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
31. **Farmers who have never cooperated with others GO TO Q34**

What do you consider to be the most important form of cooperation which you are / have been involved in, AND WHY?

32. a. Thinking about when you cooperate with others, do you have a preference for formal (e.g. involving payments / contracts) or informal cooperation?
   
   ☐ Formal
   ☐ Informal

   b. Why do you say that?

33.

a. What are your main reasons / motivations for cooperating with others?

b. In your opinion, what are the main benefits arising from cooperation?

c. In your opinion, what are the main difficulties / problems arising from cooperation?

d. In your opinion, what are the main factors that enable cooperation with others to work well?

e. Have you ever been involved in setting up cooperative activities?

   ☐ Yes       ☐ No
If YES, what activity and how did this come about?  
(NOW GO TO QUESTION 36)

34. (For farmers who have never cooperated with others):  
What do you consider to be the potential benefits, if any, from cooperating with others?

35. What do you consider to be the potential problems / difficulties in cooperating with others?

SECTION G. PERSONAL INFORMATION

36. What is your highest level of formal education? (Tick one box)

- ☐ Prefer not to disclose (If this box is ticked go to Q38)
- ☐ School education (left at 16 or before)
- ☐ A’ levels
- ☐ Technical qualification (NVQs, BTEC, OND, HND, etc.)
- ☐ Degree
- ☐ Post-graduate qualification
- ☐ Other (Please tell us) _____________________

37. Was your highest level of education related to agriculture? (Tick one box)

- ☐ Yes  ☐ No

38. What is your age? ................

Thank you for your co-operation in completing this interview.
Would you be willing to be contacted as part of further research within the SIP project? This might involve taking part in another interview or being part of a discussion group with other farmers. If you agree to take part in further research for the SIP project we may share your contact details with selected members of the project team for the purpose of this research only.

| YES □ | NO □ |

Would you like to be kept informed of the results of our research?

| YES □ | NO □ |

IF YES would you prefer that we contact you by post or email?

| Post □ | email □ |

email address:.................................................................
Appendix 2

The categories of involvement in co-operative activities of all farmers were reduced to just two: Currently Involved and Not Involved, to enable cross tabulation by CSA, Farm Type and Farm Size and use of Chi-squared tests of association. Table 9.1 below summarises these Chi-squared tests and presents the significance of the Chi-squared test, the size of the effect, using Cramer’s V, and an indication of whether any of the Chi-squared test assumptions were invalid. In addition, the table indicates where the number of farmers involved in a co-operative activity was significantly greater than or less than expected.

Table 9.1 showing the summary of Chi-squared tests for association between co-operative activities and CSA, Farm Type and Farm Size.

<table>
<thead>
<tr>
<th>CSA</th>
<th>Farm Type</th>
<th>Farm Size</th>
<th>χ² Result</th>
<th>χ² Result</th>
<th>χ² Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buying group</td>
<td>p&lt;0.001</td>
<td>Wensum</td>
<td>Conwy</td>
<td>p&lt;0.001</td>
<td>Cereals</td>
</tr>
<tr>
<td></td>
<td>V=.361</td>
<td></td>
<td></td>
<td>V=.410</td>
<td>LFA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lowland</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>P=0.032</td>
<td>V=.209</td>
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<td></td>
<td></td>
<td></td>
<td>V. large</td>
</tr>
<tr>
<td>Discussion Group</td>
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<td>p=0.026</td>
<td>V=.213</td>
</tr>
<tr>
<td>‘Producer org./cooperative’</td>
<td></td>
<td></td>
<td></td>
<td>P&lt;0.001</td>
<td>Dairy</td>
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<td></td>
<td>Cereals</td>
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<td>LFA</td>
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<td>Lowland</td>
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<td></td>
<td></td>
<td>P=0.047</td>
<td>V=.215</td>
</tr>
<tr>
<td>‘Trade Union’</td>
<td>p=0.036</td>
<td>Conwy</td>
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</tr>
<tr>
<td></td>
<td>V=.235</td>
<td></td>
<td></td>
<td>P&lt;0.001</td>
<td>V=312</td>
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<td>Large V. large</td>
</tr>
<tr>
<td>‘Commons’</td>
<td>p&lt;0.001</td>
<td>Conwy</td>
<td>Welland</td>
<td>p&lt;0.001</td>
<td>LFA</td>
</tr>
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<td></td>
<td>V=.445</td>
<td>Eden</td>
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<td>50% &lt;5</td>
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<td>‘Env mgmt.’</td>
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<td>V=.200</td>
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Significant results are shown, where p<0.05. Cramer’s V is given to show the strength of the effect. V=0.1 is a small effect, V=0.3 is a medium effect and V=0.5 is a large effect. Shaded cells indicate that the number of cells with an expected count less than 5 is more than 20%, invalidating a Chi-squared assumption and the percentage of cells with an expected count less than 5 is given in these cases. In these cases the inference was checked with a Fisher’s Exact Test, as described in the methodology, and in all cases was unchanged. The table also shows the CSA, Farm Type or Farm size where an association has been found and more farmers than expected or where fewer farmers than expected are involved in a co-operative activity.