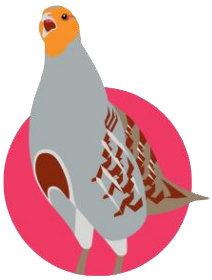
AGRI-ENVIRONMENTAL SCHEMES FOR ARABLE WILDLIFE

A qualitative study in England

Game & Wildlife Conservation Trust, Julie Ewald, Elouise Mayall & Francis Buner



Interreg
North Sea Region
PARTRIDGE
European Regional Development Fund

EUROPEAN UNION

Table of Contents

Background 4
Executive Summary 5
Synthesis of results 7
Organisation and design 7
Ease of Implementation or Practicality 7
Knowledge and Communication 8
Payments 8
Motivation and Trust 9
Introduction 10
Materials and Methods 10
ANALYSIS 11
Results of Interviews 13
Organisation and design 13
Successes 13
Pitfalls 13
Suggestions 15
Ease of Implementation or Practicality 16
Successes 16
Pitfalls 16
Suggestions 17
Knowledge and Communication 18
Successes 18
Pitfalls 18
Suggestions 20
Payments 21
Successes 21
Pitfalls 21
Suggestions 21
Motivation and Trust 23
Successes 23
Pitfalls 23
Suggestions 25
Discussion 26
Farmer Characteristics 26
Farm Characteristics 26

Scheme Management 27
Advice and Demonstration 28
Farmer Clusters 28
Brexit 29
Acknowledgements 29
References 30
Appendix 1: Interview Questions 34
Appendix 2: Codes used for QDA Miner. 36
A. Codes for Knowledge and Communication. 36
B. Codes for Policy 37
C. Codes for Motivation. 38

Background

The PARTRIDGE project is an international collaboration between 13 European partners from within the INTERREG North Sea Region (https://northsearegion.eu/). Together, we advise, monitor and help to manage ten 500-ha demonstration sites (two each in England, Scotland, the Netherlands, Belgium, and Germany), where the project has established and improved conservation measures developed for grey partridges, but which can benefit many species. PARTRIDGE aims for a 30% increase in farmland biodiversity by 2023 in all its demonstration sites, measuring farmland wildlife indicators such as breeding songbird and brown hare numbers. These support the targets in the EU's Biodiversity Strategy for agricultural land.

We have tailored our approach to the needs of each country, to demonstrate how to successfully increase farmland biodiversity across the EU. We actively promote our solutions among a wide range of relevant stakeholder groups, and seek to influence agri-environmental policy, especially by holding farm walk events at our demo areas, tailored to those different groups. Our Danish partner actively promote our solutions in their country, although we have no demonstration sites there.

Our approach can be incorporated into standard farming practices regardless of region or country, which is key to persuading governments to support these methods through national Agri-Environment schemes or adequate alternatives that may be available in the future.

PARTRIDGE Partnership
https://northsearegion.eu/partridge/

United Kingdom
Game & Wildlife ConservationTrust
Lead partner

Netherlands
Vogelbescherming Nederland
Coördinator voor de Nederlandse partners

Stichting Landschapsbeheer Zeeland
Brabants Landschap
Stichting Het ZeeuwseLandschap

Germany
Georg-August-Universität

Belgium
Vlaamse Landmaatschappij
Coördinator voor de Belgische partners
Inagro

Boerennatuur

Instituut voor Natuur en Bosonderzoek
Hubertus Vereniging Vlaanderen

Denmark
Denmarks Jaegerforbund

Executive Summary

1. The North Sea Interreg PARTRIDGE project demonstrates how to recover arable farmland flora and fauna on ten sites across five countries. One of the objectives of PARTRIDGE is to encourage more farmers across the North Sea region to take up the methods used on the demonstration areas. To fulfil this objective, we need an understanding of why uptake has been limited up to now, so that we can construct a strategy to change this. In order to design a large online survey of farmers to explore this subject, we undertook face-to-face structured interviews of eight arable farmers and seven stakeholders (advisors, researchers, and policy officers). The results of those interviews in England are presented here. Five main topics were identified in the opinions recorded in these interviews, outlining what changes are needed to improve uptake and implementation of AE schemes on arable land. These topics were: **organisation and design, ease of implementation or practicality, knowledge and communication, payments, and motivation and trust**. An overarching theme through all interviews was a wide-spread anxiety over **Brexit** and how support for farming would change after this.
    a. Suggestions for improvements to the **organisation and design** of AE schemes include providing advice during inspections of habitat provision, informing the public about the schemes and monitoring, either by experts or through passive means, monitoring the biodiversity gains resulting from involvement in AE schemes and feedback of this information to farmers. New AE options for soil quality, legal predator control and managed elements of rewilding were also suggested.
    b. Improvements to address **ease of implementation or practicality** included incorporating more flexibility in schemes; there should be an emphasis on biodiversity benefits as opposed to rules. Demonstrating best practice AE schemes and the resultant effects on biodiversity would help improve implementation on the ground.
    c. Suggestions on improving **knowledge and communication** centred on more collaboration and communication between farmers, advisors & farmers, and farmers & the general public, taking the form of farm experiments, farm walks and demonstration projects. Again, there was a desire for experts and volunteers to be involved in monitoring biodiversity on AE schemes. There was a need for practical training for farmers in how best to establish and manage AE options as well as training for advisors in how best to assist farmers in getting the best for biodiversity from the schemes, with official accreditation for advisors that includes regular assessment. Recommendations for written guidance included providing two versions, one for non-farmers for communication and one for farmers for guidance that includes information on the scientific background of options.
    d. Changes suggested for **payments** included the view that these payments needed to be more than income foregone to get the best results from AE schemes. Support for farmer clusters was widespread, allowing for access to expert advice and organised public engagement. Many considered that there should be some exploration of alternative payment systems, such as payment by results, competitive bidding, paying more for more birds or other public goods. There was support for varying payments by locations, reflecting soil, local conditions etc. and general agreement for higher support for areas in more need – for instance farmers in Least Favoured Areas.
    e. Efforts to increase **motivation and trust** centred around providing good environmental advice, either quality advice from government or funding for private advisors. Additionally, ensuring that incentives match farmer motivations, as some will be motivated by more money, but others are interested in providing for biodiversity. There is a need to avoid bureaucracy as much as possible, with higher

payments not justifying increases in the bureaucratic burden of AE scheme involvement. It may be worth emphasising the commercial benefits of AE scheme options – for example increases in pest control from options, minimum tillage increasing soil health, buffer zones protecting water resources.

2. We recorded **high levels of anxiety** in relation to changes planned following **Brexit** – particularly the loss of direct support. Efforts to engage farmers and other stakeholders in helping to design and plan these changes may help to reduce this concern but it is the biggest change to British farming in a generation. Anxiety is understandable.
3. Our results are similar to other researchers – three things stand out, other than high anxiety over Brexit:
    - Farmers with experience of AE schemes are judged to provide more "public goods" than those less experienced – this should be tested.
    - Farmers value good advice and having the effects of their AE schemes monitored; both advisors and monitoring need to be supported with funding going forward – this is likely to improve trust, motivation and results.
    - Farmer clusters need to be supported and developed further – organisation of advice and monitoring through these groups could be cost effective and productive if managed correctly.
4. Our online survey is now available (March 2021-May 2021, inclusive). The link for English farmers is: https://www.flexmail.eu/vt-8c3150850a4974b5

Synthesis of results

The key points that were identified from five overall themes are summarised below.

Organisation and design

Successes:	Pitfalls:
• Older AE schemes (ELS/HLS) are better designed/have better options. • Supplementary feeding is a popular option. • Some farmers deliver biodiversity without AE schemes – indicating a predisposition to provide environmental "goods" that could be developed further.	• Bureaucracy hindered uptake & effectiveness. • Late payments – DEFRA/NE/RPA. • Problems with the mapping and online systems. • Disliked geographical targeting – except in the uplands. • Lack of a procedure for farmers to respond.
Suggestions for improvement:	
• Inspections should have elements of advice. • Experts monitor AE schemes, or develop passive monitoring, feedback to farmers. • Public given more information. • Options for soil, legal predator control, managed elements of rewilding.	

Ease of Implementation or Practicality

Successes:	Pitfalls:
• Some measures easy to implement. • Easier to participate in AE schemes when doing something farmers want to do. • HLS considered more financially efficient.	• High level of bureaucracy, enforcement related and overly officious. • Written guidance not practical; there is a need for more demonstration. • Length of agreements, consensus was 5-10 years is best. • Only one date of enrolment per year. • Lack of practicality in management (loss of pesticide active ingredients & increases in generalist predators).
Suggestions for improvement:	
• Incorporate more flexibility - emphasise getting the biodiversity benefit as opposed to rules. • Provide demonstration of best management for AE schemes and how they improve biodiversity.	

Knowledge and Communication

Successes:	Pitfalls:
• Benefits of good advice. • Training, education, monitoring & feedback of advisors and experts was highly appreciated. • Support for farmer to farmer interaction. • Farmer clusters – Open Farm Sundays.	• Lack of public understanding. • Written guidance is too wordy but also needs science spelled out. • Lack of training for farmers and advisors. • Loss of experienced advisors. • Lack of practicality in management (loss of pesticide active ingredients & increases in generalist predators).
Suggestions for improvement:	
• More collaboration and communication between farmers, advisors and farmers, and farmers with the general public. • Experts and volunteers involved in monitoring biodiversity on AE schemes. • Introduction of farm experiments, farm walks and demonstration projects. • Training for farmers and for advisors, with official accreditation for advisors that includes regular assessment. • Develop two versions of written guidance – one for non-farmers for communication purposes, one for farmers with guidance and information on scientific background of options.	

Payments

Successes:	Pitfalls:
• Some interviewees considered the level of payments fair. • Farmer cluster facilitation funding was considered a success.	• Late payments - **all** mentioned this. • Income foregone did not cover cost of implementation and maintenance. • Upland farmers at most risk of bankruptcy.
Suggestions for improvement:	
• AE schemes need a higher rate of payment for the best results. • Keep farmer clusters, public engagement. • Explore alternative payments systems: by results, competitive bidding, pay more for more birds etc. • Payments could vary by locations – reflecting local growing conditions or what is scarce/desirable in that area. • Support to areas in more need – most mentioned upland farmers.	

Motivation and Trust

Successes:	Pitfalls:
• Most farmers interviewed felt they had a major role in conserving the countryside. • Grey partridges were seen as a motivation for conservation. • Green issues are seen as more important by younger farmers.	• *"You can't be green if you're in the red".* • Some felt isolated and that they were a minority. • Fear - struck by the level of fear and anxiety. • Bad experiences they had with inspections. • Lack of trust. • Belief that rules and regulations kept changing. • No access to a trusted NE Advisor. • Unwanted environmental designation.
Suggestions for improvement:	
• Provide incentives to match motivations, some motivated by money, others by an interest in conservation. • Higher payments does not justify more bureaucracy. • Good environmental advice – either quality advice from government or funding for private advisors. • Emphasise commercial benefits of AE scheme options – pest control, minimum tillage, soil health, buffer zones.	

Introduction

An integral part of the North Sea Interreg PARTRIDGE project is to determine why the decline of farmland wildlife has not been halted in EU member states, despite research into the causes of this decline and appropriate methods to reverse it (Brewin et al., 2020). This ongoing decline is in spite of the widespread availability of agri-environmental schemes (AE schemes), with options directed towards the conservation of arable farmland wildlife. The failure to halt farmland wildlife decline is believed to reflect a shortfall in uptake of the most effective AE scheme options for farmland birds, inappropriate or insufficient management of these options when they are taken up and, in some cases, a lack of governmental support for appropriate AE scheme measures (Batáry et al., 2015; Kleijn et al., 2019; Walker et al., 2018). In PARTRIDGE we want to ensure that the AE scheme options established on the PARTRIDGE demonstration sites are taken up by farmers and land managers across the countries of the North Sea area and beyond, emphasising the importance of bringing an understanding of farmer behaviour and motivation into farmland conservation (de Snoo et al., 2013). We need to better understand why AE scheme provision has failed to address wildlife declines and what changes are needed to address this failure. In order to devise a solution, the PARTRIDGE project will survey farmers, across the six countries it works in, on their opinions and experiences with AE schemes for arable wildlife, using an online survey system. Drafting that survey required some initial data collection to ensure that it would reflect both farmer experience and that of experts involved in AE scheme formulation, provision, and application.

We used qualitative social research methods (*i.e.,* face-to-face structured interviews) to help us determine useful questions for that survey. This allowed researchers to get an overview of the different opinions that farmers have of AE schemes for farmland wildlife, as well as those held by policymakers, advisors, and researchers in this field. Qualitative research makes it possible to gain insights into the underlying beliefs and opinions of people on a certain topic and helps those looking for a solution to problems to consider other opinions and reflect on what those on the ground think. The results of that qualitative research, undertaken in the autumn of 2018 across lowland England and focussing on arable farmers and farming, are presented in this summary.

Within the framework of the North Sea Interreg PARTRIDGE project we defined the actual research question of the qualitative research as follows: "What is needed to improve the effectiveness of AE schemes for farmland wildlife; what are the success factors and pitfalls associated with these AE schemes?"

Materials and Methods

Structured interviews require the formulation of a set of questions to ask respondents, to be used by all those undertaking interviews. PARTRIDGE partners across the five countries involved (England, Scotland, Belgium, the Netherlands, and Germany), together with a pair of experts (Maarten Crivits of the Flemish Institute for Agriculture and Fisheries, Lee-Ann Sutherland of the James Hutton Institute in Scotland) developed a series of questions designed to explore stakeholder opinions of AE schemes for farmland wildlife (Appendix 1). The topics dealt with in the questionnaire include exploring opinions about the governmental processes for providing AE schemes, the implementation of AE schemes in practice – this includes the options available and the effectiveness of them, how to improve the uptake of AE schemes, considerations regarding the remuneration paid for AE schemes

and how this is calculated, any thoughts about monitoring of AE schemes effectiveness and how good is the guidance available to help establish and manage AE schemes.

The advantage of a semi-open questionnaire is that it gives structure to an interview. It is an interview guide, so that a predetermined list of topics will be discussed in the interview. The order of the subjects, the formulation of the questions and the formulation of the answers are not fixed. The questionnaire is used as a checklist to make sure that all subjects and topics, are covered, with the interviewers ensuring that the conversation develops so that the opinions of the interviewee can be freely expressed and recorded.

In England, interviews were conducted by research and advisory staff of the Game & Wildlife Conservation Trust in the autumn of 2018. All interviews were undertaken in person, arranged through previous appointments, with adequate time given for free and frank exploration of ideas. Written notes were taken during the interview and recordings made of the interviews to allow written notes to be checked and updated where necessary. The interviews were done with farmers, as they are the group that uses AE schemes, and non-farmers who are involved with AE schemes for wildlife in any capacity. Here we refer to the group of "non-farmers" as "stakeholders".

Eight farmers and seven stakeholders were interviewed. Of the farmers interviewed, six were currently involved in AE schemes for farmland wildlife and three of these also had shooting interests. Of the two remaining farmers, neither of whom were currently in AE schemes for farmland wildlife, one had an interest in shooting; they were included to explore reasons why they did not take up an AE schemes for arable wildlife. We selected farmers with a good knowledge of AE schemes who were also an active member of their community. Their holdings ranged from large estates to small family run farms. Due to time and accessibility constraints the farmers selected for interview were previously known to GWCT staff members, but we avoided interviewing any farmers currently involved in the demonstration areas in the PARTRIDGE project.

The seven non-farmer stakeholders were selected using purposive expert sampling. This technique is commonly used in the early stages of a research process when the researcher is seeking to become better informed about the topic at hand before embarking on a study. These stakeholders were representatives of the National Farmers' Union of England and Wales (NFU), the Country Land and Business Association (CLA), Farming and Wildlife Advisory Group (FWAG), Natural England (NE, two interviews at different levels within the organisation) and The Royal Society for the Protection of Birds (RSPB), as well as one advisor from GWCT. They were classified into types of stakeholder; many were classified into multiple categories. In total there were two representatives of farm owner organisations, two representatives of non-governmental nature organisations, four who provided advice on AE schemes for farmland wildlife, four who worked in AE schemes policy, two who worked on research associated with AE schemes and one who helped design AE schemes for farmland wildlife.

ANALYSIS

The fifteen interviews were transcribed from the recorded interviews. The text of the interviews was **"coded"** to organise the interview data into subject matter providing relevant answers to our research questions. Coding is an iterative process consisting of several steps of fine tuning and comparing codes to structured qualitative data. The coding for this project needed to coordinate across all five countries and so we used a "codebook", with a list of 30 codes, divided into three general categories (knowledge & communication, policy and motivation) and a description of what each code covered to achieve this (Appendix 2).

We used a free data management program (QDA Miner - https://provalisresearch.com/products/qualitative-data-analysis-software/freeware/) to code the information recorded in the interviews. Once coded, these were pulled together to identify key points.

We used the research question "What are the success factors and pitfalls to improve the effectiveness of AE schemes for farmland wildlife?" to cluster key points into five overall themes, identifying pitfalls and success factors for each, together with any suggestions for the future that were proposed by the interviewees.

The five overarching themes were:

- Organisation and design: Opinions about the design and management of AE schemes for farmland wildlife.
- Practicality/ease of implementation: Opinions about how hard/easy it is for farmers to carry out AE schemes for farmland wildlife.
- Knowledge and communication: Opinions concerning the knowledge of farmers, advisors, knowledge-exchange between farmers, public, government and advisors on AE schemes for farmland wildlife and knowledge about this communication.
- Payment: Opinions about the remuneration and the system to calculate the remuneration of AE schemes for farmland wildlife.
- Motivations and trust: Opinions about the motivation that prompt farmers to take up AE schemes for farmland wildlife, includes information about fear and distrust towards AE schemes for farmland wildlife.

A summary of these interviews is presented in the results section.

Results of Interviews.

Organisation and design

Successes:	Pitfalls:
• Older AE schemes (ELS/HLS) are better designed/have better options. • Supplementary feeding is a popular option. • Some farmers deliver biodiversity without AE schemes – indicating a predisposition to provide environmental "goods" that could be developed further.	• Bureaucracy hindered uptake & effectiveness. • Late payments – DEFRA/NE/RPA. • Problems with the mapping and online systems. • Disliked geographical targeting – except in the uplands. • Lack of a procedure for farmers to respond.
Suggestions for improvement:	
• Inspections should have elements of advice. • Experts monitor AE schemes, or develop passive monitoring, feedback to farmers. • Public given more information. • Options for soil, legal predator control, managed elements of rewilding.	

Successes

Previous AE schemes (ELS- Entry-Level Stewardship/HLS-Higher Level Stewardship) were deemed to have been more successful than the current ones (CSS-Countryside Stewardship), both in terms of biodiversity and uptake. Many interviewees, particularly the stakeholders, thought that the organisation and design of new schemes (ELMs - Environmental Land Management scheme, etc.) would be better if they were developed from ELS/HLS instead of CSS. ELS was considered to have paid well and managed to get a lot of farmers involved in AE schemes (70% of the farmed area in England was enrolled in AE schemes in 2011, CFE, 2013), but failed to provide many environmental benefits. The AE scheme options for birds in ELS/HLS were considered good, although several advisors interviewed considered that the options for pollinators were just really "bird options in disguise", i.e., there had been little effort to devise specific options aimed directly at a variety of pollinators. One relatively new AE scheme option which received positive reviews from both farmers and stakeholders was supplementary feeding.

Several interviewees brought up the fact that farmers are not reliant on AE schemes to benefit wildlife. Several stakeholders wanted to explore other ways of supporting farmland biodiversity other than AE schemes, which some saw as a blunt tool that was overly relied on, with little support to improve their ability to provide for biodiversity once agreements were signed. Should we avoid pinning all our hopes for farmland recovery on AE schemes? After all, some farmers are delivering for wildlife without AE schemes or deliver over and above what is required for their AE scheme options.

Pitfalls

There were many pitfalls and problems in organisation and design highlighted by both farmers and stakeholders interviewed. These can be summarised into three main themes, with some overlap: 1. those related to government bureaucracy, 2. issues with payments and 3. difficulties with applications for AE schemes. There were also a few interviewees that highlighted more detailed issues.

Bureaucracy: Several interviewees thought that bureaucracy at the European Union level hindered both the uptake and the effectiveness of AE schemes. Many of these same respondents were not convinced that the English government was going to do much better post-Brexit. Several interviewees thought that there was a need for a dedicated agriculture department – harking back to the days of the Ministry of Agriculture, Fisheries and Food (MAFF, 1955-2002) that was subsumed into the Department for Environment, Food and Rural Affairs (DEFRA), in 2002. Many pointed out that over 70% of the UK land area is managed by and for agriculture, indicating the inordinate effect farming has on both biodiversity and landscape. Several interviewees expressed confusion over the changes that have recently taken place in the division of priorities and responsibilities between Natural England (NE), a non-departmental public body sponsored by DEFRA and the Rural Payments Agency (RPA), an executive agency of DEFRA. There was general concern that, both before these changes and particularly after it, Natural England was understaffed, under-resourced and suffered from low morale. Many interviewees were undecided as to whether moving responsibilities for AE scheme payments to the RPA was a good or bad move and were concerned that added administration would result in added bureaucracy, and therefore minimal efficiency.

Payments: This development of the RPA taking over responsibility for AE scheme payments leads directly into the next main concern of the interviewees which centred around how these payments have been managed. Every farmer interviewed involved in AE schemes, and every stakeholder interviewed, mentioned something about issues to do with payments. This reflects a major shortfall of the English system, where farmers who have undertaken AE schemes have not received their payments for years after they were supposed to. The RPA cleared the backlog of all historic ELS/HLS and CS payments in September 2019. This was still an active issue when the interviews were done, and it was a big reason many farmers gave for either not wanting to go into another AE scheme themselves or reporting that other farmers were reluctant to go into an AE scheme. Further concerns regarding levels of payments etc. are found on page 18.

Applications: Several stakeholders mentioned problems with the mapping and online systems used when applying for an AE scheme, with mistakes on maps taking considerable time to resolve, which then interferes with a farmer's ability to apply for AE schemes. Several participants considered the forms used to join an AE scheme as overly complicated, with specific mention of densely written, unreadable guidance (more on this on page 16). The geographical targeting of AE schemes was disliked by many farmers and stakeholders for several reasons. It was felt that it led to more administration and hence bureaucracy. There was a belief that geographical targeting was ineffective at addressing the loss of biodiversity it was geared towards conserving, and finally several interviewees thought that the outcomes of AE schemes would be improved if the schemes targeted farmers who actually wanted to undertake them, not just those in the "right" region. The **one instance** that geographical targeting was considered in a positive light by several respondents was in targeting for upland areas – which interviewees (both farmers – none of whom were actively farming in the uplands – and stakeholders) saw as needing the extra support to retain farming (mainly grazing) in these low production areas.

Aside from the three main pitfalls outlined above identified by most interviewees, there were several issues that were mentioned less frequently. There was a desire by several farmers and stakeholders for the government to be more proactive. This was in response to changes in the practical implementation of options but agri-economic issues as well. Several interviewees mentioned a big pitfall was the lack of a procedure for farmers to respond within the system. Farmers, government, and the advisors that supported AE schemes all need an opportunity to learn from failures in practicalities, whether that was in difficulties with the establishment of an option or

difficulties with management of options. Several farmers, when the subject of rewilding was brought up, had negative opinions of this – seeing it as 'land abandonment'. The interviewees were uncertain as to who should monitor biodiversity and how important it would be to do this post-Brexit (at the time of the interviews there was much discussion of how to measure the success of the new AE schemes being planned). The general understanding was that AE schemes would have to demonstrate increases in biodiversity as an outcome in order to get monetary support. Several interviewees mentioned a concern for continued funding of farmer clusters – many felt that there had not been an agreed method to measure how successful they had been, though they welcomed the ability to work cooperatively.

Suggestions

Several interviewees gave us their thoughts on how the system for AE schemes should be organised and management recommendations that could be developed into AE scheme options in the future.

Regarding the details of the system, many suggested that inspections should have elements of advice incorporated in them. This should not be interpreted as farmers thinking they should not be inspected (they thought inspections, or their possibility were necessary) but that there should be more emphasis on improvement of how options were provided. Interviewees said that inspections should happen early in the lifetime of an agreement to provide time to put things right, thus providing a greater likelihood of achieving biodiversity benefits within AE scheme provision. Some interviewees suggested that AE schemes should be made more competitive – so that farmers had to raise their game to qualify. Concerning monitoring several farmers suggested that experts monitor the farms that provided AE schemes, though it was acknowledged that this would be expensive. It was felt that this would help farmers achieve more if the results of expert monitoring were fed back to the farmers. Lastly, several interviewees wanted to see increased public support based on better publicity – with the public given more information about what AE schemes were, their achievements and what various options looked like in the field so that when the public visited the countryside, they understood what was happening a bit better.

Several design elements were suggested in the interviews. Firstly, many farmers and stakeholders wanted to see more options geared towards improving soil and helping alternative tillage systems. Many wanted financial support for legal predator control, undertaken during the spring breeding season to help the eggs and chicks of declining farmland birds. There was some support for the more managed elements of rewilding, with an emphasis on 'managed', an example given was European beaver releases. And finally, there was the suggestion that research should be carried out into finding passive means to monitor how much biodiversity is produced by the establishment of AE scheme options – one suggestion was using sound or bat monitors.

Ease of Implementation or Practicality

Successes:	Pitfalls:
• Some measures easy to implement. • Easier to participate in AE schemes when doing something farmers want to do. • HLS considered more financially efficient.	• High level of bureaucracy, enforcement related and overly officious. • Written guidance not practical; there is a need for more demonstration. • Length of agreements, consensus was 5-10 years is best. • Only one date of enrolment per year. • Lack of practicality in management (loss of pesticide active ingredients & increases in generalist predators).
Suggestions for improvement:	
• Incorporate more flexibility - emphasise getting the biodiversity benefit as opposed to rules. • Provide demonstration of best management for AE schemes and how they improve biodiversity.	

Successes

There were aspects of both current and past AE schemes and their practicality that interviewees considered to be successful. Some measures were judged as relatively easy for farmers to adopt (for example low input grassland and hedgerow management). Several interviewees said that farmers found it easier to incorporate AE schemes into their farming business where they were using it to do something they already wanted to do. This ranged from conserving grey partridges (with some having the stated goal of establishing a wild grey partridge shoot), to an interest in conserving other farmland birds and waders, such as turtle dove or lapwing. When considering the financial efficiency of programmes, the previous Higher-Level Stewardship (HLS) was considered most efficient, both from a farming point of view and from a conservation point of view. This view was expressed both by farmers and by stakeholders. HLS required more input both from the farmer and in terms of funding, but this provided relatively more payback for the farmer and it appeared to have provided more conservation benefits (Bright et al., 2015, Ewald et al., 2010).

Pitfalls

There were major pitfalls identified when considering the practicality both of the previous (ELS/HLS), current (CS) and proposed future (ELMs) AE schemes and also for individual AE scheme options. Perhaps the biggest pitfall was the level of bureaucracy involved in AE schemes, particularly in enforcing compliance. Although participants understood the need for enforcement there was a strong dislike in how it is currently done. Both farmers and stakeholders complained of overly officious surveyors, who often had little hands-on knowledge of what the AE scheme was supposed to provide and how they were practically established. This was discussed previously under the organisation and design theme, with the implications considered in the motivation and trust theme (see page 20).

There was an appreciation by both farmers and stakeholders that farmers who had previous experience or knowledge of AE schemes were better able to manage complicated options, AE schemes in general or to deal with changes when transitioning between different schemes (HLS moving to Countryside Stewardship for example). Of note here was the difficulty of managing the more challenging options, for example Conservation Headlands. The farmer interviewed with perhaps the most experience of these options in the UK admitted they were “not for the fainthearted”. It was felt that the written guidance provided was too complex and/or poorly

written; interviewees did not feel it provided practical guidance and it did not make implementation easier. More examples or demonstrations are really needed.

Issues to do with the length of agreements were also highlighted when considering ease of implementation (or the lack of it). There were mixed opinions about what would be the ideal length of an agreement – some suggest 1 to 2 years whilst others even considered 10+ years a good idea. Agreements of between 5 to 10 years were usually seen as a good compromise. There was agreement by all interviewees holding an opinion that the current system of designated enrolment dates (one per year per scheme) was not good and only added to the bureaucracy and made continuity from one scheme to the next difficult. The former system of rolling dates throughout the year was much preferred. The final issue to do with dates and time was with rigid or inflexible sowing dates. These were often impractical or inappropriate, with weather and geographical variation. Many respondents felt this would be better left to farmers to decide, based on local conditions, with some written guidance to help make that decision but not prescriptive dates, particularly for sowing.

Two other issues were brought up by interviewees that fell under the heading of practicality. The first of these was active ingredients in pesticides (in particular herbicides), and how losing these, through changes in regulations, might affect management. This could be an issue if ingredients that were vital in the management of specific options were no longer available. The other consideration was the effect of generalist predators on the success of AE scheme options. Many interviewees (mainly farmers but also some stakeholders) wanted some aspect of predator control, either direct (lethal means) or indirect (fencing etc.) incorporated in AE scheme options to ensure that habitats provided through a scheme did not result in the creation of what was a sink or trap for species targeted through AE schemes (for example grey partridges, lapwing etc.).

Suggestions

Two suggestions for ways to help easier implementation of AE schemes were put forward by the interviewees. The first is to incorporate more flexibility for both stakeholders and farmers into the system. Interviewees did not think that this should result in a lack of adherence to the rules. There needed to be flexibility in how these rules were applied, with an emphasis on getting the biodiversity benefit that the AE scheme was directed towards, as opposed to a rigid adherence to rules. Another suggestion was to provide demonstrations of how AE scheme options and their management improves biodiversity. If people can see the improvement to biodiversity implemented on the ground and examples of how it is done, then they will find implementing AE scheme management on their own land easier. It is worth noting here that PARTRIDGE fulfils this suggestion through its demonstration areas.

Knowledge and Communication

Successes:	Pitfalls:
• Benefits of good advice. • Training, education, monitoring & feedback of advisors and experts was highly appreciated. • Support for farmer to farmer interaction. • Farmer clusters – Open Farm Sundays.	• Lack of public understanding. • Written guidance is too wordy but also needs science spelled out. • Lack of lack of training for farmers and advisors. • Loss of experienced advisors. • Lack of practicality in management (loss of pesticide active ingredients & increases in generalist predators).
Suggestions for improvement:	
• More collaboration and communication between farmers, advisors and farmers, and farmers with the general public. • Experts and volunteers involved in monitoring biodiversity on AE schemes. • Introduction of farm experiments, farm walks and demonstration projects. • Training for farmers and for advisors, with official accreditation for advisors that includes regular assessment. • Develop two versions of written guidance – one for non-farmers for communication purposes, one for farmers with guidance and information on scientific background of options.	

Successes

Several success factors concerning communication and knowledge exchange for AE schemes were identified in the English interviews. The benefit of receiving the right advice, both from Natural England (government) and other (*i.e.* paid) advisors was highlighted. Farmers value the training and education provided by advisors and other experts. They like finding out the results of monitoring of their land and receiving feedback on that, particularly if it is couched in terms of learning rather than lecturing. Access to experts who interacted with farmers on the farm was especially positively received by farmers. The importance of farmer-to-farmer interactions was highlighted, with the thought that this helps farmers retain knowledge. Farmer clusters were a good example of how best to communicate and share ideas, both advisor/expert to farmers and farmer-to-farmer, but especially the latter. Farmer clusters were also considered to provide good publicity for farmers, with many organising "Open Farm Sunday" events (https://farmsunday.org/) as well as other events related to farmer cluster engagement activities.

Pitfalls

Four topics were identified as pitfalls in communication and sharing of knowledge in the English interviews. These were:

- The lack of public understanding of farming and wildlife.
- Problems with the written guidance on AE schemes available to farmers and landowners.
- Issues with farmer communication and knowledge.
- Variable knowledge and communication by advisors.

The lack of public understanding of farming and the lack of public appreciation that wildlife is dependent on the farmed environment was highlighted as a pitfall for AE schemes since monetary support for AE schemes is funded from the public purse. This has been the case within the EU, with the UK government providing additional funding through Pillar 2 in the past. After Brexit the plan from the English government is that direct subsidy for farming production will gradually diminish,

with the only subsidies available to farmers being ones directed towards the environment – phrased as "public funds for public goods" (agricultural funding is a devolved issue, so it will be different in the other UK nations). Farmers and stakeholders think that a lack of public understanding of farming and wildlife is a threat to this funding. There is a need to bridge this gap, with information that shows the value of the investment, so that funding for AE schemes is maintained or even expanded post-Brexit.

The written guidance for AE schemes that is available to farmers and land managers was the subject of two criticisms that may initially appear contradictory. Firstly, the current guidance was considered too lengthy with detailed information difficult to find and more concise information would be helpful. In contrast, there was a desire from interviewees for more information on the scientific basis of AE scheme options. Many farmers felt that, although they often have heard that AE scheme options were based on science, nowhere in the guidance was this spelled out[1]. There was a desire amongst farmers and stakeholders for this information to be available. The take home message may be that the guidance needs to be concise and provide scientific back-up for its rules and recommendations, with some farmers suggesting different documents for these different purposes.

Interviewees (both farmers and stakeholders) saw farmers as isolationist in their outlook which hinders their ability to communicate, although one interviewee felt that there were recent moves to address this isolationism. Specific considerations mentioned were a need to expand farmers' knowledge of AE schemes, which was considered variable by interviewees. Some farmers were perceived to have a good working knowledge of AE schemes and various options – often those with a long history of being in them – while others had gaps in their knowledge, particularly in the specifics of implementing the options. There was a perceived need to expand training in AE schemes in agricultural colleges and through other means after formal education. Interviewees underlined farmers appreciation of learning opportunities, but there was once again a feeling that they disliked "being told or lectured". This reflected a need for a balanced approach from government in interactions with farmers, emphasising learning rather than reprimanding.

The last set of pitfalls regarding communication and knowledge highlighted in the English interviews was the perceived knowledge and experience of advisors (both governmental and private/NGO based), which again was considered of variable quality. Interviewees thought that a good relationship with Natural England advisors is both very important and appreciated by farmers. The concern was that governmental austerity measures had resulted in more experienced, and thus expensive advisors, being replaced with cheaper, less experienced ones without the opportunity through mentoring to pass knowledge on. Promotion of advisors (both in governmental organisations and in NGO/private organisations) also resulted in a loss of experience, again without passing on knowledge to the person recruited to replace the experienced advisor. Another related aspect was mentioned by several of the advisors interviewed. They reported that advisors from an agronomic background were giving biodiversity advice – reflecting a lack of appreciation for the detailed biodiversity knowledge needed for the best conservation outcomes. This may be contributing to some of the perceived variation in the quality of advisors.

[1] It is worth noting that the PARTRIDGE project itself published an evidence-based booklet (Brewin et al., 2020) which summarises the benefits of AE measures that are key habitat measures for grey partridges together with their benefits for farmland biodiversity more generally.

Suggestions

Interviewees offered several suggestions regarding communication and knowledge exchange. They suggested more collaboration and communication between farmers, advisors and farmers, and farmers with the general public. They wanted experts and volunteers to be involved in AE schemes - particularly in monitoring any biodiversity results from AE scheme implementation. This reflects the desire for more evidence on the benefits to biodiversity from the provision of AE schemes, both scientific and anecdotal. Examples they mentioned were "on-farm" experiments, farm walks and demonstration projects (note PARTRIDGE demo sites fulfil these to some extent).

Interviewees emphasised the importance of training for farmers and for advisors, with official accreditation for advisors that reflected their knowledge on how to best implement AE schemes to produce biodiversity benefits. They also underlined a need to ensure that people retained knowledge – perhaps indicating a need for ongoing accreditation for advisors though farmers were also included in this need to retain knowledge, with famer clusters mentioned as one way that this knowledge is reinforced and retained for farmers. Retaining experienced, knowledgeable advisors was of high priority. Finally, considering the problems highlighted with written guidance and advice, there was the suggestion to create two versions – one for non-farmers as a communication tool to explain the AE schemes to the public and interested non-farmers and the other for farmers that usefully provided the guidance and knowledge necessary to establish quality AE scheme options, with information on the scientific background to the options.

Payments

Successes:	Pitfalls:
• Some interviewees considered the level of payments fair. • Farmer cluster facilitation funding was considered a success.	• Late payments - **all** mentioned this. • Income foregone did not cover cost of implementation and maintenance. • Upland farmers at most risk of bankruptcy.
Suggestions for improvement:	
• AE schemes need a higher rate of payment for the best results. • Keep farmer clusters, public engagement. • Explore alternative payments systems: by results, competitive bidding, pay more for more birds etc. • Payments could vary by locations – reflecting local growing conditions or what is scarce/desirable in that area. • Support to areas in more need – most mentioned upland farmers.	

Successes

Many of the interviewees considered the level of payments fair, although some disagreed. Additionally, there was general approval of the monies provided through facilitation funding for farmer clusters. It is worth noting that there were few perceived successes associated with the "Payment" theme.

Pitfalls

The main criticism of the payment system was the issue of late payments, with all interviewees mentioning it and the discussion often focussing on it. Many farmers have had to wait years to get their payments. Not only did this put them off reapplying for AE schemes but was also seen as a main deterrent to their peers who were considering applying for AE schemes.

There were contradictory opinions on the level of payment for AE scheme options. Many of the English interviewees considered that the payments for most arable AE schemes options were fair, which we considered a success factor for payments. However, there were also many who felt that the current payments did not cover enough of the cost of implementation and maintenance of options. One possible reason given for this was that the level of commodity prices used for these calculations did not reflect the commodity prices available to farmers who were putting in these AE scheme options. The implication was that commodity prices were, at the time farmers were receiving the payments, actually higher than the ones that had been used for calculating the cost of AE scheme options. Considering predicted declines in the level of subsidies paid to farmers following Brexit, this perception was considered by many interviewees to be more widely applicable post-Brexit. Upland farmers were considered by many to be most vulnerable to abandoning their farms (especially post-Brexit) and higher AE scheme payments could encourage them to continue farming. It is interesting that we did not interview upland farmers in particular but that this was acknowledged both by farmers who were interviewed and by stakeholders.

One other issue raised by several interviewees was the need for the government to continue payments for the facilitators of farmer clusters, with a general belief in the importance of funding farmer clusters from the facilitation fund or a similar monetary instrument in the future.

Suggestions

There was a suggestion that AE schemes need more than just income foregone for the best results, with more consideration given to the costs for implementation and maintenance of options. This

would ensure the best performance from those farmers implementing AE schemes. There was also a desire for AE scheme payments directed towards collaboration (*i.e.* farmer clusters or similar) and towards public engagement (i.e. open farm Sunday or similar).

Several alternative payment systems were considered by the English interviewees. These included some form of payment by results, though often people thought this would be difficult to measure and possibly difficult to budget for, both by farmers and the government. Another possibility suggested by some interviewees was some form of competitive payments – an example was the Australian system where farmers offered up what they were prepared to do for agri-environment and the costs associated with it and the best value bids won the funding to do this. There was also a perception that those undertaking AE schemes should be paid more for providing more of the "public good" – so those who produced more birds etc. should be given more money. Interviewees did acknowledge that there could be problems measuring this "public good" and that it could be difficult for the government to budget for this. Several interviewees suggested that payments should vary depending on either soil type or locations. For instance, many considered that the uplands had a need for additional payments to ensure the continuation of low intensity grazing on these areas and avoid farm abandonment, thus ensuring continued support for species reliant on this type of management. There was also the suggestion that payments should go entirely and perhaps be replaced by a either a cross-compliance based system through subsidies or even relying on farmers to provide conservation benefits through individual interest, *i.e.* give up on the idea of AE schemes paid by the government. This was however, not a widely held opinion amongst the interviewees.

Motivation and Trust

Successes:	Pitfalls:
• Most farmers interviewed felt they had a major role in conserving the countryside. • Grey partridges were seen as a motivation for conservation. • Green issues are seen as more important by younger farmers.	• *"You can't be green if you're in the red".* • Some felt isolated and that they were a minority. • Fear - struck by the level of fear and anxiety. • Bad experiences they had with inspections. • Lack of trust. • Belief that rules and regulations kept changing. • No access to a trusted NE Advisor. • Unwanted environmental designation.
Suggestions for improvement:	
• Provide incentives to match motivations, some motivated by money, others by an interest in conservation. • Higher payments does not justify more bureaucracy. • Good environmental advice – either quality advice from government or funding for private advisors. • Emphasise commercial benefits of AE scheme options – pest control, minimum tillage, soil health, buffer zones.	

Successes

The discussion of motivation and trust highlighted several successes of the AE schemes system in England. Many farmers were proud of the environmental good that they provide through AE schemes and other means. Most of the farmers interviewed felt that they had a major role in conserving the countryside and those involved in AE schemes felt that it had led to them being more environmentally aware. Several famers with AE schemes felt that there was friendly competition between their neighbours and the AE scheme measures or wildlife that they have on their land – leading to a general increase in the desire to produce more biodiversity. Some spoke of an interest in grey partridge conservation specifically. They felt that grey partridge conservation is helped by its gamebird status. Many felt that farmers are more motivated to put in AE scheme measures directed at grey partridges specifically – for example beetle banks, cover strips and supplementary feeding. There was a general positive view of new, young farmers. Many interviewees felt that green issues are seen as more important by younger farmers, this was likely to be especially so post-Brexit, and younger farmers were considered to have a more holistic view of farming and a greater desire to work with nature as opposed to against nature. Interviewees thought younger farmers were more educated about AE schemes and were likely to be more engaged and involved with AE schemes.

Pitfalls

Perhaps the most common overarching comment we recorded regarding motivation pitfalls was "You can't be green if you're in the red". Many participants pointed out the importance for farmers' businesses to be on a strong economic footing so that they had the ability to involve themselves in conservation.

Beyond this there were a few prominent pitfalls with motivation highlighted by interviewees. We consider them here firstly where farmers criticised the motivation of other farmers or had comments to make about their own motivation versus what they saw as "other people's"

motivation. We then consider two types of motivation, or perhaps de-motivation, that came through most strongly in our interviews – fear and lack of trust.

Views on others

Some farmers felt isolated and thought they were a minority that cared for the environment while "everyone else" was in it for the money. This was also reflected by a dichotomy in how farmers saw themselves; some thought that an emphasis on food production was old fashioned while others argued that their job was to farm, not be "park wardens". Between these two extremes was a range in how farmers in our interviews viewed their role in society and may go some way to explaining why some individual farmers involve themselves in AE schemes and conservation and some do not. Some farmers said they liked their autonomy and therefore would not really want to enrol in AE schemes but would do their own conservation work. Some farmers had felt pressured to join a farmer cluster; this type of coercive motivation was considered counterproductive. Some expressed negative comments concerning land managers who released a lot of birds for shooting, that it damaged the environment and increased the number of generalist predators in the area, as well as putting shooting in a negative light. There were mixed views on rewilding from both farmers and stakeholders, with one farmer seeing this as "failed farming" whilst another was interested in incorporating elements of this into their own farm.

Fear

Interviewers were struck by the level of fear and anxiety expressed by many farmers when discussing inspections and bureaucracy. All interviewed farmers explicitly mentioned bad experiences they had with inspections or reported that someone they knew personally had suffered. There was a feeling that these inspections were not randomly assigned but that those who had more AE scheme options were more likely to be inspected and that these inspections were happening to those with more AE schemes more frequently. The behaviour, motivation, and level of knowledge of inspectors was questioned by most farmers interviewed, with some suggesting that inspectors were tasked with finding mistakes in implementation. Farmers that were inspected thought there was very little allowance for in-field discrepancies. The length of time between inspections and report filing was considered overly long, meaning that farmers did not have the ability to put things right when discrepancies were found. The level of bureaucracy in these inspections and in other areas associated with AE schemes meant that farmers felt pushed into choosing options that were less complex versus those that provide for more effective support of biodiversity but were difficult to manage. Problems with inspections, the fear of inspections and the level of bureaucracy associated with them was the main reason farmers gave for not taking up AE schemes and for thinking that they might not take AE schemes up in the future. There was one bright spot in these generally negative opinions about inspections – although farmers were very negative about the RPA (the body that runs the inspections) they did hope that RPA would succeed in processing payments still owed to farmers – which does now seem to be the case.

Lack of Trust:

The other negative issue with motivation for farmers to enter AE schemes was a lack of trust, likely related to issues of fear. This lack of trust was thought to apply from both the farming and the government side. Farmers did not trust the government and mentioned three reasons for this. Firstly, there was a belief that the rules and regulations regarding AE schemes kept changing (this may reflect changes in schemes rather than options and a desire by many of those interviewed to have an AE scheme system similar to the ELS/HLS schemes in the early 2000s). Secondly, many farmers felt that they did not have access to a trusted Natural England Advisor and lastly, they were worried about receiving an unwanted environmental designation – for example, becoming a Site of

Special Scientific Interest (SSSI). On the governmental side, farmers interpreted frequent and inflexible inspections as an indication that the government did not trust farmers. As a group, farmers were sceptical about undertaking monitoring themselves – they did not think that this was fair and verifiable so the issues to do with inspections should not be interpreted as farmers wanting to do away with them entirely.

Looking forward there was some trepidation regarding Brexit. Many felt uncertainty regarding how Brexit was going to play out and this was negatively affecting AE scheme uptake as well as affecting other forward planning. Some farmers and stakeholders were concerned with future trade agreements (or the lack of them) and the effects this will have on landscapes, wildlife, and farming. Most felt that livestock farmers were particularly vulnerable to this.

Suggestions

There were several suggestions regarding motivations, two of which could really be considered warnings. It is important to provide incentives to match all the different motivations – some participants will be motivated by money, others more by biodiversity. The incentives provided need to reflect this. However, there was also a warning that extra payments or higher payments will not justify higher levels of bureaucracy – and that more bureaucracy will lead to fewer farmers taking up AE schemes.

The importance of good environmental advice was emphasised by many farmers and stakeholders, with several farmers suggesting that the government should either provide environmental advice directly – often harking back to the days of MAFF (Ministry of Agriculture, Fisheries and Food) – or provide funding for farmers to access private advisors. Lastly, several farmers suggested that the commercial benefits of AE scheme options should be emphasised – examples were integrated pest control, minimum tillage, soil health, buffer zones. This would help scheme uptake and encourage farmers to up their game in option provision.

Discussion

The opinions expressed by the interviewees in our survey reflect the findings of previous research on the factors that influence the uptake and implementation of agri-environmental schemes, and agricultural land use change in the UK (Franks et al., 2016; Ingram et al., 2013; Raymond et al., 2016; Riley 2016; Wildlife and Countryside Link. 2019), and more broadly across the EU (Cullen et al, 2020; Brown et al., 2019; de Krom, 2017; Lastra-Bravo et al., 2015; van Vliet et al., 2015; Pavlis et al., 2016; Zimmermann & Britz, 2016) and the world (Burton, 2014). We try to put these into perspective below, with recommendations on how pitfalls can be addressed, and suggestions taken forward, building on any successes identified in our survey and supported by published research.

Farmer Characteristics

Our interviewees mirrored the finding of recent surveys and reviews on which farmers do or do not participate in AE schemes and the characteristics of their farms, reflecting the generally accepted picture of a farmer involved in AE schemes (Brown et al., 2019). Many surveys of AE scheme uptake have concentrated on how farmer demographics and other inherent characteristics of farmers affect uptake and motivation and there were some broad themes identified across Europe and the UK. In our discussions, younger farmers, with more formal education were considered to be more likely to take up schemes and that has been generally borne out in surveys of uptake (Brown et al., 2019; Burton, 2014; Pavlis et al., 2016;). There are two counterpoints to this, both brought up by our interviewees. One is in cases where older farmers, particularly those without a designated successor, join long-term schemes, designed to provide funding for habitats that require little management as they near retirement and start to prepare for retirement - although the reverse can also apply, where older farmers with a successor are less likely to join AE schemes, understood to reflect their wish not to tie the hands of their successor with an unwanted agreement (reviewed and discussed in Brown et al., 2019; Burton, 2014; Lastro-Bravo et al., 2015, van Vliet et al., 2015). The other counterpoint is the generally accepted premise across all our interviewees that farmers with more experience of agri-environmental schemes in the past were more likely to take up new schemes. This is something that many other researchers have highlighted – the importance of farmer experience in taking up schemes and instigating options that are considered to have the most environmental benefit but are often more difficult to implement (Brown et al., 2019; Riley, 2016;). This can be due to their experience in establishing AE scheme options or in the interaction that these farmers have had with advisors and other experts during the process of being involved in a scheme, with the result being better selection of more effective agri-environment options (Hejnowicz, Rudd & White, 2016; Lobley et al., 2013). Our interviewees also felt that increased farmer experience of AE schemes resulted in more public goods from these experienced farmers, though the support for this in published papers is less well researched and would be worth exploring further.

Farm Characteristics

The size of farm holding has been shown to affect AE scheme uptake in some surveys; in most cases farmers with larger farms were found to be more likely to take up AE schemes (Brown et al., 2019; Pavlis et al., 2016; Siebert et al., 2006; Zimmermann & Britz, 2016). This did not come up as a point of discussion with our interviewees. A possibly related point of the profitability of each farm did arise and was summed up by one farmer who said “You can’t be green if you are in the red.” This indicates the perception that being a prosperous farming enterprise, possibly related to size of that operation, provides a farm the opportunity to undertake more nature-friendly farming, and there is support for this in the published literature, where high fixed costs are seen as a barrier to enrolling in AE schemes (Brown et al., 2019; Ducos, Bupraz & Bonnieux, 2009; Siebert et al., 2006; Wildlife and Countryside Link. 2019). There is also evidence that involvement in an AE scheme is related to more

stable farm income levels on dairy, general cropping, and mixed farms (Harkness et al., 2021). There was some discussion in our interviews of how schemes with longer time frames might possibly be more attractive to farmers in the English uplands and this may reflect the findings of other researchers for farming in more "remote" areas. Other research has shown that geographic areas of high-nature value farmland, coinciding with less intensive agricultural practices had, in some instances, higher uptake of subsidies designed to support this low intensive farming (Brown et al., 2019). There seemed to be little interest in our interviewees in this type of option personally. This is perhaps not surprising as all the farmers we interviewed were in the lowlands – our research reflected the PARTRIDGE project itself, which is working on restoring biodiversity on lowland arable farmland – although several were within either a National Park or an Area of Outstanding Natural Beauty.

Scheme Management

Negative opinions of AE schemes coalesced around farmers' perceptions of how AE schemes are managed and monitored, as well as dissatisfaction with payment delays (not in the level of payment per se) – reflecting the extreme lack of trust in the government's management of agri-environmental schemes at the time of the interviews. Comments regarding management and monitoring reflect a view that this is done in a top down, prescriptive, often bureaucratic manner which has been reported in other surveys (Arnott et al., 2019; Wildlife and Countryside Link. 2019). Inspectors were considered badly informed and inspections onerous – this should not be taken as farmers not seeing the need for some inspections, but there was a feeling that these are not designed to get the best out of the schemes but are instead a form ticking exercise designed to catch farmers out. There was also a negative view of over officious documentation that failed to practically explain AE schemes options and their management, with little evidence of governmental appreciation of farmers agronomic ability – illustrated by adherence to calendar dates for planting etc. that were often rendered unworkable due to weather conditions, reflecting several of the issues raised in surveys of advisors (Hejnowicz, Rudd & White, 2016). The level of payments for options did not appear to be a big concern for most of our interviewees – although some consideration of changes in the price of commodities needs to be considered, as increasing prices paid for crops will affect the attractiveness of AE schemes options. Raymond et al. (2016) ascribed a preference for earlier AE schemes (ELS & HLS pre-2008) as reflecting the better payments available in these; we did find that our interviewees preferred the ELS/HLS system – though that seemed to be related to option availability and the timing of when they could apply to these schemes (year-round versus limited time for applications) more than payment levels. The appreciation for the earlier ELS/HLs system seemed to reflect the view held by some that ELS agreements were a steppingstone by some farmers to learn more about the AE scheme process and move to HLS agreements that required more work and management but provided more for the environment. This fits with a belief that those farmers who have had AE scheme agreements previously are better at managing them and at getting the best from them for biodiversity and that famers with an interest in the environment are more likely to take up AE schemes (Dessart et al., 2019). What was mentioned by many was the, at the time, late payments for AE schemes (late 2018, early 2019). This appeared to contribute a great deal to the feeling that Countryside Stewardship (CS) had been mis-managed by Natural England (NE), with an appreciation that the government had failed to provide the monetary resources needed by NE. Similar findings were identified in 2014 by Raymond et al. (2016), with their survey and ours really reflecting similar findings on these topics, in spite of the changes that had taken place during the intervening years. These include a change in AE schemes and, just before our interviews, the transfer of the administration of Countryside Stewardship (CS) and Environmental Stewardship (ES) to the Rural Payments Agency in 2018, in a move to provide a "more efficient and joined up service" (https://deframedia.blog.gov.uk/2018/03/09/friday-9-march-disposable-coffee-cups/; House of Commons Environment, Food and Rural Affairs Committee, 2018). More recently there have been moves by DEFRA to further improve the process of application, inspection and payments

(https://defrafarming.blog.gov.uk/2021/03/09/improvements-to-countryside-stewardship/ https://defrafarming.blog.gov.uk/2021/04/06/our-work-to-improve-inspections-and-make-penalties-proportionate/). It does remain to be seen if these efforts will address the over-riding negative perceptions that we and others have documented.

Advice and Demonstration

We recorded a need for practical demonstration and advice, highlighted by both farmers and stakeholders, with training and proper compensation needed for top-quality advisors who are considered to provide the necessary support to get the best out of AE schemes as well as farmers themselves. The importance of experienced and trusted advisors has been highlighted by several surveys of both farmers and advisors, who are seen as environmental knowledge brokers (Brown et al., 2019; Hejnowicz, Rudd & White, 2016; Ruto & Garrod, 2009). Many farmers and stakeholders we interviewed considered that an emphasis was needed on AE scheme options that had proven ecological benefits and that there was a need to provide the scientific basis for this – with the access to professional advisors and experts who could interpret that science and provide training to farmers (Lobley et al., 2013), supporting conclusions made by other authors (Brown et al., 2021). Our interviewees thought that farmers could then better understand the goal of these options and ensure that their management of that option worked to deliver that goal. This need for a better understanding of the ecological benefits of options and how to achieve them fits with an understanding that farmers with AE scheme experience are more likely to undertake complicated AE schemes options and consequently provide better ecological benefits. It also fits with changes in how farmers view what is 'good farming' and related 'knowledge cultures' and how that might be affected through their long-term participation in AE schemes (Riley, 2016) and interactions with conservation officers or advisors. Our findings agree with those that highlight the importance of the social capital of farmers involved in AE schemes – though in not so many words. Bourdieusian-inspired ideas of the cultural construct of 'good farming' and 'knowledge cultures' combined with long-term participation in AE schemes helps to shape what farmers see as good farming. The interactions with conservation officers or advisors are important in changing how more production-oriented farmers perceive AE schemes and those involved in them, as well as ensuring the best outcome from these schemes (Riley, 2016).

Farmer Clusters

Facilitation funding – i.e. Farmer Clusters, began in the UK in 2015, as part of Countryside Stewardship (https://www.gov.uk/government/collections/countryside-stewardship-facilitation-funding). It was designed to work at the landscape scale and encourages cooperation between farmers enabled by a designated advisor and those we interviewed considered it by and large a successful development, a finding supported by others (Wildlife and Countryside Link. 2019). Our interviewees considered farmer clusters a useful way to educate and inform the public, as well as farmers, of the importance of conservation in modern farming. Many of our participants mentioned that one of the best most useful aspects of being in a Farmer Cluster was the training provided by on the ground access to experts – whose knowledge in how to get the best out of AE options was highly valued (Lobley et al., 2013). Earlier research on collaborative working by farmers had found that collaborative or collective schemes can have an added value in supporting environmentally positive management in the Netherlands (van Dijk et al., 2015). In the UK, McKenzie et al. (2013) found that farmers supported some sorts of collaborative AE schemes in the UK, with farmers already involved in AE schemes willing to provide more options. Other researchers have reported some reluctance to this cooperation in the UK (Franks et al., 2016; Riley et al., 2018). Our interviewees suggestions for communication and knowledge exchange effectively describe the success factors associated with Farmer Clusters; this suggests that the design of Farmer Clusters with the Facilitation Fund went some way to addressing the issues identified with person-to-person communication and knowledge exchange identified by Franks et al. (2016) and an emphasis on individual based land management

(Riley et al., 2018). A choice experiment in Germany, Switzerland and Spain indicated that resistance to coordinated schemes could be overcome with monetary and social incentives (Villamoyor-Tomas, Sagebiel & Olschewski, 2019). Several of our interviewees also mentioned that farmer clusters can encourage neighbours to support one another and enhance the welfare of the farmers in the farmer clusters, similar to previous findings that found a positive effect on the wellbeing of farmers due to their involvement in an AE scheme, the North Yorkshire Cornfield Flowers Project (Saxby et al., 2017). Our interviewees viewed farmer clusters in a favourable light. It is important that the English government continues to provide support for farmer clusters going forward; research has shown that social capital development is key in collaborative approaches to AE scheme provision, particularly the establishment and maintenance of trust and processes, with a promise of further social and rural development benefits from coordinating AE schemes at a landscape scale (Kuhfuss et al., 2019). Improvements to the regulations covering the Facilitation Fund, which aim to help develop the landscape-scale aspects of the AE options and increase the payments available (as well as other revisions), could ensure that the next generation of AE schemes builds on the successes seen so far with Farmer Clusters (Franks, 2019).

Brexit

The subject that was responsible for the greatest level of anxiety in the farmers and stakeholders we interviewed was BREXIT. The opinions expressed in our small sample of farmers and stakeholders in 2018/19 were markedly similar to those found in 2014 by Raymond et al. (2016), as was the case in the survey undertaken by Wildlife and Countryside Link (2019). Though there have been changes in governmental support for farming over the past couple of decades (cross-compliance, moves to unlink subsidy payments with production) that helped to facilitate a change in what is considered a "good farmer and good farming", these have been gradual. The biggest change to date is now upon the farmers of the UK – BREXIT. The UK government will start to limit monetary support to Pillar II activities, with a gradual unwinding of Pillar I support from now (2021). The UK government's plans for agriculture and support for farmers in the future is starting to be fleshed out (Defra, 2020a) and we are beginning to see how these plans will materially affect farmers (Defra, 2020b). Central to the development of these plans is an emphasis on co-design of agricultural policy and support (McKercher, 2020). This is an approach that actively involves all stakeholders (in this case farmers, researchers, advisors, etc.) in the design process and fulfils recommendations for farmer involvement in the development of farm policy to support environmentally beneficial farming practices (Brown et al., 2021). Key to success is ensuring that the knowledge and experience of farmers, advisors, researchers, and other stakeholders is valued and fully contributes to the changes in AE schemes post-BREXIT. The use of a co-design approach should help to address some of the anxiety we recorded, with an emphasis on being part of the change (McKercher, 2020). This report and the results of the subsequent large survey that began in March of 2021 will be fed into this process.

Acknowledgements

We thank all those who answered our questions; this work was only possible due to their patience and generosity in giving up several hours of their time. It is very much appreciated. Jess Brooks (GWCT) undertook many of the interviews with good grace and humour – thank you for helping us with this work. Thank you to the rest of the PARTRIDGE WP5 team for helpful discussions, especially Nel Ghyselinck, Frans van Alebeek, Jules Bos, Lisa Dumpe, Frank Stubbe and Fiona Torrance. At the GWCT, Cameron Hubbard, Alastair Leake, Jen Brewin and James Swyer very kindly proofread this document; all remaining mistakes are the responsibility of the authors.

References

Arnott, D., Chadwick, D., Wynne-Jones, S. & Jones, D.L. 2019. Vulnerability of British farms to post-Brexit subsidy removal, and implications for intensification, extensification and land sparing. *Land Use Policy*, [104154]. https://doi.org/10.1016/j.landusepol.2019.104154.

Batáry, P., Dicks, L.V., Kleijn, D. & Sutherland, W.J. 2015. The role of agri-environment schemes in conservation and environmental management. *Conservation Biology*, 29: 1006-1016. https://doi.org/10.1111/cobi.12536.

Brewin, J., Buner, F.D. & Ewald, J.A. (2020). Farming with nature - promoting biodiversity across Europe through partridge conservation. Gottschalk, E., Bos, J., van Alebeek, F., Scheppers, T., Vanhuyse, K., Parish, D.M.B. & Aebischer, N.J. (eds). The Game & Wildlife Conservation Trust, Fordingbridge, UK. 104pp. ISBN number: 978-1-901369-38-0, https://northsearegion.eu/partridge/.

Bright, J.A., Morris, A.J., Field, R.H., Cooke, A.I., Grice, P.V., Walker, L.K., Fern, J. & Peach, W.J. 2015. Higher-tier agri-environment scheme enhances breeding densities of some priority farmland birds in England. *Agriculture, Ecosystems & Environment*, 203: 69-79. https://doi.org/10.1016/j.agee.2015.01.021.

Brown, C., Kovacs, E.K., Zinngrebe, Y., Albizua, A., Galanaki, A., Grammatikopoulou, I., Herzon, I., Marquardt, D., McCracken, D., Olsson, J. & Villamayor-Tomas, S. 2019. Understanding farmer uptake of measures that support biodiversity and ecosystem services in the Common Agricultural Policy (CAP). Report prepared by an EKLIPSE Expert Working Group. Centre for Ecology & Hydrology, Wallingford, United Kingdom, 60 pp.

Brown, C., Kovacs, E., Herzon, I., Villamayor-Tomas, S., Albizua, A., Galanaki, A., Grammatikopoulou, I., McCracken, D., Olsson, J. & Zinngrebe, Y. 2021. Simplistic understandings of farmer motivations could undermine the environmental potential of the Common Agricultural Policy. *Land Use Policy*, 101: 105136 https://doi.org/10.1016/j.landusepol.2020.105136.

Burton, R.J.F. 2014. The influence of farmer demographic characteristics on environmental behaviour: A review. *Journal of Environmental Management*, 135(Supplement C): 19-26.

Campaign for the Farmed Environment (CFE) 2013. Campaign for the Farmed Environment - Final Report on the first phase 2009-2012. https://www.cfeonline.org.uk/cfe-phase-1-final-report-25may2013/.

Cullen, P., Ryan, M., O'Donoghue, C., Hynes, S., hUallacháin, D.Ó. & Sheridan, H. 2020. Impact of farmer self-identity and attitudes on participation in agri-environment schemes. *Land Use Policy*, 95:104660.

DEFRA. 2020a. Farming is Changing. Published October 2020 by the Future Farming and Countryside Programme communications team. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/939683/farming-changing.pdf.

DEFRA. 2020b. The Path to Sustainable Farming: An Agricultural Transition Plan 2021 to 2024. Department for Environment Food & Rural Affairs, policy paper, published November 2020. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/954283/agricultural-transition-plan.pdf.

de Krom, M. P. M. M. 2017. Farmer participation in agri-environmental schemes: Regionalisation and the role of bridging social capital. *Land Use Policy*, 60: 352–361. doi:10.1016/j.landusepol.2016.10.026.

De Snoo, G.R., Herzon, I., Staats, H., Burton, R.J., Schindler, S., van Dijk, J. & Schwarz, G. 2013. Toward effective nature conservation on farmland: making farmers matter. *Conservation Letters*, 6: 66–72.

Dessart, F.J., Barreiro-Hurl´e, J. & van Bavel, R., 2019. Behavioural factors affecting the adoption of sustainable farming practices: a policy-oriented review. *European Review of Agricultural Economics*, 46: 417–471. https://doi.org/10.1093/erae/jbz019.

Ducos, G., Dupraz, P. & Bonnieux, F. 2009. Agri-environment contract adoption under fixed and variable compliance costs. *Journal of Environmental Planning and Management*, 52: 669-687.

Ewald, J.A., Aebischer, N.J., Richardson, S.M., Grice, P.V. & Cooke, A.I. 2010. The effect of agri-environment schemes on grey partridges at the farm level in England. *Agriculture, Ecosystems and Environment*, 138: 55-63. https://doi.org/10.1016/j.agee.2010.03.018.

Franks, J.R. 2019. An assessment of the landscape-scale dimensions of land based environmental management schemes offered to farmers in England. *Land Use Policy 2019*, 83: 147–159, https://doi.org/10.1016/j.landusepol.2019.01.044.

Franks, J., Emery, S., Whittingham, M. & McKenzie, A. 2016. Farmer attitudes to crossholding agri-environment schemes and their implications for Countryside Stewardship. *International Journal of Agricultural Management*, 5: 78–95.

Harkness, C., Areal, F.J., Semenov, M.A., Senapati, N., Shield, I.F. & Bishop, J. 2021. Stability of farm income: The role of agricultural diversity and agri-environment scheme payments, *Agricultural Systems*, 187:103009, https://doi.org/10.1016/j.agsy.2020.103009.

Hejnowicz, A.P., Rudd, N.A. & White, P.L.C. 2016. A survey exploring private farm advisor perspectives of agri-environment schemes: the case of England's environmental stewardship programme. *Land Use Policy,* 55: 240–256.

House of Commons Environment, Food and Rural Affairs Committee. 2018. Performance of the Rural Payments Agency, HC 887. The Environment, Food and Rural Affairs Committee.

Ingram, J., Gaskell, P., Mills, J. & Short, C. 2013. Incorporating agri-environment schemes into farm development pathways: A temporal analysis of farmer motivations. *Land Use Policy*, 31: 267–279. http://dx.doi.org/10.1016/j.landusepol.2012.07.007

Kleijn, D., Bommarco, R., Fijen, T.P.M., Garibaldi, L.A., Potts, S.G. & van der Putten, W.H. 2019. Ecological intensification: bridging the gap between science and practice. *Trends in Ecology and Evolution*, 34: 154–166. https://doi.org/10.1016/j.tree.2018.11.002.

Kuhfuss, L., Begg, G., Flanigan, S., Hawes, C. & Piras, S. 2019. Should agri-environmental schemes aim at coordinating farmers' pro-environmental practices? A review of the literature. Paper prepared for presentation at the 172nd EAAE Seminar 'Agricultural policy for the environment or environmental policy for agriculture?' Brussels, Belgium. https://ageconsearch.umn.edu/record/289774/files/Kuhfuss-Should%20agri-environmental%20schemes%20aim%20at%20coordinating%20farmers%27%20pro-environmental%20practices_a.pdf .

Lastra-Bravo, X.B., Hubbard, C., Garrod, G. & Tolón-Becerra, A. 2015. What drives farmers' participation in EU agri-environmental schemes? Results from a qualitative meta-analysis. *Environmental Science & Policy*, 54: 1-9. https://doi.org/10.1016/j.envsci.2015.06.002.

Lobley, M., Saratsi, E., Winter, M. & Bullock, J. 2013. Training farmers in agri-environmental management: the case of Environmental Stewardship in lowland England. *International Journal of Agricultural Management*, 3: 12-30. doi:10.5836/ijam/2013-01-03.

McKenzie, A.J., Emery, S.B., Franks, J.R. & Whittingham, M.J. 2013. FORUM: Landscape-scale conservation: Collaborative agri-environment schemes could benefit both biodiversity and ecosystem services, but will farmers be willing to participate? *Journal of Applied Ecology*, 50: 1274–1280. https://doi.org/10.1111/1365-2664.12122.

McKercher, K.A. 2020. Beyond Sticky Notes. Doing Co-design for real: mindsets, methods and movements. Sydney, Australia: Beyond Sticky Notes, 227 pp.

Pavlis, E.S., Terkenli, T.S., Kristensen, S.B.P., Busck, A.G. & Cosor, G.L. 2016. Patterns of agri-environmental scheme participation in Europe: indicative trends from selected case studies. *Land Use Policy*, 57: 800–812. http://doi.org/10.1016/j.landusepol.2015.09.024.

Raymond, C.M., Bieling, C., Fagerholm, N., Martin-Lopez, B. & Plieninger, T. 2016. The farmer as a landscape steward: Comparing local understandings of landscape stewardship, landscape values, and land management actions. *Ambio,* 45: 173–184. https://doi.org/10.1007/s13280-015-0694-0.

Riley, M. 2016. How does longer term participation in agri-environment schemes [re]shape farmers' environmental dispositions and identities? *Land Use Policy,* 52: 62–75.

Riley, M., Sangster, H., Smith, H., Chiverrell, R. & Boyle, J. 2018. Will farmers work together for conservation? The potential limits of farmers' cooperation in agri- environment measures. *Land Use Policy*, 70: 635–646. https://doi.org/10.1016/j. landusepol.2017.10.049.

Ruto, E. & Garrod, G. 2009. Investigating farmers' preferences for the design of agri-environment schemes: a choice experiment approach. *Journal of Environmental Planning and Management*, 52: 631–647. https://doi.org/10.1080/09640560902958172.

Saxby H., Gkartzios, M. & Scott, K. 2017. 'Farming on the Edge': Wellbeing and Participation in Agri-Environmental Schemes. *Sociologia Ruralis* 58: 392–411. doi:10.1111/soru.12180

Siebert, R., Toogood, M. & Knierim, A. 2006. Factors affecting European farmers' participation in biodiversity policies. *Sociologia Ruralis*, 46: 318–340. doi:10.1111/j.1467-9523.2006.00420.x.

Van Dijk, W. F. A., Marike, A., Berendse, F. & De Snoo, G. R. 2015. Land use policy collective agri-environment schemes: How can regional environmental cooperatives enhance farmers' intentions for agri-environment schemes? *Land Use Policy*,42: 759–766. doi:10.1016/j.landusepol.2014.10.005.

van Vliet, J., de Groot, H.L.F., Rietveld, P. & Verburg, P.H. 2015. Manifestations and underlying drivers of agricultural land use change in Europe. *Landscape and Urban Planning*, 133: 24-36.

Villamayor-Tomas, S., Sagebiel, J. & Olschewski, R.2019. Bringing the neighbors in: a choice experiment on the influence of coordination and social norms on farmers' willingness to accept agro-environmental schemes across Europe. *Land Use Policy*, 84: 200-215. https://doi.org/10.1016/j.landusepol.2019.03.006

Walker, L.K., Morris, A.J., Cristinacce, A., Dadam, D., Grice, P.V. & Peach, W.J. 2018, Effects of higher-tier agri-environment scheme on the abundance of priority farmland birds. *Animal Conservation*, 21: 183-192. https://doi.org/10.1111/acv.12386.

Wildlife and Countryside Link. 2019. Putting all our eggs in one basket: A Survey of English Farmers' Opinions on Agriculture Policy.
https://www.wcl.org.uk/docs/WCL_Farmer_Survey_Report_Jun19FINAL.pdf

Zimmermann, A. & W. Britz. 2016. European farms' participation in agri-environmental measures. *Land Use Policy*, 50: 214–228.

Appendix 1: Interview Questions

1. **What role do you see for farmers in the conservation of wildlife and landscape?**
    - If negative, ask, at the end of the interview, what they think can motivate farmers to take up an AE schemes for farmland wildlife.

2. **Can you describe your background knowledge about agri-environment options for arable farmland wildlife?**

Some questions about the system of AE schemes for farmland wildlife

3. **What do you think about the current governmental system of providing AE schemes for arable farmland wildlife?**
    - If positive, why?
    - If negative, why?
        - What would you change?

4. **Do you think that the agri-environmental options available for arable farmland wildlife are suitable?**
    - Are there others that would be useful?
    - What do you think about the flexibility of those options, for example considering local conditions?
    - What about the length of agreements, particularly as regards certain AE schemes options?

5. **Do you think the AE schemes for arable farmland birds are effective in improving the quality of habitat for wildlife?**
    - If yes, in which way?
    - Do you think the AE schemes, as they currently exist, are the best way to help farmland wildlife?
    - If not, why not?
    - Any improvements

6. **How do you think we can improve the uptake of AE schemes for arable farmland wildlife?**
    - Do you think working with groups of farmers for example in a "farmer collective" or "farmer cluster" would help?
    - Do think more ownership/more involvement/more visibility of the farmers work would help?
    - Do you think less controls would help? – fewer inspections/common sense applied – Allerton inspected 3 in 5, pond measured when full vs empty, awaiting report/payment

Now some questions about the remuneration of AE schemes farmland wildlife

7. **What do you think about the payments that farmers receive for AE schemes for arable farmland wildlife? Is the amount sufficient?**
    - If yes, why?
    - If no, why not and what would be enough?
8. **In your opinion, how should the remuneration be calculated? Which aspects are important to consider in the remuneration of AE schemes for arable farmland wildlife?**
    - For example, is the scale if AE schemes that the farmer provides important in considerations?
    - Should there be national or regional remuneration levels?
    - Should regional or other differences be considered when calculating remuneration (for example soil type)?

9. **Do you think it is necessary to look for an alternative payment system for AE schemes for arable farmland wildlife?**
    - For example, do you think the remuneration should be based on the "wildlife or biodiversity results" rather than the provision of habitat by farmers?
    - Other considerations

Some questions about the way the AE schemes for farmland wildlife are managed and provided by farmers.

10. **Is the guidance on establishment and management of AE schemes for arable farmland wildlife appropriate?**
    - Is there enough advice available? For example, to help farmers making a choice of the best AE schemes options? How to implement these for best advantage?
    - Is there enough of follow-up to help with management of AE schemes?
    - Are there shortcomings in the advice on how to manage AE schemes options, for example, in how AE schemes are established and managed on the field?
11. **Is the monitoring of AE schemes for arable farmland wildlife appropriate?**
    - What's your opinion on the outcome for wildlife?
    - Do you think that AE schemes work?
    - What's your opinion on the governmental monitoring and control of the AE schemes?

Final question

12. **Do you have any other ideas, suggestions or opinions you would like to share? For example, for government or nature conservation groups?**
    - Thing they think that can help to motivate farmers to implement agri-environment for farmland wildlife?
    - Keep farmers involved?
    - Keep the government and public purse involved?
    - After Brexit?

Appendix 2: Codes used for QDA Miner.

A. Codes for Knowledge and Communication.

KC Knowledge and communication	
Definitive code	Explanation/when to use/when not to use
KC Of farmer on AE schemes	Knowledge of farmer on AE schemes Use: to do with knowledge, e.g. the farmers knows the AE schemes help in creating a good habitat for partridges
KC Of hunter on AE schemes	Knowledge of hunters on AE schemes Use: to do with knowledge, e.g. the hunter knows the seed mixes of the AE schemes help in attracting wildlife
KC On AE schemes	Communication to/between farmers/hunters on AE schemes Use: emphasis on communication, not knowledge, every aspect of communication to or between farmers/hunters about AE schemes, education, promotion e.g. In the farmer organization, where I'm a member, we recently had a discussion on AE schemes
KC Farm clusters	Communication/sharing information in farm clusters e.g. in the UK, farmers in a farmer cluster can access more information than they could otherwise
KC Environment	Knowledge of farmer/hunter on the environment he works in Use: all kinds of relevant information the respondent gives on nature, weed, soil, predation, this subtheme tells us something on how the respondent looks to his environment e.g. protection of certain species is important but also predation control e.g. he is in favor of regularly mowing of the weed
KC Public	Knowledge/communication of the public on AE schemes and how it is used to influence the respondent Use: all kind of relevant information to do with what the others (public) think e.g. neighbors ask the respondent why he doesn't sow any flower blocks
KC Advisor	Communication/knowledge livered by an advisor e.g. info of VLM or a farmer advisor
KC Trusted resource	Communication/knowledge delivered by someone/something they trust e.g. AE schemes recommended by a friend, a colleague
KC Communication of effort	Communication/knowledge of a success stories e.g. I went to a demonstration of the EU PARTRIDGE project and they told wildlife doubled in the area
KC Teamwork	Communication/knowing the working on habitat with AE schemes is a team effort e.g. use when your respondent tells you about the fact that creating a good habitat for wildlife is something he can't do on his own, they will have to work together with others

B. Codes for Policy

P Policy	
DEF CODE	Explanation/when to use/when not to use
P Time cycle	Use: policy aspects to do with the time aspect of AE schemes, e.g. duration of the contract
P Control/penalties	Use: policy aspect to do with the control, auditing, inspections and consequence of the control (penalties)
P Bureaucracy	Use: policy aspect to do with administration, the complexity of the rules, not easy to change the rules, Don't use for aspects to do with the way AE schemes is organized in your country, they belong to "P Organization"
P Possible/practical to execute by farmers	Use: policy aspects of the AE schemes measures to do with the execution of them, are the measures practical to execute? Problems with other laws? e.g. with AE schemes measure it's possible to adjust a irregular border to a regular border which makes the parcel easy to use don't use: policy aspects to do with the content of the measures, they belong to the subtheme "change of AE schemes measures"
P Change of AE schemes measures	Use: policy aspects to do with the content of the measures e.g. the composition of seed mix, the manner/time of weed control, the possibility of predation control… don't use: policy aspects for practical aspect of AE schemes to do with the execution of the measure, they belong to the subtheme "possible/practical to execute by farmers"
P Monitoring	Use: policy to do with the output of AE schemes, giving of feedback, efficiency, effect Don't use: when it's about the communication on results, they belong to the subtheme "KC on AE schemes" Don't use: for control aspects, they belong to the subtheme "P control"
P Payment	Use: policy aspects to do with the amount of remuneration, timing of payment, …
P Payment system	Use: policy aspects to do with the payment system, the aspect which are/aren't included
P Accessibility	Use: policy to do with who can/in what way/condition start with an AE schemes e.g. it can't step into an AE schemes because my parcel is not in a area assigned for AE schemes e.g. my level of ambition is high enough to get an AE schemes
P Organisation	Use: policy aspects to do with the way things are organized for AE schemes in your country, about government, with collectives Don't use: policy aspects to do with bureaucratic aspects, they belong to "P Bureaucracy"
P Location of AE schemes	Use: policy aspects to do with place on the parcel/farm/region measures are taken e.g. farmers tend to have AE schemes on pieces of land which are not suited for agriculture don't use: for aspects to do with a governmental decision if you can have a AE schemes in a certain area or not, they belong to the subtheme "P Accessibility"

C. Codes for Motivation.

M motivation	
DEF CODE	Explanation/when to use/when not to use
M Environmental responsibility	Use: motivations to do with the responsibility of farmers towards the countryside, that farmers have to care for the landscape, the biodiversity and the wildlife. To do with the public perception people have on farming and of farmers and that farmers are responsible for that image, to do with moral aspects/values
M Monetary	Use: motivations to do with money aspects, issues of extra income, remuneration
M Brexit	Use: motivations to do with Brexit and aspects to do with Brexit
M Aspects about integration of AE schemes in farming business/farming practice	Use: motivations to do with the fact that the measures suit easily in the current practice or farming business Don't use: motivation to do with finance, they belong to the subtheme "M Monetary"
M Food production	Use: motivations to do with providing food for the people
M Attract wildlife for hunting	Use: motivations to do with the attraction of wildlife for hunting
M Autonomy	Use: motivations to do with the autonomy of the decision maker to step in (or don't step into) an AE schemes
M Social pressure	Use: motivation to do with social pressure factors (e.g. from neighbors, society, other farmers (cluster))