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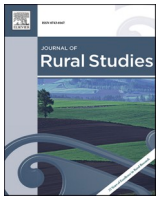

Farm-level acceptability of contract attributes in agri-environment-climate measures for biodiversity conservation

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ABSTRACT

Farmers are key to preserving and restoring semi-natural pastures (SNPs) while maintaining their environmental and cultural significance. To support these efforts, it is essential to create favorable conditions that encourages voluntary participation of farmers in agri-environment-climate measures (AECM) for SNP management. This study aims to assess acceptability of contract attributes within AECM for SNP management at the farm-level, including supported activity, payment, inspection, and sanction. Using a qualitative document analysis on data from semi-structured interviews, scientific literature, and policy documents, this study provides insights into farmers' perceptions of how these attributes affect effective implementation, along with recommendations for alternative solutions, and the potential of the Strategic Plan (SP) 2023–27. Results highlight concerns with current AECM, such as: i) misunderstandings between authorities and farmers on stipulated practices and conflicts with other regulations; ii) growing importance and reliance on payments; iii) apprehensions concerning potential interactions with unfavorable inspectors and punitive financial measures. Farmers expressed a strong desire for increased management flexibility, underscoring its significance over stringent contract attributes, and convey a need for improved communication with authorities. The SP 2023-27 offers an opportunity for improvements, mainly through administrative modifications via service digitalisation. As such, the results contribute to governance debates linked to contractual design and have implications for policy effectiveness, addressing both the appropriateness of AECM as a policy instrument and the capacity of governmental agencies to implement them effectively.

1. Introduction

Semi-natural pastures (SNPs), rich in natural and cultural values, are characterized by centuries without soil cultivation, heavy fertilization and sowing of forage crops (Swedish Board of Agriculture, 2023). In Sweden, the empirical focus area of this study, SNPs were common at the start of the 20th century (Cousins et al., 2007; Eriksson and Cousins, 2014; Waldén, 2018). They significantly contribute to the cultural heritage of Sweden and play an important role for the development of sustainable animal production (Waldén and Jakobsson, 2017). Nowadays, SNPs are among the most species-rich habitats of Sweden and encompass a wide range of semi-natural grazing lands, including outlying areas, forest, freshwater and coastal grazing lands (Swedish Board of Agriculture, 2023). SNPs create favorable conditions for wildlife, plant species, and crop pollination, increase carbon sequestration, ensure access to clean water, and serve as a natural forage source for grazing animals (Bengtsson et al., 2019; Eze et al., 2018; Hauck et al., 2014; Sollenberger et al., 2019). However, the provision of such public goods is facing negative trends, particularly in regions where historical human-environment interactions have created unique ecosystem services (European Environment Agency, 2021; D'Alberto et al., 2024; Debolini et al., 2018). Over the years, the area of SNPs in Sweden has significantly decreased due to intensification of arable land use and afforestation (Stoate et al., 2009), now representing only 10% of the total grassland area that once existed (Government of Sweden, 2023). Despite this rapid decline, SNPs still contribute to approximately 50% of

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the area accounted for reaching biodiversity goals, making their preservation a prominent policy objective in Sweden (Government of Sweden, 2023).

Farmers are primarily responsible for preserving and restoring SNPs and upholding their environmental and cultural values (Gaymard et al., 2020; Nitsch, 2009; Sollenberger et al., 2019). As such, it is crucial to create a supportive environment that facilitates their efforts to implement these activities (Buitenhuis et al., 2022; Divanbeigi and Saliola, 2016; Mathijs et al., 2022). In the European Union, the Common Agricultural Policy (CAP) provides agri-environment-climate measures (AECM) as a form of Payment for Ecosystem Services (PES), encouraging farmers to adopt management practices that preserve SNPs (Swedish Board of Agriculture, 2023). AECM incentivize voluntary participation, prompting farmers to go beyond legal requirements or traditional grazing practices to support the provision of public goods that might otherwise be neglected (Bazzan et al., 2022; Martin and Hine, 2018). For AECM to function effectively, contract attributes—such as supported activity (i.e., conditions attached to payment), payment, inspection, and sanction—must be carefully established by governmental agencies (Bali et al., 2019). However, research indicates that restrictive or inadequate contractual design can discourage farmer participation in these payment schemes (Eksvärd and Marquardt, 2018; Jamieson and Hessle, 2021; Nordberg and Asplund, 2020). For example, Nordberg and Asplund (2020) found that about 50% of Swedish farmers engaged in AECM for SNP management do not fully utilize the available area, and approximately 20% would opt out of future AECM under the same conditions. This reluctance threatens the stewardship of SNPs and may hinder policy goals (Waldén and Lindborg, 2018), casting uncertainty on the future of SNP and its associated cultural and environmental values (Pe'er et al., 2022).

The aim of this study is to assess farm-level acceptability of contract attributes within AECM for SNP management. While previous research highlights concern regarding restrictive conditions in AECM for SNP management in Sweden (Eksvärd and Marquardt, 2018; Jamieson and Hessle, 2021; Nordberg and Asplund, 2020), successful policy design depends on a clear understanding of where adjustments are needed and the best strategies for addressing these challenges (Bali et al., 2019; Hysing and Lidskog, 2018; Mack et al., 2024). By analyzing key contract attributes such as supported activity, payment, inspection, and sanction (Guerrero, 2021; Koop and Lodge, 2017; Yang et al., 2021), this study provides insights into farmers' perceptions of how these attributes affect effective implementation, along with recommendations for alternative solutions and the potential of the Strategic Plan (SP) 2023-27 for improved SNP management. An exploratory, qualitative approach using qualitative document analysis (QDA) systematically examines data from semi-structured interviews, scientific literature, and policy documents (Wach and Ward, 2013).

This study draws upon prior research that has identified individual attributes influencing farmers' participation in agri-environmental contracts. These features include payment amounts (Le Coent et al., 2017), policy complexity and administrative burdens (Brown et al., 2019), flexibility in implementation (Peerlings and Polman, 2009), the legitimacy of monitoring and auditing authorities (Kovács, 2015; Micha et al., 2015), and the effectiveness of sanctions (Zinngrebe et al., 2017). Additionally, this study aligns with more recent research on agri-envrionmental governance that uses structured approaches and consistent frameworks to evaluate key attributes such as innovative contract solutions (D'Alberto et al., 2024), the interaction between contract features and successful implementation (Bazzan et al., 2022; Gutiérrez-Briceño et al., 2024), and the development of a taxonomy for characterizing, organizing, and comparing agri-environmental contracts (Guerrero, 2021). It also builds on established methodologies using multiple data sources as exemplified by Bazzan et al. (2023). In contributing to this body of literature, this study specifically addresses the gap in research related to the context of agri-environmental contracts for SNP management. While previous studies have focused on farmers' perceptions regarding restoration outcomes, eligibility criteria, implementation difficulties, and simplification strategies under prior CAP reforms (Dahlström et al., 2013; Eksvärd and Marquardt, 2018; Nordberg and Asplund, 2020; Waldén and Lindborg, 2018), this study aims to fill this gap by providing new insights within the context of the SP 2023–27, considering ongoing policy changes.

The findings of this study enrich the existing literature on agri-environmental governance (e.g., Bazzan et al., 2022; D'Alberto et al., 2024; Gutiérrez-Briceño et al., 2024) by providing a comprehensive analysis of key contract attributes through a multi-source and structured approach. These findings have important implications for policy effectiveness, particularly in assessing the appropriateness of AECM as a policy instrument and the capacity of governmental agencies to implement them effectively (Bali et al., 2019), contributing to governance debates linked to contractual design regarding AECM acceptability (D'Alberto et al., 2024).

2. Conceptual framework: policy design for SNP management

AECM, funded under the CAP's second pillar, are part of the broader category of PES, which involve voluntary transactions between service users and providers contingent upon stipulated environmental management practices aimed at generating public benefits (Canessa et al., 2024; Wunder, 2015). AECM encourage farmers, through voluntary participation, to exceed the requirements of mandatory environmental regulations, which typically address issues like environmental pollution, animal welfare, and food safety violations (Martin and Hine, 2018). However, enforcing controls on practices deemed "normal" by the public, such as feed-intensive cattle production, can be politically or socially challenging. Therefore, payments are often necessary to incentivize farmers to adopt sustainable practices that deliver diverse ecosystem services beyond conventional farming (Bazzan et al., 2022; Martin and Hine, 2018). Depending on their objectives, AECM can support the extensification or intensification of management practices or encourage changes or maintenance of existing practices (Hasler et al., 2022). These payments should cover both the direct costs of implementing the practices and compensate for opportunity costs (Canessa et al., 2024). Incentives are generally categorized into action-based and result-based measures, or a combination of both. Action-based measures involve payments for implementing specific sustainable practices, while result-based measures reward achieving positive environmental outcomes (Coglianese and Lazer, 2003; Herzon et al., 2018). Action-based measures are the most established, compensating farmers for prescribed actions with the expectation that these will lead to the desired environmental outcomes (Canessa et al., 2024; Gaymard et al., 2020).

The voluntary nature of AECM means that effective participation, encompassing the number and types of farmers engaged, is a crucial indicator of both their success and overall effectiveness (Canessa et al., 2024; Persson and Alpízar, 2013). Despite the long-standing existence and benefits of action-based AECM (Hasler et al., 2022), participation has been inconsistent, and evidence of their effectiveness in biodiversity or ecosystem services is limited (Ait Sidhoum et al., 2023; Batáry et al., 2015; Díaz and Concepción, 2016; Gaymard et al., 2020; Pe'er et al., 2020). AECM are defined within regional Rural Development Programmes (RDP) and are tailored to local farming systems and ecosystems (Canessa et al., 2024). In Sweden, action-based AECM for SNP management reveal successful farmer engagement with the SNPs area (approx. 450,000 ha) remaining relatively stable since 1990 (Larsson et al., 2020). The Swedish SP 2023-27 allocates 640 million euros (10.5% of the total budget) to AECM for SNP management, covering approximately 423,000 ha per year—about 14% of Sweden's total agricultural land (Government of Sweden, 2023). The AECM for SNP management in Sweden vary significantly depending on land characteristics and management techniques. Grazing lands with special values, such as high natural or cultural significance, qualify for higher payment compared to lands with more general values. These attributes may

include ground cover, tree layers, and cultural heritage aspects (County Administrative Board, 2023). AECM for SNP management are action-based, emphasizing prescribed actions such as maintaining specific grass heights and keeping tree and bush densities below designated thresholds. However, despite significant effort for SNP conservation within Sweden's RDP, issues such as declining pasture quality and the loss of valuable areas continue to persist (Larsson et al., 2020).

Policymakers need to understand the underlying reasons for the declining quality of SNPs and identify the most effective ways to address them (Hysing and Lidskog, 2018; Mack et al., 2024). Understanding how AECM contract attributes interact with agricultural activities, which this paper aims to achieve, is a crucial step toward improving policy design (Mack et al., 2024). Indeed, attaining intended outcomes is not always straightforward when putting public policies into practice (Berman, 1978; Matland, 1995). Even if a policy appears to facilitate smooth application of sustainable practices, it does not necessarily imply that the target population perceives the policy as doing this (Buitenhuis et al., 2022; Nilsen et al., 2013). Multiple policies may interact, producing synergies or trade-offs that impact farmers' participation (Buitenhuis et al., 2022). Furthermore, policy effectiveness varies spatially due to differences between regions (Dabrowski, 2013). So, whereas authorities can influence the policy output, they can hardly control how the local-level context will affect farmers' implementation of the policy (Berman, 1978). This underscores the necessity to examine how policies are designed to achieve their intended goals and how well they align with farmers' perceptions and practices, to ensure their acceptability and effectiveness (Buitenhuis et al., 2022; Herzon et al., 2018).

Fig. 1 presents the policy design for SNP management in Sweden. Policy design is a deliberate effort to connect policy instruments, such as AECM, with well-defined policy objectives or a specific policy problem (Bali et al., 2019; Howlett, 2019). An effective policy is one that successfully addresses the identified problem (Peters et al., 2018). In this context, the policy objective of incentivizing SNP management is focused on biodiversity conservation, which underpins the use of AECM as a policy instrument. Farmers can voluntarily participate in AECM, typically for a five-year period, provided they follow the conditions specified in the funding guidelines. Then, to ensure the effective implementation of AECM, authorities enforce key contract attributes, including supported activity, payment, inspection, and sanction (Guerrero, 2021; Koop and Lodge, 2017; Yang et al., 2021). *Supported activity* determines the conditionality of the payment, meaning that farmers in the AECM receive the payment only if they implement the agreed actions or practices as specified in their contract (Guerrero, 2021). *Payment* highlights the importance of financial incentive for SNP management (Le Coent et al., 2017). Given the challenges associated with effectively enforcing farmers' production practices through administrative means, it is important to complement stipulated actions with payments (Yang et al., 2021). *Inspection* and *sanction* outline the actions that authorities employ to enforce the policy (Guerrero, 2021; Koop and Lodge, 2017; Zinngrebe et al., 2017). *Inspection* involves governmental agencies overseeing adherence to the stipulated actions, while *sanction* indicates the financial payback, with interest, for parts of or for the entire commitment period if farmers did not comply with the stipulated actions. Farm-level acceptability refers to the extent to which individual farmers are willing to comply with the contract attributes, based on how well they align with their specific needs, values, and operational circumstances (Canessa et al., 2024; D'Alberto et al., 2024). Acceptability is crucial for the adoption and effective implementation of AECM, as it directly influences farmer participation and, consequently, the overall effectiveness of the policy. In this context, effectiveness, measured by changes in biodiversity or ecosystem services that can be attributed to AECM implementation (Díaz and Concepción, 2016), is a function of the appropriateness of AECM, and the capacities of governmental agencies (Bali et al., 2019). It ensures a closer alignment between policy goals and AECM, ultimately contributing to more effective policy designs (Bali and Ramesh, 2018).

3. Methods and data

3.1. Qualitative document analysis

To fulfill the objective of this research, an exploratory, qualitative approach was adopted (Laurett et al., 2021). This method is suitable for understudied subjects and involves fieldwork to understand the perceptions, attitudes, and opinions of individuals involved (Creswell, 2009). QDA is employed to ensure a comprehensive and systematic examination of the gathered materials from various sources and individuals. This approach facilitates the extraction of relevant information, identification of patterns and themes, and the meaningful interpretation of the data (Wach and Ward, 2013). This study employs a combined QDA approach, using a triangulation process (Manevska-Tasevska et al., 2023). In-depth interviews were initially structured and further complemented using a review of scientific literature. The obtained findings were then compared with policy documents for further analysis. QDA used in this paper is further elaborated on under subheadings 3.1.1–3.1.3.

3.1.1. In-depth interviews

In-depth interviews gather qualitative data on individuals' perspectives regarding specific ideas, phenomena, or situations (Legard et al., 2003). In this study, eight farmers (one of them a representative of the Natural Pasture Meat Association of Sweden), as well as three advisors, contributed to the interviews. A combination of purposive and snowball sampling was used. This means that interview participants were selected based on relevance for the study, with the criterion for farmers specifying that they actively manage SNPs. For advisors, the criteria, in addition to working in an agricultural advisory capacity, were that they have had experience working with farmers who manage SNPs. Advisors had different focus areas—both animal health and production were of interest for this study.

The selection process consists of two parts. In the first part, sampling is of the purposive variety, with the Swedish Farmers' Association recommending advisors that fulfilled the required criteria (Etikan and Bala,

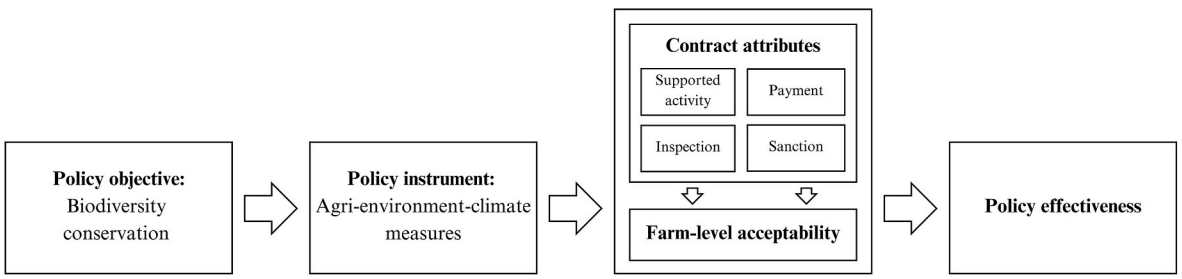

Fig. 1. Conceptual framework of the policy design for SNP management. From policy objective via AECM and farm-level acceptability of contract attributes to policy effectiveness.

2017). In the second part, sampling is of the snowball variety, with advisors who participated in the study recommending farmers to be interviewed (Etikan and Bala, 2017). A regional stratification based on the distribution of SNPs in Sweden was implemented to ensure proportional representation among the participants. Accordingly, six farmers and two advisors were selected from southern Sweden and two farmers and one advisor from northern Sweden. Farmers were interviewed both from farms with general and with special values in SNPs. Farmers who participated in the study mainly had their land grazed by cattle, but sheep were also present on some farms. The farms varied in size and production. Four farms focused on meat production and three farms focused on milk production. The number of grazing animals ranged from 50 to 500.

The in-depth interviews were conducted using a semi-structured format and an interview protocol to ensure consistency in the questions asked across the interviews (see Appendix, Table A1). Following the conceptual framework depicted in Fig. 1, the respondents shared their experiences with the contract attributes, namely, supported activity, payment, inspection, and sanction. Additionally, the respondents revealed how these attributes affect AECM acceptability and provided suggestions for alternative solutions. While all farmers shared their personal experiences, the advisors and the representative from the Natural Pastures Meat Association of Sweden contributed with a broader perspective and experiences from multiple farms they had been in contact with. All interviews were conducted digitally by one researcher and lasted for approximately 45 min, with audio recordings made with participants' consent and transcribed verbatim.

Qualitative thematic analysis (QTA) was undertaken on the transcripts for identifying, analyzing, and reporting patterns (themes) within the data (Braun and Clarke, 2006; Creswell, 2013), using NVivo 12.7 software (Jackson and Bazeley, 2019). The coding involved aggregating text fragments according to axial (deductive) and thematic (inductive) codes (Coopmans et al., 2021). Deductive coding involves applying pre-existing concepts or theories to the data, while inductive coding involves developing new concepts or theories based on the data (Linneberg and Korsgaard, 2019). Combining deductive and inductive coding approaches can result in a more comprehensive and nuanced understanding of the data by validating pre-existing concepts, while also allowing for the emergence of new ones. Our set of deductive codes was established corresponding to the four contract attributes illustrated in Fig. 1. The codes were then expanded inductively (see Appendix, Table A2). The results obtained inductively from the interviews were triangulated with previous literature and policy documents to ensure that the discussed attributes were aligned (Manevska-Tasevska et al., 2023). To minimize researcher bias, three researchers collaboratively coded and interpreted each transcript.

3.1.2. Scientific literature

A QTA of nation-specific studies was conducted to identify design issues with agri-environmental contracts for SNP management under prior CAP reforms. This review of scientific literature was used to structure the in-depth interviews while also providing complementary findings to those from the respondents. In total, 11 studies (reports and articles) were selected based on the following criteria: i) studies on the payment scheme for managing SNPs in Sweden relevant for the policy period after 2013; and ii) all studies containing evidence, gathered via interviews, surveys, literature review, on farmers' experience with management of SNPs (see Appendix, Table A3). QTA on the nation-specific studies consisted of two steps, data extraction and coding. The coding process followed the procedure outlined in section 3.1.1.

3.1.3. Policy document analysis

Qualitative content analysis (QCA) was undertaken on policy documents to investigate the extent to which the SP 2023-27 further constrains or enables SNP management in Sweden (Buitenhuis et al., 2022; Manevska-Tasevska et al., 2021). QCA is a systematic approach for coding and categorizing textual data to explore significant trends and patterns, without interfering with the information (Gbrich, 2007; Mayring, 2000; Pope et al., 2006). Contrary to QTA, the purpose of QCA is to depict the attributes of the document's content by examining "who says what, to whom, and with what effect" (Bloor and Wood, 2006). Nine documents were selected based on the following criteria: i) CAP payment schemes supporting the management of SNPs, and ii) relevant Swedish laws, legal cases, and documents outlining the application of these schemes in Sweden. The documents were sourced from the European Commission (ec.europa.eu), the Swedish law platform (lagen.nu), and the Swedish Board of Agriculture (jordbruksverket.se). These included: i) the SP 2023–27; ii) agri-environmental support, direct support, and basic conditions from 2022, with amendments from 2021; and iii) animal welfare regulation (Djurskyddsförordning 2019:66; Government Offices, 2020) (see Appendix, Table A4). QCA on the policy documents consisted of two steps, data extraction and coding. The coding process followed the methodology outlined in section 3.1.1.

3.2. Limitations

It is important to acknowledge that the methods and data face some limitations. First, it is crucial to acknowledge that the primary objective is not to achieve statistical generalization to the broader population. Instead, the in-depth, semi-structured interviews on a limited sample size facilitated a thorough exploration of participants' subjective perspectives. The interview protocol (see Appendix, Table A1) ensured coverage of all planned topics while the open-ended format allowed participants to guide the discussion towards the areas that they deemed important, resulting in a comprehensive understanding of their personal viewpoints. Data saturation was achieved when multiple interviewees raised similar issues, improving the study's robustness (Sim et al., 2018).

Second, the combination of purposive and snowball sampling may introduce a selection bias by only including farmers that have interactions with external advisors, which may favor more knowledgeable participants. To minimize such bias, findings from interviews with advisors who draw upon their experiences working with a diverse range of farmers during their visits have been included. Additionally, since the Swedish Farmers' Association recommended advisors who then promoted farmers for interviews, there is a potential risk that the association may have pushed their own agenda. However, the Swedish Farmers' Association is predominant in Sweden, with over 80% of Swedish farmers being active members.

Third, this study primarily gathers insights from farmers and advisors, representing the policy's target population. However, involving other key stakeholders, such as inspectors and local and national policymakers, would foster a more inclusive and participatory process that reflects the needs and perspectives of all actors involved in policy implementation (Dabrowski, 2013; Gutiérrez-Briceño et al., 2024; Nilsen et al., 2013). Both in literature and practice, the participation of multiple stakeholders in designing agri-environmental contracts remains insufficient (Gutiérrez-Briceño et al., 2024). Engaging in participatory backcasting to explore alternative solutions (Reidsma et al., 2023) could provide further valuable insights and open new pathways for improvement.

4. Results

The results are structured around the four contract attributes as illustrated in the conceptual framework: supported activity, payment, inspection, and sanction. Each section includes insights into farmers' perceptions of how these attributes affect effective SNP management, gathered from both interviews and existing literature. Additionally, each section presents alternative solutions for improving AECM acceptability, as suggested by respondents, and evaluates the potential impact of the proposed changes under the SP 2023–27.

4.1. Supported activity

4.1.1. Conflict with other regulations

The primary concern highlighted by the interviews arises from the prohibition of supplementary feeding on SNPs with special values (SJVFS 2022:29; Swedish Board of Agriculture, 2022b). This condition also forbids rotational grazing between cultivated land and SNPs with special values. The goal is to prevent the introduction of nutrient supplementation into the soil, which is believed to negatively impact biodiversity (Government of Sweden, 2023). However, scientific literature indicates that the degree of harm resulting from supplementary feeding remains uncertain (Envall and Scharin, 2019), while rotational grazing is not found to compromise biodiversity (Pelve et al., 2020). The following quote from respondent #6 located in the south of Sweden alludes to this issue:

> "One tries to supplement feed as best as possible with concentrate feed … even though it is not allowed … one still does it" (R6-south).

Results from interviews and previous analyses (Eksvärd and Marquardt, 2018) show that the prohibition on supplementary feeding has adverse effects on animals, as there may not be sufficient grazing land available. As a result, animals suffer from a shortage of feed, and in some instances, farmers may violate animal welfare regulations (Commission delegated regulation 2022/126; European Commission, 2021) if they fail to take corrective measures. To protect the animals and maintain the farm's economic viability, some farmers choose to confine the animals to stalls, relocate them to nutrient-rich pastures, or transfer them to SNPs with general values, where supplementary feeding is allowed. In some cases, farmers with SNPs with special values choose not to apply for support because they want to retain the autonomy to feed their animals as they see fit.

> "I try to follow the rules, but not everywhere. Sometimes I know that this will go to hell anyway, and then I do as I please and do not seek support for it" (R3-south).

Farmers desire more flexibility, such as the ability to supplement feed their animals in limited amounts and within a restricted time frame, or the freedom to move their animals between different types of land, including cultivated farmland and SNPs with special values.

> "You would like to be able to mix a little more. It has been documented for almost 100 years that animals have moved between cultivated meadows, forest grazing, and natural grazing on shorelines" (R12-north).

Presently, farmers can request exemptions in exceptional circumstances, such as drought, by notifying the authorities and explaining their farm's situation (SJVFS 2022:28; Swedish Board of Agriculture, 2022a). However, this process is time-consuming and may result in delayed decisions. Additionally, exemptions can only be sought in specific circumstances, and they are not available during normal growth variations that may result in feed shortages at certain times. The current conditions allow for some flexibility in supplementary feeding during two weeks before animal release in the spring and before cessation in the fall, referred to as "transition feeding" (SJVSF 2022:28; Swedish Board of Agriculture, 2022a), but not during the summer and growth season. The SP 2023-27 has introduced no further changes regarding supplementary feeding, and no changes have been undertaken to reduce or prevent conflicts with animal welfare regulations.

> "I am not going to wait to provide feed support to my animals because I am waiting for a permit. I will provide feed support to my animals anyway because I think it is much more important that they get something to eat than for me to get a permit" (R7-south).

4.1.2. Complexity and misunderstandings

Most respondents find the conditions attached to payment to be complex and difficult to understand and implement. Findings from previous studies (Eksvärd and Marquardt, 2018) indicate that farmers often feel constrained by these conditions, which negatively affects their compliance. They perceive the requirements as overly detailed, causing anxiety about whether they are interpreting them correctly and in line with inspectors' expectations.

> "It has mostly been a headache. When you try to read or interpret something, you can sometimes experience that there is a bit of double meaning" (R10-south).

Consequently, the supported activity for maintaining SNPs are often misunderstood by farmers. For instance, the grazing pressure requirement dictates that SNPs with general and special values should be heavily grazed during the growth season (SJVFS 2022:28; Swedish Board of Agriculture, 2022a). The interviews reveal a misunderstanding among farmers that animals should graze continuously throughout the entire grazing season, even when vegetation growth is insufficient. According to the regulation on animal welfare (Djurskyddsförordningen 2019:66; Government Offices, 2020), the number of days that animals must graze (i.e., at least 60 days) is considerably fewer than the entire grazing season.

> "Animals need to graze even if the grazing does not provide as much as the animals need, causing them to lose weight" (R1-south).

Nonetheless, most respondents discussed the boundary conditions for the grazing season requirement and expressed their desire for them to be more locally adapted based on climatic conditions (Buitenhuis et al., 2022; Dabrowski, 2013). Farmers are presently expressing dissatisfaction and frustration with the current schedule within which animals should be on SNPs, desiring an extended grazing season in the south and a shortened season in certain northern areas. While farmers in the southern regions are eager to maximize available feed, starting the grazing season too early in the north presents a significant danger to the animals and results in difficulties to meet the desired outcomes. In consonance with prior research that has highlighted the challenges of policy implementation resulting from regional disparities (Dabrowski, 2013), the current requirement is seen as restrictive and inadequately adapted to local conditions and needs.

> "Those dates, I am very, very irritated about … should I have the animals walk there with basically nothing to eat?" (R12-north).

Additional misunderstandings between authorities and farmers may emerge due to differing interpretations of biodiversity and the requirements for controlling overgrowth of trees and bushes (SJVFS 2022:28; Swedish Board of Agriculture, 2022a). The purpose of the requirement is to preserve endangered species (listed on the Swedish Species Information Centre's red list in the vulnerable, critically endangered, or endangered categories), and to protect species marked in the Species Protection Ordinance (Artskyddsförordning 2007:845; Government Offices, 2020) that are found on SNPs (SJVFS 2022:28; Swedish Board of Agriculture, 2022a). There is a consensus, both in the interviews and in the scientific literature (Jakobsson and Lindborg, 2015; Nitsch, 2009; Waldén and Lindborg, 2018) that overgrowth should be prevented to preserve SNPs, but there are different opinions on how many trees and bushes should be allowed to exist. This raises concerns among farmers regarding the impact on biodiversity, animal welfare, and the cultural value of the landscape as highlighted in Jakobsson and Lindborg (2015). It also generates negative sentiments due to the additional costs associated with the increased workload. The concept of overgrowth and the number of trees and shrubs allowed in SNPs has changed over the years, making it more difficult for farmers to participate in the revival of trees and shrubs, without the resulting plants being labeled as overgrowth.

"We have chosen to manage SNPs ourselves because we want our ecosystems to be healthy and look that way, so there we have made the effort" (R4-south).

In the SP 2023–27, there are no planned changes regarding the boundary dates for the grazing season or new requirements for the management of trees and shrubs. However, there are planned changes aimed at clarifying the supported activity and avoiding any misinterpretation of the requirements through increased support for competence development, knowledge exchange, and information dissemination for SNPs with special values (Government of Sweden, 2023). The development of e-services (Government of Sweden, 2023) will also lead to reduced complexity for farmers, especially in the workload related to the administrative burden through streamlining for support-seeking and handling authorities. The development of e-services will therefore increase accessibility and queries customization. Further, changes in the SP 2023-27 also involve replacing farm-specific with generic management plans for areas with special values (Government of Sweden, 2023). This new approach will be applicable to all areas falling under the same land classification, to provide more accurate compensation payments for the management of different habitats (considering the vast variation in SNPs appearance in Sweden). Instead of farm-specific management plans, SNPs with special values will now adhere to the same requirements as all land within the same land classification. Increased advice on biodiversity can also be expected from the SP 2023–27 (Government of Sweden, 2023).

4.2. Payment

Respondents considered payments essential for covering the costs of SNP management and indicate an increasing dependence on support systems to manage these activities effectively. This aligns with previous research (Eksvärd and Marquardt, 2018; Le Coent et al., 2017; Waldén and Lindborg, 2018), which highlights that insufficient economic incentives may lead farmers to withdraw from payment schemes, potentially resulting in the loss of SNPs and a negative impact on societal environmental goals.

"If we had not received compensation, it would never have happened …"(R11-north).

The SP 2023-27 indicates that governmental agencies have acknowledged the necessity to increase payments for SNP management. Specifically, compensation for SNP management with general and special values has increased from 1300 SEK to 1850 SEK per hectare and from 3250 SEK to 3950 SEK per hectare (10 SEK ≈ 1 euro), respectively (Government of Sweden, 2023). To promote greater equity and foster positive impacts on both fodder supply and the maintenance of biodiversity, the compensation levels for less favored areas have also been raised in selected geographical areas, particularly in the northern parts of Sweden. However, it is important to note that the simultaneous decrease of 500 SEK/ha in direct support undermines the rise in environmental support. Additional support aimed at fortifying biodiversity for meadows, as well as area-based support for the restoration of SNPs and the care and management of Natura 2000 areas, will now be strengthened through national funds (Government of Sweden, 2023).

4.3. Inspection

The interviews have highlighted a significant concern related to inspections. While most interactions between the respondents and inspectors are described positively, farmers still express unease about encountering inspectors who are overly strict or unfair. Respondents fear the excessive power held by inspectors, which creates an imbalance in their relationship. Compared with findings from previous studies (Bergström Nilsson et al., 2020; Nitsch, 2009), improvements regarding inspections have been made over the years. This suggests that these concerns, despite being mostly remnants from the past, still influence farmers' anxieties and overshadow the fact that inspections generally seem to be functioning well.

"I have only positive things to say about my inspections so far, but one is terrified of encountering someone who does not understand what we're doing" (R3-south).

While farmers recognize the need for strict conditions, they seek flexibility that would allow for reaching compromises when inspections are carried out. This need for flexibility often arises from situations where farmers do not want to choose between prioritizing animal welfare or risking sanctions for neglecting SNPs. In such scenarios, farmers would prefer that inspectors exercise flexibility in their assessments and permit compromises without imposing sanctions.

"... that I won't be sanctioned for the weather that has affected if I did something wrong. Then, when there comes an inspection, it should be informative, educational, it should not be punitive" (R11-north).

Farmers also expressed a desire for improved collaboration and communication with inspectors to enhance the management of their lands and to help them comply with the conditions. To achieve this, suggestions have been put forward to facilitate dialogue between farmers and inspectors and allow for farmers to seek advice from them. In Waldén and Lindborg (2018), non-financial support from authorities in form of feedback and advice, as well as support from the local community and society, was also highlighted. However, the current AECM prevent inspectors from providing advice to farmers, which limits competence development.

"The inspections should be advisory, not judgmental" (R12-north).

The scientific literature emphasizes such needs for improved collaboration between authorities and farmers to facilitate mutual learning and joint planning for SNP management (Bergström Nilsson et al., 2020; Jamieson and Hessle, 2021). Long-term collaboration and a shared objective, as pointed out by Waldén and Jakobsson (2017), can reduce the demand for inspections, allowing for the reallocation of resources from inspectors to advisory services.

"It would have been so incredibly nice to go there [SNP] and plan and talk about how to take care of it, without having the thought looming in the back of your mind that it might become an issue later" (R2-south).

The SP 2023-27 does not include any immediate changes in the inspections. Nevertheless, the anticipated implementation of e-services is likely to modify the nature of communication between authorities and farmers.

4.4. Sanction

None of the interviewed farmers personally faced sanctions. Most respondents expressed satisfaction with the system, emphasizing the importance of taking good care of the land to qualify for AECM.

"If you are going to receive money, then you should take care of it [SNP]. So, I think sanctions can be okay" (R7-south).

However, farmers expressed concerns about potential consequences in cases where they have fulfilled their responsibilities but still fail inspections due to circumstances outside of their control, leading to sanctions that may include the repayment of support with interest. Such concerns are aligned with those highlighted in the scientific literature, as in Eksvärd and Marquardt (2018), in which farmers experience a lack of control of their finances. These concerns are compounded by the fact that approved grazing areas can be re-evaluated at any time during the five-year commitment period, potentially resulting in repayment obligations (Eksvärd and Marquardt, 2018). There is also anxiety about completing forms correctly to avoid mistakes that could lead to

sanctions, along with concerns about potential conflicts affecting their eligibility for other forms of support (Eksvärd and Marquardt, 2018; Nitsch, 2009). Additionally, conflicts with other regulations can lead to further uncertainty and potential sanctions (Eksvärd and Marquardt, 2018; Jamieson and Hessle, 2021). To minimize this risk, some farmers apply for AECM for only a portion of their available grazing area, resulting in the potential abandonment of SNPs stewardship for the areas not covered by these payment schemes (Bergström Nilsson et al., 2020).

Nonetheless, the interviews underscored the desire for sanctions to promote results within a broader context, rather than rigidly adhering to strict rules. It was acknowledged that external factors beyond the control of farmers could significantly impact outcomes if strict compliance to rules were mandated, potentially leading to negative consequences. Therefore, allowing for flexibility to favor long-term outcomes was deemed preferable by the farmers.

The SP 2023-27 does not include any direct changes in the sanction system. However, as concerns from farmers mainly pertain to the proper implementation of the stipulated practices, the increased support for competence development, knowledge exchange, and dissemination of information for the management of SNPs with special values (Government of Sweden, 2023) is intended to alleviate such anxieties. Moreover, the development of e-services is promoted to improve clarity and transparency in administrative procedures.

5. Discussion and conclusions

Improving farm-level acceptability of agri-environmental contracts through effective policy design depends on a clear understanding of where adjustments are needed and the best strategies for addressing these challenges (Bali et al., 2019; Hysing and Lidskog, 2018; Mack et al., 2024). By analyzing key contract attributes, supported activity, payment, inspection, and sanction (Guerrero, 2021; Koop and Lodge, 2017; Yang et al., 2021), this study provides insights into farmers' perceptions of how these attributes affect effective AECM implementation for SNP management, alternative solutions, and the potential of the SP 2023–27. As such, the findings of this study have implications for policy effectiveness, particularly in evaluating the appropriateness of AECM as a policy instrument and the capacity of governmental agencies to implement them effectively (Bali et al., 2019), contributing to governance debates linked to contractual design regarding AECM acceptability (D'Alberto et al., 2024).

The supported activity defines the practices that farmers must implement under contractual agreements to qualify for AECM payments and thereby contribute to achieving the policy goals (Guerrero, 2021). However, as noted in previous literature, our results highlight that achieving intended outcomes with public policies is challenging, emphasizing the importance of designing policies that align with farmers' practices and local conditions (Berman, 1978; Matland, 1995; Buitenhuis et al., 2022; Nilsen et al., 2013; Dabrowski, 2013). Respondents highlight that policies are often incompatible with their views on how farming practices meet policy goals, citing issues such as misunderstandings related to biodiversity, regional differences, and conflicts with animal welfare regulations, particularly concerning requirements for managing the overgrowth of bushes and trees, regional grazing mandates, and the prohibition of supplementary feeding. Improving the acceptability of AECM for SNP management requires a reassessment of both targeting, to ensure alignment with local conditions and environmental objectives (Herzon et al., 2018), and compatibility at the farm level (D'Alberto et al., 2024). Respondents indicated that introducing greater flexibility through contract adjustment clauses, i.e., provisions that allow modifications in response to changing contexts and unforeseen circumstances (Guerrero, 2021), can address these needs. This approach supports adapting contract solutions to different situational challenges and conditions (Peerlings and Polman, 2009; Waylen and Martin-Ortega, 2018), rather than enforcing rigid conditions, which may prove ineffective or even counterproductive (Kingston et al., 2021).

Profitability and payment flexibility are additional factors that need to be reconsidered for AECM targeting SNP management (D'Alberto et al., 2024). The results underscore the critical role of payments in ensuring the successful management of SNPs, highlighting farmers' reliance on these financial incentives (Le Coent et al., 2017). Respondents expressed concerns that over the years, they have become increasingly dependent on financial support, raising the risk that payments may not keep pace with rising costs and thus affect profitability (D'Alberto et al., 2024). This issue is particularly significant in light of the reduction in direct support in the Strategic Plan 2023–27 (Government of Sweden, 2023). Lack of sufficient economic incentives for farmers' environmental efforts increases the risk that they may choose to opt out of the support system and that society subsequently will lose SNPs (Waldén and Lindborg, 2018). Additionally, farmers expressed a preference to be compensated based on outcomes and favored rewards over sanctions (D'Alberto et al., 2024). This sentiment highlights the need for a more advanced and innovative contractual approach, that connects payments directly to the measurable environmental benefits achieved, rather than to specific management practices (Matzdorf et al., 2008). Result-based incentives are expected to support positive reinforcement towards the stewardship of natural resources (Hamman et al., 2021), while improving targeting and cost-effectiveness (Bartkowski et al., 2021; Wuepper and Huber, 2022). Moreover, result-based incentives will provide farmers with greater flexibility in implementing practices and making management decisions (Herzon et al., 2018; Peerlings and Polman, 2009), potentially reducing long-term commitment costs (D'Alberto et al., 2024) and attract farmers who favor targeted and adaptable conservation programs (Schulze and Matzdorf, 2023; Shipley et al., 2024).

In the current action-based AECM, although respondents were generally satisfied with the inspections they had experienced so far, they feared encountering unfavorable inspectors in the future. They noted a power imbalance from inspectors' subjective assessments and expressed concerns about potential sanctions, despite understanding the need for compliance to receive compensation. However, results indicate a distinct contradiction between farmers' desire for flexibility and their aversion to subjective assessments. The key to the proposed solution is striking an optimal balance between flexibility required to achieve environmental objectives and the need for a sufficient level of certainty and enforcement to ensure compliance (Benson and Garmestani, 2011). Our results might be held to indicate that the current AECM have failed to strike such balance by granting too much weight to rigid monitoring and enforcement without the necessary counterweight of flexibility in implementation (Peerlings and Polman, 2009). Consequently, subjectivity and flexibility are both found to be linked to the power of inspectors themselves. As flexibility increases, the inspector gains more authority to make subjective judgments, potentially leading to heightened anxiety among farmers who fear encountering an overly strict or unjust inspector. The requested flexibility and trust in assessments regarding monitoring highlight the need to enhance feasibility, driven by support for implementation and improved capacities within governmental agencies (Bali et al., 2019). This is particularly crucial, as respondents emphasized the importance of increased communication during inspections to foster a more collaborative and transparent process. As indicated by the respondents and supported by the reviewed literature, the opportunity for open discussions, receiving advice, and explaining the relevance of restrictions can improve policy acceptability (Bergström Nilsson et al., 2020; Jamieson and Hessle, 2021; Mack et al., 2024; Waldén and Jakobsson, 2017).

In that respect, the development of e-services on the SP 2023–2027 is expected to transform the nature of communication between farmers and authorities, allowing for more customized queries and potentially reducing administrative delays. This may also facilitate more rapid and frequent requests for customized exemptions. However, a recent study

examining farmers' perceptions of the effects of changes in e-services points to higher administrative workload for farmers, which already suggests counterproductive modifications (Mack et al., 2024). Our research strengthens the argument that transparent processes and two ways communication have the potential to transform inspections into learning opportunities for both parties, resulting in improved land management and a reduced risk of future sanctions (Mack et al., 2024). Results are also in line with the literature emphasizing farmers potential to be a vital resource, whose intrinsic pro-environmental motivations can be strengthened through the thoughtful design of contractual features. This involves their participation such as co-design, (Canessa et al., 2024; Gutiérrez-Briceño et al., 2024), in fostering a supportive culture with clear, consistent, sensible, and easily understandable rules (Kingston et al., 2021).

CRediT authorship contribution statement

Harold Opdenbosch: Writing – review & editing, Writing – original draft, Visualization, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Mark V. Brady:** Writing – review & editing, Validation, Supervision. **Ivan Bimbilovski:** Writing – review & editing, Validation, Supervision. **Rebecca Swärd:** Formal analysis, Data curation, Conceptualization. **Gordana Manevska-Tasevska:** Writing – review & editing, Supervision, Project administration, Methodology, Funding acquisition, Formal analysis, Data curation, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The data that has been used is confidential.

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Appendix A. Supplementary data

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References

Ait Sidhoum, A., Canessa, C., Sauer, J., 2023. Effects of agri-environment schemes on farm-level eco-efficiency measures: empirical evidence from EU countries. J. Agric. Econ. 74 (2), 551–569.
Bali, A.S., Ramesh, M., 2018. Policy capacity: a design perspective. In: Howlett, M., Mukherjee, I. (Eds.), Routledge Handbook of Policy Design. Routledge, New York, pp. 331–344.
Bali, A.S., Capano, G., Ramesh, M., 2019. Anticipating and designing for policy effectiveness. Policy and Society 38 (1), 1–13.
Bartkowski, B., Droste, N., Ließ, M., Sidemo-Holm, W., Weller, U., Brady, M.V., 2021. Payments by modelled results: a novel design for agri-environmental schemes. Land Use Pol. 102, 105230.
Batáry, P., Dicks, L.V., Kleijn, D., Sutherland, W.J., 2015. The role of agri-environment schemes in conservation and environmental management. Conserv. Biol. 29 (4), 1006–1016.
Bazzan, G., Candel, J., Daugbjerg, C., Pecurul, M., 2022. Identifying institutional configurations for policy outcomes: a comparison of ecosystem services delivery. Pol. Stud. J. 12476.
Bazzan, G., Candel, J., Daugbjerg, C., 2023. Designing successful agri-environmental schemes: a mechanistic analysis of a collective scheme for ecosystem services in The Netherlands. Environ. Sci. Pol. 146, 123–132.
Bengtsson, J., Bullock, J.M., Egoh, B., Everson, C., Everson, T., O'Connor, T., O'Farrell, P. J., Smith, H.G., Lindborg, R., 2019. Grasslands—more important for ecosystem services than you might think. Ecosphere 10 (2), e02582.
Benson, M.H., Garmestani, A.S., 2011. Can we manage for resilience? The integration of resilience thinking into natural resource management in the United States. Environ. Manag. 48 (3), 392–399.
Bergström Nilsson, S., Lans Strömblad, H., Lunner Kolstrup, C., 2020. Byråkratin I Lantbruket Belastar Och Kostar.
Berman, P., 1978. The study of macro- and micro-implementation. Publ. Pol. 26 (2), 157–184.
Bloor, M., Wood, F., 2006. Keywords in Qualitative Methods: A Vocabulary of Research Concepts, first ed. Sage.
Braun, V., Clarke, V., 2006. Using thematic analysis in psychology. Qual. Res. Psychol. 3 (2), 77–101.
Brown, C., Kovacs, E.K., Zinngrebe, Y., Albizua, A., Galanaki, A., Herzon, I., Marquardt, D., McCracken, D., Olsson, J., 2019. Understanding Farmer Uptake of Measures that Support Biodiversity and Ecosystem Services in the Common Agricultural Policy (CAP).
Buitenhuis, Y., Candel, J., Termeer, K., Bardají, I., Coopmans, I., Lievens, E., Martikainen, A., Mathijs, E., Urquhart, J., Wauters, E., Feindt, P.H., 2022. Policies and farming systems resilience: a bottom-up analysis. In: Meuwis- sen, M.P.M., Feindt, P.H., Garrido, A., Mathijs, E., Soriano, B., Urquhart, J., Spiegel, J.&A. (Eds.), Resilient and Sustainable EU-Farming Systems: Exploring Diversity and Pathways. Cambridge University Press, pp. 63–87.
Canessa, C., Ait-Sidhoum, A., Wunder, S., Sauer, J., 2024. What matters most in determining European farmers' participation in agri-environmental measures? A systematic review of the quantitative literature. Land Use Pol. 140, 107094.
Coglianese, C., Lazer, D., 2003. Management-based regulation: prescribing private management to achieve public goals. Law Soc. Rev. 37 (4), 691–730.
Coopmans, I., Dessein, J., Accatino, F., Antonioli, F., Bertolozzi-Caredio, D., Gavrilescu, C., Gradziuk, P., Manevska-Tasevska, G., Meuwissen, M., Peneva, M., Pettit, A., Urquhart, J., Wauters, E., 2021. Understanding farm generational renewal and its influencing factors in Europe. J. Rural Stud. 86, 398–409.
County Administrative Board, 2023. Markklasser. Reference Number 16196.
Cousins, S.A., Ohlson, H., Eriksson, O., 2007. Effects of historical and present fragmentation on plant species diversity in semi-natural grasslands in Swedish rural landscapes. Landsc. Ecol. 22 (5), 723–730.
Creswell, J.W., 2009. Research Design: Qualitative, Quantitative, and Mixed Methods Approaches, third ed. Sage publications.
Creswell, J.W., 2013. Steps in conducting a scholarly mixed methods study. DBER Speaker Series 48. Available at: https://digitalcommons.unl.edu/dberspeakers/48.
Dabrowski, M., 2013. EU cohesion policy, horizontal partnership and the patterns of sub-national governance: insights from central and eastern europe. Eur. Urban Reg. Stud. 21 (4), 364–383.
D'Alberto, R., Targetti, S., Schaller, L., et al., 2024. A European perspective on acceptability of innovative agri-environment-climate contract solutions. Land Use Pol. 141, 107120.
Dahlström, A., Iuga, A.-M., Lennartsson, T., 2013. Managing biodiversity rich- hay meadows in the EU: a comparison of Swedish and Romanian grasslands. Environ. Conserv. 40m, 194–205.
Debolini, M., Marraccini, E., Dubeuf, J.P., Geijzendorffer, I.R., Guerra, C., Simon, M., Targetti, S., Napoleone, C., 2018. Land and farming system dynamics and their drivers in the Mediterranean Basin. Land Use Pol. 75, 702–710.
Díaz, M., Concepción, E.D., 2016. Enhancing the effectiveness of CAP greening as a conservation instrument: a plea for regional targeting considering landscape constraints. Current Landscape Ecology Reports 1, 168–177.
Divanbeigi, R., Saliola, F., 2016. Regulation and the transformation of agriculture. Working Paper Presented at FAO Conference on Rural Transformation. Paper read at.
Eksvärd, K., Marquardt, K., 2018. From change to transition? Learning from environmental protection activities in Sweden. Agroecology and Sustainable Food Systems 42 (2), 189–209.
Envall, I., Bengtsson, J., Jakobsson, S., Rundlöf, M., Åberg, C., Lindborg, R., 2021. What is the effect of giving the grazers access to additional nutrient sources on biodiversity in semi-natural pastures? A systematic review protocol. Environ. Evid. 10 (1), 1–11.
Eriksson, O., Cousins, S.A., 2014. Historical landscape perspectives on grasslands in Sweden and the Baltic region. Land 3 (1), 300–321.
Etikan, I., Bala, K., 2017. Sampling and sampling methods. Biometrics and Biostatistics International Journal 5 (6), 00149.
European Commission, 2021. Commission Delegated Regulation EU 2022/126, Supplementing Regulation (EU) 2021/2115.
European Environment Agency, 2021. Abundance and Distribution of Selected Species in Europe.
Eze, S., Palmer, S.M., Chapman, P.J., 2018. Soil organic carbon stock in grasslands: effects of inorganic fertilizers, liming and grazing in different climate settings. J. Environ. Manag. 223, 74–84.
Gaymard, S., Goujon, B., Lefebvre, M., 2020. Adherence to environmental regulation in the European Union Common Agricultural Policy: social representations and conditionality among French farmers. J. Agric. Food Inf. 21 (3–4), 104–125.
Gbrich, C., 2007. Qualitative Data Analysis: an Introduction, first ed. Sage.
Government Offices, 2020. Djurskyddsförordning (2019:66). Regeringskansliets rättsdatabaser.

Government of Sweden, 2023. Strategic Plan for the Implementation of the Common Agricultural Policy in Sweden 2023-27: Government of Sweden.
Guerrero, S., 2021. Characterising Agri-Environmental Policies: towards Measuring Their Progress.
Gutiérrez-Briceño, I., García-Llorente, M., Turkelboom, F., Mortelmans, D., Defrijn, S., Yacamán-Ochoa, C., et al., 2024. Towards sustainable landscapes: implementing participatory approaches in contract design for biodiversity preservation and ecosystem services in Europe. Environ. Sci. Pol. 160, 103831.
Hamman, E., Deane, F., Kennedy, A., Huggins, A., Nay, Z., 2021. Environmental regulation of agriculture in federal systems of government: the case of Australia. Agronomy 11 (8), 1478.
Hauck, J., Schleyer, C., Winkler, K.J., Maes, J., 2014. Shades of greening: reviewing the impact of the new EU agricultural policy on ecosystem services. Change Adapt. Socio-Ecol. Syst. 1 (1), 51–62.
Hasler, B., Termansen, M., Nielsen, H.Ø., Daugbjerg, C., Wunder, S., Latacz-Lohmann, U., 2022. European agri-environmental policy: evolution, effectiveness, and challenges. Rev. Environ. Econ. Pol. 16 (1), 105–125.
Herzon, I., Birge, T., Allen, B., Povellato, A., Vanni, F., Hart, K., et al., 2018. Time to look for evidence: results-based approach to biodiversity conservation on farmland in Europe. Land Use Pol. 71, 347–354.
Hysing, E., Lidskog, R., 2018. Policy contestation over the ecosystem services approach in Sweden. Soc. Nat. Resour. 31 (4), 393–408.
Howlett, M., 2019. Designing Public Policies: Principles and Instruments. Routledge, Oxon.
Jackson, K., Bazeley, P., 2019. Qualitative Data Analysis with NVivo, 3rd Edition. Sage Publications.
Jakobsson, S., Lindborg, R., 2015. Governing nature by numbers—EU subsidy regulations do not capture the unique values of woody pastures. Biol. Conserv. 191, 1–9.
Jamieson, A., Hessle, A., 2021. Hinder och möjligheter för ökad naturbetesdrift ur ett lantbrukarperspektiv: en kunskapsöversikt.
Kingston, S., Alblas, E., Callaghan, M., Foulon, J., 2021. Magnetic law: designing environmental enforcement laws to encourage us to go further. Regulation & Governance 15, S143–S162.
Koop, C., Lodge, M., 2017. What is regulation? An interdisciplinary concept analysis. Regulation and Governance 11 (1), 95–108.
Kovács, E.K., 2015. Surveillance and state-making through EU agricultural policy in Hungary. Geoforum 64, 168–181.
Larsson, C., Boke Olén, N., Brady, M., 2020. Agrifood rapport 2020:1 Naturbetesmarkens framtid – en fråga om lönsamhet.
Laurett, R., Paço, A., Mainardes, E.W., 2021. Sustainable development in agriculture and its antecedents, barriers and consequences–an exploratory study. Sustain. Prod. Consum. 27, 298–311.
Le Coent, P., Prégent, R., Thoyer, S., 2017. Compensating environmental losses versus creating environmental gains: implications for biodiversity offsets. Ecol. Econ. 142, 120–129.
Legard, R., Keegan, J., Ward, K., 2003. In-depth interviews. In: Richie, J., Lewis, J. (Eds.), Qualitative Research Practice. Sage, pp. 139–168.
Linneberg, M.S., Korsgaard, S., 2019. Coding qualitative data: a synthesis guiding the novice. Qual. Res. J. 19 (3), 259–270.
Mack, G., Ritzel, C., Ammann, J., El Benni, N., 2024. Improving the understanding of farmers' non-compliance with agricultural policy regulations. J. Rural Stud. 106, 103190.
Manevska-Tasevska, G., Duangbootsee, U., Bimbilovski, I., Thathong, P., Ha, T.M., 2023. A systematic scoping review and content analysis of policy recommendations for climate-resilient agriculture. Clim. Pol. 1–17.
Manevska-Tasevska, G., Petitt, A., Larsson, S., Bimbilovski, I., Meuwissen, M.P.M., Feindt, P.H., Urquhart, J., 2021. Adaptive governance and resilience capacity of farms: the fit between farmers' decisions and agricultural policies. Front. Environ. Sci.: Environmental Economics and Management 9, 1–13.
Martin, P., Hine, D.W., 2018. Using behavioural science to improve Australia's environmental regulation. Rangel. J. 39 (6), 551–561.
Mathijs, E., Bijttebier, J., Accatino, F., Feindt, P.H., Gavrilescu, C., Manevska-Tasevska, G., Meuwissen, M.M.P., Ollendorf, F., Peneva, M., san Martín, C., 2022. A resilience-enabling environment for farming systems: patterns and principles. In: Meuwissen, M.M.P., Feindt, P.H., Garrido, A., Mathijs, E., Soriano, B., Urquhart, J., Spiegel, A. (Eds.), Resilient and Sustainable Farming Systems in Europe: Exploring Diversity and Pathways. Cambridge University Press, pp. 302–320.
Matland, R.E., 1995. Synthesizing the implementation literature: the Ambiguity-Conflict Model of policy implementation. J. Publ. Adm. Res. Theor. 5 (2), 145–174.
Matzdorf, B., Kaiser, T., Rohner, M.S., 2008. Developing biodiversity indicator to design efficient agri-environmental schemes for extensively used grassland. Ecol. Indicat. 8 (3), 256–269.
Mayring, P., 2000. Qualitative content analysis. Forum Qualitative Sozialforschung 1 (2). Article 20.
Micha, E., Areal, F.J., Tranter, R.B., Bailey, A.P., 2015. Uptake of agri-environmental schemes in the less-favoured areas of Greece: the role of corruption and farmers' responses to the financial crisis. Land Use Pol. 48, 144–157.
Nilsen, P., Stahl, C., Roback, K., Cairney, P., 2013. Never the twain shall meet? – a comparison of implementation science and policy implementation research. Implement. Sci. 8, 63.
Nitsch, U., 2009. *Bönder, Myndigheter Och Naturbetesmarker*: Centrum För Biologisk Mångfald.
Nordberg, A., Asplund, L., 2020. Förenkling av åtagandeplaner för betesmarker och slåtterängar. Jönköping: Swedish Board of Agriculture.
Pe'er, G., Bonn, A., Bruelheide, H., Dieker, P., Eisenhauer, N., Feindt, P.H., Hagedorn, G., Hansjurgens, B., Herzon, I., Lomba, A., Marquard, E., Moreira, F., Nitsch, H., Oppermann, R., Perino, A., Roder, N., Schleyer, C., Schindler, S., Wolf, C., Lakner, S., 2020. Action needed for the EU Common Agricultural Policy to address sustainability challenges. People Nat. 2 (2), 305–316.
Pe'er, G., Finn, J.A., Díaz, M., Birkenstock, M., Lakner, S., Röder, N., Kazakova, Y., Šumrada, T., Bezák, P., Concepción, E.D., 2022. How can the European Common Agricultural Policy help halt biodiversity loss? Recommendations by over 300 experts. Conservation Letters, e12901.
Peerlings, J., Polman, N., 2009. Farm choice between agri-environmental contracts in the European Union. J. Environ. Plann. Manag. 52 (5), 593–612.
Pelve, M.E., Spörndly, E., Olsson, I., Glimskär, A., 2020. Grazing and fouling behaviour of cattle on different vegetation types within heterogeneous semi-natural and naturalised pastures. Livest. Sci. 241, 104253.
Persson, U.M., Alpízar, F., 2013. Conditional cash transfers and payments for environmental services—a conceptual framework for explaining and judging differences in outcomes. World Dev. 43, 124–137.
Peters, B.G., Capano, G., Howlett, M., Mukherjee, I., Chou, M.H., Ravinet, P., 2018. Designing for Policy Effectiveness: Defining and Understanding a Concept. Cambridge University Press, Cambridge.
Pope, C., Ziebland, S., Mays, N., 2006. Analysing qualitative data. In: Pope, C., Mays, N. (Eds.), Qualitative Research in Health Care, third ed. Blackwell Publishing, pp. 63–81.
Reidsma, P., Accatino, F., Appel, F., Gavrilescu, C., Krupin, V., Manevska-Tasevska, M., Meuwissen, M.P.M., Peneva, M., Severini, S., Soriano, B., Urquhart, J., Zawalinska, K., Zinnanti, C., Paas, W., 2023. Alternative systems and strategies to improve future sustainability and resilience of farming systems across Europe: from adaptation to transformation. Land Use Pol. 134, 106881.
Schulze, C., Matzdorf, B., 2023. The institutional design of agri-environmental contracts—how stakeholder attitudes can inform policy making. Q Open 3 (1), qoad001.
Sim, J., Saunders, B., Waterfield, J., Kingstone, T., 2018. Can sample size in qualitative research be determined a priori? Int. J. Soc. Res. Methodol. 21 (5), 619–634.
Shipley, J.R., Frei, E.R., Bergamini, A., Boch, S., Schulz, T., Ginzler, C., et al., 2024. Agricultural practices and biodiversity: conservation policies for semi-natural grasslands in Europe. Curr. Biol. 34 (16), R753–R761.
Sollenberger, L.E., Kohmann, M.M., Dubeux Jr, J.C., Silveira, M.L., 2019. Grassland management affects delivery of regulating and supporting ecosystem services. Crop Sci. 59 (2), 441–459.
Stoate, C., Baldi, A., Beja, P., Boatman, N.D., Herzon, I., Van Doorn, A., et al., 2009. Ecological impacts of early 21st century agricultural change in Europe–a review. J. Environ. Manag. 91 (1), 22–46.
Swedish Board of Agriculture, 2022a. SJVFS 2022:28 Statens Jordbruksverks Föreskrifter Och Allmänna Råd Om Miljöersättningar, Djurvälfärdsersättningar Och Kompensationsstöd.
Swedish Board of Agriculture, 2022b. SJVFS 2022:29 Statens Jordbruksverks Föreskrifter* Och Allmänna Råd Om Direktstöd Och Grundvillkor.
Swedish Board of Agriculture, 2023. Sveriges Miljömål: Betesmarker Och Slåtterängar.
Wach, E., Ward, R., 2013. Learning about qualitative document analysis. IDS Practice Paper in Brief, report 13. The Institute of Development Studies and partner organisations. Brighton, UK.
Waldén, E., 2018. Restoration of Semi-natural Grasslands: Impacts on Biodiversity, Ecosystem Services and Stakeholder Perceptions. Department of Physical Geography, Stockholm University.
Waldén, E., Lindborg, R., 2018. Facing the future for grassland restoration – what about the farmers? J. Environ. Manag. 227, 305–312.
Waldén, E., Jakobsson, S., 2017. The future of semi-natural pastures in Sweden. In: Report (English Version), Symposium and Workshop in Jönköping March 8-9th 2017.
Waylen, K.A., Martin-Ortega, J., 2018. Surveying views on payments for ecosystem services: implications for environmental management and research. Ecosyst. Serv. 29, 23–30.
Wuepper, D., Huber, R., 2022. Comparing effectiveness and return on investment of action-and results-based agri-environmental payments in S witzerland. Am. J. Agric. Econ. 104 (5), 1585–1604.
Wunder, S., 2015. Revisiting the concept of payments for environmental services. Ecol. Econ. 117, 234–243.
Yang, Y., Li, Z., Zhang, Y., 2021. Incentives or restrictions: policy choices in farmers' chemical fertilizer reduction and substitution behaviors. Int. J. Low Carbon Technol. 16 (2), 351–360.
Zinngrebe, Y., Pe'er, G., Schueler, S., Schmitt, J., Schmidt, J., Lakner, S., 2017. The EU's ecological focus areas – how experts explain farmers' choices in Germany. Land Use Pol. 65, 93–108.