

# BOOK OF ABSTRACTS

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## I. SESSION DESCRIPTION

### ID: S1b

Motivating contract design for the provision of ecosystem services and biodiversity in agriculture

### Hosts:

	Title	Name	Organisation	E-mail
Host:		Matzdorf	Leibniz Centre for Agricultural Landscape Research (ZALF)	matzdorf@zalf.de
Co-host(s):		Mette Termansen	University of Copenhagen (UCPH)	mt@ifro.ku.dk
		Katrin Prager	University of Aberdeen (UNIABDN)	<a href="mailto:katrin.prager@abdn.ac.uk">katrin.prager@abdn.ac.uk</a>
		Eszter Kelemen	Environmental Social Science Research Group (ESSRG)	kelemen.eszter@essrg.hu

### Abstract:

For decades, large-scale attempts have been made to make agricultural production more environmentally friendly by means of incentives including, crucially, financial instruments. However, not least in Europe, it has not been possible to bring about a real change towards a conscious provision of biodiversity and ecosystem services through financial incentives alone. The causes are often path dependencies in the design of complex state instruments such as agri-environmental programmes, and a lack of political will to effectively and consistently implement new approaches. It is therefore crucial that science and practice work together to develop new models that illustrate how innovative incentive instruments can be designed. This work should also vitally include elements of 'bottom-up' or 'co-designed' knowledge, as we plan to discuss in another session. Further efforts are needed to explore more innovative approaches to improving existing programmes. We are particularly interested in how agri-environmental contracts can be integrated into the value chain, and also how different approaches can be combined to develop more fair, flexible and attractive instruments for delivering environmental public goods through agriculture. In this session, we will present empirical research results including the perspective of practitioners that contribute to the development and implementation of these innovative contract models to produce more biodiversity and ecosystem services in the agricultural landscape. We bring together results from two EU H2020 research projects, Contracts2.0 and Effect, on innovative contract design and welcome insights, experiences and research results from other projects.

### Goals and objectives of the session:

Exchange on novel contract design between researchers from different disciplines, including the perspective of practitioners, to synthesise key lessons learned regarding the development and feasibility of innovative contract models.

### Planned output / Deliverables:

Correspondence or perspective paper

### Session format:

Standard session (presentations)

### Voluntary contributions accepted:

Yes, I allow any abstract to be submitted to my session for review

### Related to ESP Working Group/National Network:

[Sectoral Working Groups: SWG 1 – ES in Agricultural production systems](#)

## II. SESSION PROGRAM

**Date of session:** Tuesday, 11 October

**Time of session:** 11–12:30

### Timetable speakers

Time	First name	Surname	Organization	Title of presentation
11:00	Bettina	Matzdorf	Leibniz Centre for Agricultural Landscape Research (ZALF)	Introduction into the session
11:12	Eszter	Kelemen	ESSRG	Assessing innovative agri-environmental contracts from the policy perspective. Lessons from a Delphi study
11:25	Paula	Castro	University of Coimbra (CFE-UC)	The willingness to change towards more ecosystem services'-friendly farming practices: what is missing?
11:38	Marion	Mehring	ISOE – Institute for Social-Ecological Research	Visions for biodiversity – Acceptance of transformative biodiversity measures by agriculture and forestry: a case study from Germany
11:51	Manuela	Zindler	University of Bayreuth	How different practitioners would like to improve agri-environmental schemes: Suggestions from farmers and stakeholders involved in nature management
12:04	Lívia	Madureira	UTAD (universidade de Trás-os-Montes e Alto Douro)	ECOSYSTEMS SERVICES SUPPLY BY AGRICULTURE: USING CHOICE EXPERIMENTS TO ESTIMATE TRADE-OFFS BETWEEN MONETARY AND NON-MONETARY INCENTIVES
12:17	Emmanouil	Tyllianakis	University of Leeds	A window into land managers' preferences for new forms of agri-environmental schemes: evidence from a post-Brexit analysis

**Date of session:** : Tuesday, 11 October

**Time of session:** 16–17:30

### Timetable speakers

Time	First name	Surname	Organization	Title of presentation
16:00	Bettina	Matzdorf	Leibniz Centre for Agricultural Landscape Research (ZALF)	Is there a potential to support agri-environmental measures by a governmental label? – Consumer preferences in six European countries
16:13	Wojciech	Zawadzki	University of Warsaw	Farmers' preferences for practice- vs. result-based agri-environmental-climate measures
16:26	Katrin	Prager	University of Aberdeen	Flexibility and Accessibility: Hybrid designs for results-based contracts in Ireland, England and Flanders
16:39	Liesbeth	Dries	Wageningen University	Measuring private transaction costs in payments for environmental services: an application to collective agri-environmental schemes in the Netherlands
16:52	Margarethe	Schneider	Leibniz Centre for Agricultural Landscape Research (ZALF)	Exploring farmers' motives for collective action: A Q study on collaboration in Dutch agri-environment schemes
17:05	Mette	Termansen	Copenhagen University	Agri-environmental scheme design: Insights from integrated environmental-economic modelling
17:18	<a href="#">Click here to enter text.</a>	Hosts	<a href="#">Click here to enter text.</a>	Final Discussion

### III.ABSTRACTS

*Abstracts are ordered based on the session program. The first author is the presenting author unless indicated otherwise.*

*1. Type of submission: Abstract*

S. Sectoral Working Group sessions: S1b – Motivating contract design for the provision of ecosystem services and biodiversity in agriculture

A window into land managers' preferences for new forms of agri–environmental schemes: evidence from a post–Brexit analysis

*Presenting author: Emmanouil Tyllianakis*

*Other author(s):* Julia Martin–Ortega, Pippa Chapman, Guy Ziv, Joseph Holden, Michael Cardwell, Duncan Fyfe,

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Securing the provision of environmental public goods from agriculture is central to addressing the critical challenge of ensuring global food security while halting ecosystem degradation. Agri–environment schemes (AES) are considered to have a key role to play in supporting the transition to more sustainable ways of producing food. Existing evidence suggests that farmers are generally willing to enrol in AES for the delivery of environmental features, but robust policy support requires further exploration of land managers' preferences and how these interplay with contract features to achieve higher environmental targets. We undertook a discrete choice experiment with land managers in post–Brexit UK, with what can be considered a 'benchmark' sample of AES–inclined land managers. This provides a window into the future of the UK farming landscape, but also, given the revision of the European Union's Common Agricultural Policy and other international discussions, it also provides a window into land managers' preferences for new contract features more widely. Our results suggest that (such type of) land managers are likely to be receptive to a transition to result–based, collaborative schemes supporting landscape–wide interventions in alignment with net zero agendas. These interventions could be done in exchange for relatively moderate levels of compensation, supported by advice provided by peers. While this raises promise, our results also emphasize challenges, particularly to attract those less AES–inclined land managers. Payments levels probably need to remain close to the current ones (not lower), farmers' awareness and support for net–zero agendas need to be reinforced and more interaction between land managers and policy makers will be needed.

*Keywords:* Discrete Choice Experiment, Environmental Land Management scheme; Net–Zero; results–based schemes; willingness to accept

*2. Type of submission: Abstract*

[S. Sectoral Working Group sessions: S1b – Motivating contract design for the provision of ecosystem services and biodiversity in agriculture](#)

Visions for biodiversity – Acceptance of transformative biodiversity measures by agriculture and forestry: a case study from Germany

*Presenting author: Marion Mehring*

*Other author(s):* Naomi Bi, Anna Brietzke, Konrad Götz, Melina Stein, Immanuel Stieß, ,

*Affiliation:* ISOE – Institute for Social–Ecological Research, Germany

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The improvement of biodiversity is a central goal of the international community. Biodiversity conservation is directly related to food production, groundwater quality, and security of supply for the population. The decline in biodiversity is caused by a complex interplay of many factors. This is why social science perspectives are of major significance in addition to natural science and technology. After all, if measures to protect and promote biodiversity are to be implemented successfully, they must be actively accepted and applied by key stakeholders who have a major influence on the management of cultivated landscapes. Acceptance of these measures is in turn influenced by individual factors such as attitudes, value orientations and institutional settings.

With this study, we present results of a social empirical project on attitudes and awareness of the key actors of agriculture and forestry with regard to biodiversity loss and conservation measures. The willingness of these actors to actively apply biodiversity–promoting measures is also examined. Implementing a quantitative research design, we conducted a survey with 500 participants from both actor groups, respectively.

The results provide a better understanding of how transformative practices and actions towards biodiversity conservation can be achieved. To this end, further knowledge about the experience and acceptance among the mentioned key actors is important.

*Keywords:* agriculture, attitude, biodiversity, forestry, transformative practices

### *3. Type of submission: Abstract*

#### **S. Sectoral Working Group sessions: S1b – Motivating contract design for the provision of ecosystem services and biodiversity in agriculture**

The willingness to change towards more ecosystem services'-friendly farming practices: what is missing?

*Presenting author: Paula Castro*

*Other author(s): Filipa Marques, Catarina Martins, Anabela Paula*

*Affiliation: University of Coimbra (CFE-UC), Portugal*

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The demand for food by a rapidly growing population influences agricultural land use, profoundly affecting the provision of multiple ecosystem services (ES). It is essential to make agriculture productive but, at the same time, environmentally friendly. One of the ways is by creating financial incentives. However, without a better perspective on whether farmers have a sense of what ES are, the potential they have for value creation, together with a clear notion of whether they are willing to adapt or change farming practices, the success of financial instruments is seriously affected. The establishment of Agrienvironmental contracts integrated into the value chain will not be sustainable over time.

This research follows a bottom-up process where farmers were heard regarding their perceptions of the value of agricultural ES and their willingness to change toward biodiversity conservation and promoting ES on their farms. In the scope of the CULTIVAR project, a questionnaire survey was conducted to 77 farmers in the Centre Region of Portugal (<https://icultivar.pt/>).

The results showed that most respondents perceived their agricultural activity as very important, considered they should be recognised for protecting the ES and the (90%), and are willing to change their current practices (80%) to become more environmentally friendly. However, the cost-benefit, economic return and the lack of information and technical support are significant drivers for farmers to change. Future policies should consider that when elaborating on Agrienvironmental programmes and incentives mechanisms.

Farmers recognise the importance of biodiversity and the ES supplied by agriculture, but something is still missing to achieve a new paradigm. Overall results will be discussed with these stakeholders to co-create suitable and tailored solutions (including financial incentives/mechanisms explicitly targeting the valorisation of ES) for the agri-food sector in Portugal.

*Keywords:* ecosystem services, sustainable agriculture, farmers' perceptions, financial incentives

4. Type of submission: Abstract

S. Sectoral Working Group sessions: S1b – Motivating contract design for the provision of ecosystem services and biodiversity in agriculture

ECOSYSTEMS SERVICES SUPPLY BY AGRICULTURE: USING CHOICE EXPERIMENTS TO ESTIMATE TRADE-OFFS BETWEEN MONETARY AND NON-MONETARY INCENTIVES

*Presenting author:* Lúvia Madureira

*Other author(s):* ANA F., FONSECA, CARLOS, P. MARQUES

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Payments for ecosystems services (ES) have been used worldwide to incentivize land managers to adopt more sustainable land uses and management practices. Public funded access to farm advice appears to be valued by farmers because the successful adoption of sustainable land management practices requires intensive knowledge. Climate change adds complexity to decision-making, due to trade-offs between ES. Farmers, as other land managers, need knowledge to support their decisions. Non-market valuation methods, such as Choice Experiments (CE) have been applied to estimate farmers' willingness to accept (WTA) monetary compensations to adopt sustainable practices, including conservation agriculture. This paper shows this method ability to assess trade-offs between the WTA monetary compensation and the public funded supply of advisory services, accounting additionally for subjective socio-psychologic variables, such as perceptions or emotions. The paper goals are twofold. Showing that CE can be useful to measure trade-offs between different type of policy incentives and to identify the mix showing more effective to influence land managers decision-making towards sustainability transitions. Second goal is providing empirical evidence for policy recommendations on public schemes support ES provision. A survey was conducted in the Mediterranean Uplands in Portugal. These landscapes are extremely vulnerable to climate change entailing trade-offs between the supply of different ES. A questionnaire was designed to implement CE collecting also farmer's perceptions (latent variables). Data analysis from 253 valid questionnaires showed farmers are willing to exchange monetary compensations for knowledge services, in particular when more demanding soil conservation practices are at stage. Results also show farmer's perception of higher knowledge needs increases WTA, and that being socially acknowledged reduces WTA. Fire risk perception increases WTA and the perception of collective effort to reduce fire risk at landscape level reduces WTA. The results enable to produce recommendation on more effective incentives mixes beyond simpler ES payments.

*Keywords:* Payments for ecosystem services, Choice Experiments, Sustainable farm practices, Latent variables, WTA

5. Type of submission: Abstract

S. Sectoral Working Group sessions: S1b – Motivating contract design for the provision of ecosystem services and biodiversity in agriculture

Assessing innovative agri–environmental contracts from the policy perspective. Lessons from a Delphi study

*Presenting author: Eszter Kelemen*

*Other author(s):* Boldizsár Megyesi, Bettina Matzdorf, Erling Andersen, Lenny G.J. van Bussel, Myriam Dumortier, Céline Dutilly, Marina García-Llorente

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Innovative agri–environmental contracts are increasingly studied in the literature, but their adoption is relatively slow and geographically scattered. A three–round online Policy Delphi study was carried out between March and December 2021 as part of the Contracts2.0 project to investigate how and under which circumstances novel contractual solutions could be better implemented within the European policy context. Altogether 51 experts participated in the study from 17 European countries, including those 9 countries where Contracts2.0 Policy Innovation Labs were established.

The study found that result–based and collective contractual elements are expected to be the most promising for amending currently widespread action–based agri–environmental measures. Although considered beneficial from several aspects, value chain contracts were perceived less synergistic with the policy environment. The Common Agricultural Policy (CAP) Pillar 2 measures were highlighted as the key policy area where novel contracts could be implemented, but Pillar 1 eco–schemes, being launched in the post–2022 CAP, could also provide a suitable framework for testing and implementation.

Innovative contracts were envisaged to be adopted in iterative steps, not as substitutes for current payment schemes but rather as additional incentives. To ensure that innovative contracts fit their purpose and effectively deliver environmental benefits, contracts need to be flexibly embedded into the specific socio–political and ecological contexts, which also means that some countries can more quickly and easily adopt innovative contract designs, while others might stick longer to the current mainstream solutions. Such an incremental approach allows contractual innovations to capitalise on existing best practices, but also implies the risk that innovative contracts remain marginal, cannot substantially change farmers' behaviour, and therefore fail to improve environmental conditions.

*Keywords:* agri–environmental and climate measures, Common Agricultural Policy, innovative contracts, Policy Delphi

6. Type of submission: Abstract

S. Sectoral Working Group sessions: S1b – Motivating contract design for the provision of ecosystem services and biodiversity in agriculture

How different practitioners would like to improve agri–environmental schemes: Suggestions from farmers and stakeholders involved in nature management

*Presenting author: Manuela Zindler*

*Other author(s):* Maria Haensel, Thomas Koellner

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Agri–environmental schemes (AES) are an important policy instrument within the European Union for promoting environmental conservation in agricultural landscapes. Due to the voluntary nature of AES, attractiveness to farmers and actors working in counselling or implementation of measures from a nature protection perspective (nature managers) is very important. To ensure a high level of participation, stakeholders' ideas and suggestions need to be considered. For tailored adaption of schemes, it is also necessary to consider differences between subgroups of farmers as well as between farmers and nature managers.

We analyzed survey results of 825 farmers and 118 nature managers in Bavaria, Germany regarding their ideas for improvements of AES. We determined different groups of farmers using a cluster analysis based on variables like socio–demographics, relationship with ecosystem services and farm characteristics. A qualitative content analysis was applied to categorize suggestions made by both groups. We then compared the classified answers between the (sub–)groups of farmers and nature managers.

The results revealed that both groups are aware of the importance of nature protection within agriculture and acknowledge the necessity of (financial) support programs. Nevertheless, farmers show a higher focus on practices in arable land, on practicability and on profitability of these practices. Contrary, nature managers tend towards proposing more ideas related to policies, that primarily target nature and species protection as well as biodiversity. Furthermore, differences among farmers exist, influenced by farm characteristics like the farm system (organic, conventional) and the farm mode (full–time, part–time).

These findings are important for a more nuanced design of future AES, accounting for different background conditions. According to the study results, policy makers should focus on including perspectives from different groups of stakeholders. Additionally, future schemes should include more options regarding regional programs and enable higher levels of flexibility and practicability.

*Keywords:* Agri–environmental schemes, nature protection, farmers, stakeholder involvement, ecosystem services

*7. Type of submission: Invited speaker abstract*

Agri–environmental scheme design: Insights from integrated environmental–economic modelling

*Presenting author: Mette Termansen*

*Other author(s): Raphael Filippelli, Berit Hasler*

*Affiliation: Copenhagen University, Denmark*

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Agri–environment schemes (AES) have become a major policy instrument for protecting farmland biodiversity and improving environmental quality (eg water quality) world–wide. AES provide financial support for farmers to implement specific actions that benefit the environment. A key question for improving AES is how to design payments to farmers in a way that improves cost–effectiveness. Integrated ecological–economic modelling is one tool that allows us to explore how we can achieve cost–effective AES.

In economics and ecology, models play an important role in developing management and policy recommendations. A typical ecological–economic model in this context consists of ecological, economic and landscape components, which interact with each other. In AES design, ecological–economic modelling allows us to link actions undertaken by farmers to predicted environmental outcomes. The economic component usually starts from a theoretically and behaviourally consistent assumption about how farmers behave. The ecological aspect focuses on the environmental outcomes that benefit a measure of biodiversity, or for example changes in water quality. The integrated ecological–economic model allows us to explore trade–offs and complementarities between changes in land use and environmental outcomes, and to trace out how the aggregate costs of meeting some environmental target change with how the AES is designed.

In this paper, we focus on AES design for water quality improvements using a spatially explicit integrated model. We compare the performance of AES with different design features; we compare i) AES with payments for practices versus payments for results, ii) AES based on spatial targeting through zoning, and iii) schemes based on trading mechanisms to achieve a catchment level goal. Uniform payments for implementation of practices serves as a baseline to evaluate the performance of more novel design mechanisms.

We adapt a high resolution spatially specific integrated model (TargetEconN) and apply it to Odense catchment to test alternative AES design.

*Keywords: Agro–Environmental Schemes; Design; Water Quality; Results–based; Cost–effectiveness*

*8. Type of submission: Invited speaker abstract*

Farmers' preferences for practice- vs. result-based agri-environmental-climate measures

*Presenting author: Wojciech Zawadzki*

*Other author(s):* Mikołaj Czajkowski, Katarzyna Zagórska, Wiktor Budziński, Bettina Matzdorf, Christoph Schulze, Jens Rommel, Julian Sagebiel

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We investigate farmers' preferences for new agri-environmental-climate measures (AECM) that are aimed at conservation of biodiversity on arable land, with particular focus on distinction between result-based and practice-based contracts. The topic of biodiversity protection matters because of the biodiversity crisis in agriculture and an ongoing scientific discussion about how to introduce results-based payments for biodiversity on arable land. There are many examples of results-based approaches across Europe being used to improve biodiversity, but relatively few examples on arable (cultivated) land.

We use a stated-preference-based Discrete Choice Experiment to observe farmers' willingness to enroll their arable land into the two different types of contracts: result-based and practice-based. The practice-based biodiversity-conservation contract included an ambitious combination of four land-management requirements. The result-based contract was presented as one in which payments depend on expert-measured multi-level biodiversity index. Respondents also have the opt-out option, that is a possibility to declare that some part of their arable land will not be the subject to any agri-environmental contract.

Inspired by ongoing discussion, we incorporated aspects related to collective implementation and land-tenure into the study. From the perspective of practitioners, there is interest in combining result-based and collective contracts. We include a bonus payment dependent on the biodiversity level of the area surrounding one's farm, measured at landscape level. On top of that, the study involves a number of altitudinal questions about the prospective novel contract design features.

The study was conducted in January 2022 in four countries: Netherlands, Germany, Poland, and Czechia using a representative sample of a total 1 833 farmers. The results offer an excellent opportunity to apply the multiple discrete-continuous extreme value (MDCEV) model, which allows to account for both the - the discrete (the alternative chosen) and continuous (the area of arable land enrolled to specific contract) decisions.

Our results highlight benefits and challenges of using a results-based approach on arable land, as well as ameliorate the understanding of what proxy measures of biodiversity quality are acceptable to farmers. Moreover, we focus on preference heterogeneity by considering such factors as risk preferences, environmental concerns, uncertainty over environmental outcomes or trust. There are very few studies concerning the hot policy issue of using

results- vs. practice-based agri-environmental-climate measures, and our results make a clear contribution to this literature. Our results have a direct impact on the formulation of the EU Common Agricultural Policy, as creating appropriate, properly balanced contracts can satisfy both farmers and the society, ensuring the sustainability of biodiverse agriculture and efficiency of economic instruments used to support it.

*Keywords:* agri-environmental-climate measures, result-based payments, biodiversity protection, farmers' preferences, Discrete Choice Experiment

*9. Type of submission: Invited speaker abstract*

Exploring farmers' motives for collective action: A Q study on collaboration in Dutch agri-environment schemes

*Presenting author: Margarethe Schneider*

*Other author(s):* Rena Barghusen, Bettina Matzdorf

*Affiliation:* Leibniz Centre for Agricultural Landscape Research (ZALF), Germany

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To improve the ecological effectiveness of agri-environment-climate measures (AECM), collective approaches to coordinate AECM beyond the farm level have emerged, which are characterised by different levels of cooperation between individual farmers. In the Netherlands, all AECM have to be realised collectively since 2016. As participation is voluntary, understanding farmers' perception of the approach and motives to join is crucial to improve or design new collective AECM. This study aims to identify perceived advantages and disadvantages and explore Dutch farmers' motives to participate in collective AECM. A Q study reveals three dominant motivational views: a collective-oriented, a business-oriented and an environment-oriented perspective. While farmers still wish for more flexibility, a better integration of their knowledge and enhanced communication, clear preferences for the collective approach shows that even in cultures with strong values of independence collective AECM are possible, as farmers' autonomy can be strengthened through the cooperation.

*Keywords:* agri-environment-climate measures; landscape level approach; cooperation; farmer motivation; Q methodology

*10. Type of submission: Invited speaker abstract*

Flexibility and Accessibility: Hybrid designs for results-based contracts in Ireland, England and Flanders

*Presenting author: Katrin Prager*

*Other author(s):* Jennifer Dodsworth, Annabelle LePage, James Moran, Sven Defrijn, , ,

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Payment-by-results (PBR) agri-environment contracts can be seen as a double-edged sword: on one hand they purport to provide farmers with the flexibility to decide their own management approaches to deliver environmental public goods and incentivise farmers to 'do more to get more'. Further, the reduced paperwork for evidence is also understood as a key benefit, making the scheme administration more accessible to farmers as 'the result is the evidence', rather than the higher levels of recording necessary for contracts in an action-based scheme. However, PBR contracts are also perceived to contain an element of risk, most significantly that of no payment to the farmer if they fail to meet a minimum target standard. This risk is an important barrier to incentivising PBR scheme uptake.

'Hybrid' contracts aim, through various approaches, to alleviate this perceived risk. In this paper, we discuss how hybridity and flexibility have been operationalised as key incentivising factors in PBR contracts, at various stages of development, in Ireland, England and Flanders (Belgium). All three of these countries have piloted PBR agri-environment projects, and have considered the notion of 'hybridity' to ease the perception of risk and to increase support within their agri-environment schemes.

In Ireland, the 'hybrid' contract begins with the results-based elements, with further financial support for specific 'action-based' interventions (e.g. Burren Programme, Hen Harrier Project, Pearl Mussel Project, Wild Atlantic Nature, Bride Project). These "supporting actions" are specifically designed and targeted to improve the assessment score to achieve better results-based payments in future. In England, within the PBR test and trial project to inform the design of the Environmental Land Management scheme, a minimum management contract has been developed, which is supplemented by a main results-based scheme to alleviate the risk of no payment. In Belgium, a main action-based scheme with a top up results-based bonus has been discussed as a potential contract for future development. Our insights illustrate the different ambitions and approaches taken, highlighting considerable flexibility in integrating results-based elements.

*Keywords:* payments by results, policy design, effective agri-environmental contracts, hybrid contracts



*11. Type of submission: Invited speaker abstract*

Measuring private transaction costs in payments for environmental services: an application to collective agri-environmental schemes in the Netherlands

*Presenting author: Liesbeth Dries*

*Other author(s): Melody Splinter*

*Affiliation: Wageningen University, Netherlands*

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Agri-environmental schemes (AES) are an important policy instrument under Pillar II of the Common Agricultural Policy for providing environmental services from agriculture. Since 2016, AES can involve – besides individual contracts – also collective contracts between farmer groups and the public buyer. A collective approach is expected to improve the environmental impact and the cost-effectiveness of the schemes. Earlier research has shown that AES can involve substantial transaction costs, but knowledge on the distribution and level of transaction costs in the new collective schemes is lacking. This research brings together insights from the literature on the measurement of transaction costs related to AES and formulates a conceptual model for measuring these transaction costs. The framework is then applied to the Dutch AES in which farmer collectives act as a mediator between farmer-members and the Dutch government. In particular, we study the distribution of private transaction costs in the collective scheme and compare this to the distribution under the former individual AES approach. Results show that transaction costs have increased substantially for the farmer collective, while they decreased for public actors. Moreover, the execution of the Dutch collective scheme depends for a large part on volunteers, whose costs are not accounted for in official records. Though the Dutch collective scheme appears successful in terms of coordination, we conclude that it carries huge private transaction costs and its dependency on volunteers makes it fragile in the long run.

*Keywords:* agri-environmental scheme, collective, Netherlands, transaction costs, meadow birds



*12. Type of submission: Invited speaker abstract*

Is there a potential to support agri–environmental measures by a governmental label? – Consumer preferences in six European countries

*Presenting author: Bettina Matzdorf*

*Other author(s):* Christoph Schulze, Jens Rommel, Julian Sagebiel, Mikołaj Czajkowski

*Affiliation:* Leibniz Centre for Agricultural Landscape Research (ZALF)

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Although AECM is implemented on a relatively large proportion of agricultural land across Europe, the environmental situation has not improved significantly or has deteriorated over the years, particularly in the area of biodiversity. This is partly due to the fact that not enough targeted nature conservation measures are being implemented (often called dark green measures). A positive effect is often only achieved when a critical proportion of such measures is achieved at the landscape level.

Often, such nature conservation measures are also more costly to implement and administer and less easy to integrate into farm processes and farm structures. Successful/effective measures often require close cooperation with nature conservation experts and advice to farmers. It is therefore not surprising that these types of targeted conservation measures are less attractive to farmers and administrators. This is all the more true as these targeted measures can also only be rewarded on a cost–covering basis.

It would therefore be crucial here in particular that the implementation of such measures receive visible recognition and that additional financial incentives make implementation more attractive for farmers. One approach could be to make the implementation of these measures and the environmental services they provide more visible to consumers via a biodiversity label. On the one hand, this could create a market advantage for farmers who substantially participate in such nature conservation measures, and on the other hand, additional financial incentives could be paid to farmers through higher product prices. This principle already works for products labelled under ‘EU Bio’. The hypothetical new product label was inspired by qualitative interviews with food industry experts, and it can be combined with the organic label. Based on this idea of a governmental biodiversity label we answer following research questions:

1. What is the additional WTP for governmental biodiversity label? To what extent do WTP values differ across consumer groups and EU countries/regions?



2. How does a governmental biodiversity label perform in comparison to the EU Organic label?

We apply a Discrete Choice Experiment with 12000 consumers from six European countries – German, Poland, Spain, Netherlands, Hungary and Sweden. In the DCE the label is applied to one grassland related product (milk) and one arable land related product (flour).

The results allow conclusions to be drawn about EU-wide preferences for biodiversity-friendly products. Results inform about the potential to generate funds for biodiversity conservation through consumer engagement as additional approach to direct payments via agri-environmental and climate measures.

*Keywords:* biodiversity policy, label based approaches, consumer