CONSOLE

CONTract Solutions for Effective and lasting delivery of agri-environmental-climate public goods by EU agriculture and forestry

Research and Innovation action: H2020 - GA 817949

Deliverable 3.3
Synthesis of opinions to implement suggested contract solutions and lessons learned

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QUALITY ASSURANCE PROCEDURES

An internal review and validation process were applied to ensure the quality and correctness of the current deliverable. Draft version was developed by LUKE (Hamunen, K., Haltia, E., Kurttila, M., Leppänen, J., Tarvainen, O., Viitala, E-J.) and reviewed by Andreoli, M., Berzina, I., Bradfield, T., Canaj, E., Cosgrove, M., D'Alberto, R., De Geromino, G., Dupraz, P., Eichhorn, T., Harmanny, K., Hennessy, T., Holden, J., Issanchou, A., Malak-Rawlikowska, A., Nikolov, D., Paillard, H., Rizzolo, D., Runge, T., Schaller, L., Schulp, N., Tyllianakis, E., Viaggi, D.

TABLE REVISION HISTORY DELIVERABLE

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Project Consortium

N°	Participant organisation name	Country
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2	REGIONE EMILIA ROMAGNA	IT
3	CONSORZIO DELLA BONIFICA DELLA ROMAGNA OCCIDENTALE	IT
4	UNIVERSITAET FUER BODENKULTUR WIEN	AT
5	Ecorys Brussels N.V.	BE
6	EUROPEAN LANDOWNERS ORGANIZATION	BE
7	ASSOCIATION OF AGRI-ENVIRONMENTAL FARMERS	BG
8	INSTITUTE OF AGRICULTURAL ECONOMICS	BG
9	JOHANN HEINRICH VON THUENEN-INSTITUT, BUNDESFORSCHUNGSINSTITUT FUER LAENDLICHE RAEUME, WALD UND FISCHEREI	DE
10	EVENOR TECH SL	ES
11	ASOCIACIÓN AGRARIA JÓVENES AGRICULTORES DE SEVILLA	ES
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17	INSTITUT NATIONAL DE LA RECHERCHE AGRONOMIQUE	FR
18	UNIVERSITY COLLEGE CORK - NATIONAL UNIVERSITY OF IRELAND, CORK	IE
19	UNIVERSITA DI PISA	IT
20	ZEMNIEKU SAEIMA	LV
21	STICHTING VU	NL
22	STICHTING HET WERELD NATUUR FONDS-NEDERLAND	NL
23	SZKOLA GLOWNA GOSPODARSTWA WIEJSKIEGO	PL
24	UNIVERSITY OF LEEDS	UK
25	UNIVERSITA DI FERRARA	IT

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Table of contents

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement GA 817949

1 Summary

Land managers could be offered diffrent types of contracts to increase provision of agri-environmental climate public goods (AECPGs). CONSOLE project has focus on four novel contrac solutions (result-based contracts, contract solutions fostering collective implementation, value chain-based contract solutions, and land tenure contracts). The aim of this deliverable is gather stakeholders' views on potential challenges and solutions when implementing novel contract solutions.

According to the results of stakeholder workshops, land managers' willingness to participate in different contracts types depends on how well the contract type is known. Therefore, continuous information sharing on different types of contracts are important. It is important to raise both land managers' and extension specialists' awareness on AECPG provision and the possibilities to combine provision with existing production. Possibilities of hybrid solutions (i.e., combinations of more than one contract type) and participation of private sector need to be studied and developed further.

In result-based contracts sufficient economic compensation is the basic prerequisite for increasing their uptake. Land managers need to have a clear picture of the economic consequences of the contract. Risk of not achieving the result could be reduced with gradual compensation payments and partial pre-remuneration. Defining suitable, science-based monitoring indicators that land managers can influence, and that are easy to monitor, is important. In an ideal situation, the same indicators could be used to measure different agri-environmental benefits (e.g., biodiversity, water, carbon). Self-monitoring could increase land managers' motivation for result-based contracts.

To increase the uptake of collective contracts, it is important to ensure fair and transparent distribution of compensation between participating land managers. Collective contracts often need a leader or intermediary to gather the land managers together. The private sector has huge potential especially in value chain contracts. To increase the uptake of value chain contracts, there is a need to investigate existing and potential chains, support private organisations to engage, and define fair distribution of benefits, responsibilities, and risks. One of the main issues in land tenure contracts is the lack of available land for rent.

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Moreover, stakeholders were concerned about too strong a power of the landowner that reduces tenants' willingness to participate.

2 Introduction

2.1 Scope of Task 3.4

In practice, task 3.4 was implemented through the organisation of the stakeholder workshops. Workshops were organised in 11 countries by project partners. In these workshops, results from the land manager and stakeholder surveys (D'Alberto et al., 2022) were presented and discussed. The fundamental aim of the work in task 3.4 was to gain a deeper understanding of the challenges and potentialities of implementing novel contract solutions. Based on the feedback received from the stakeholders, it is possible to improve the proposed solutions further and identify lessons learned.

This deliverable gathers the results of the stakeholder workshops regarding implementing four contract solutions that the CONSOLE project has focussed on during its activities (namely, result-based contracts, contract solutions fostering collective implementation, value chain-based contract solutions, and land tenure contracts). In addition, the most important factors (PESTLE factors) affecting the adoption of result-based contracts are presented. The mapping of these factors began in the stakeholder survey (D'Alberto et al., 2022), and they were further discussed in the stakeholder workshops.

In this deliverable, the term land manager is used. This term refers to farmers and forest owners who make the land-use decisions on the land they manage. Land managers can be either landowners or act as tenants on the land they have rented.

2.2 Deliverable outline

In the second chapter (2.1), the organisation and data collection of the stakeholder workshops are presented. In addition, the part of the stakeholder survey, which considers mapping PESTLE factors, is presented (2.2). Chapter 2.3 presents how the collected data were analysed.

The first part of chapter 3 deals with the possibility of increasing the implementation of the four different contract types (3.1), while the second part

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reports the results that aim to increase, especially the use of the result-based contract type (3.2). Chapter 4 presents the conclusions and proposals for the next steps in developing and practical adoption of new contract types.

3 Data collection and analysis

3.1 Stakeholder workshops

The work plan for organising the national-level workshops was presented to the partners in June 2021. More accurate objectives and means to implement the workshops were planned and discussed with work package leaders during the meeting in September 2021. Comments for the work plan were also collected amongst partners in September 2021. The guiding document and the reporting sheet for organising the workshops were presented and discussed with partners in the consortium meeting in October 2021 (Annex A: Workshop plan and reporting sheet). Instructions and a draft of a PowerPoint presentation were provided for partners by LUKE.

Altogether 12 project partners from 11 different countries organised a workshop for their stakeholders, with partners acting as facilitators in the workshop (Table 1). Besides country-level workshops, a common EU-level workshop was arranged for a group of EU level participants. Materials presented in the workshops included two parts:

1) Acceptability of the four contract solutions. These materials included results from land managers and stakeholder surveys, both country-specific and common results from all participating 12 countries (D'Alberto et al. 2022). Partners were able to select the results they considered most interesting for their stakeholders.

2) Factors depicting the operational environment that influence the adoption of result-based contract types (PESTLE factors). These factors were defined based on the stakeholder survey (see chapter 2.3.2) and served as the basis for a voting.

Data materials were provided for partners via Excel files by UNIBO and LUKE. Before the workshops, the partners translated the material into their national languages. After the workshops, a summary of the outcomes was collected using the reporting sheet template.

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Workshops were held between October 2021 – March 2022 and lasted on average 3 hours. In each country, the aim was to reach between 10 to 30 participants for the workshops. The eventual number of participants varied from 5 to 32 (Table 1). The aim was to reach stakeholders from different backgrounds, organisations acting at different levels (local, regional, state), and stakeholders who are acting in different roles or having different areas of interest.

Face-to-face workshops were recommended, but each partner could decide whether to have their workshop face-to-face or virtually. Most of the workshops were held virtually due to the current pandemic situation. In Austria, due to the pandemic, instead of a discussive workshop, individual interviews were organised. Also, in Germany (TI), voting was held individually in advance.

Besides country-level workshops, a common EU-level workshop was arranged for a group of EU level participants. This workshop aimed to contribute to the credibility of the results, the feasibility of the proposed contract solutions, and policy implications at the EU level.

Table 1: Stakeholder workshops

Partner ID	Partner	Country	Abbrev.	Nr. of workshop participants (+project partners)	Form of the workshop	Timing
1	UNIBO	Italy	IT	20 (+9)	online	November 2021
2	LUKE	Finland	FI	8 (+5)	on-site	November 2021
3	BOKU	Austria	AT	8 (+2)	interviews	December 2021
4	IAE	Bulgaria	BG	20 (+3)	on-site	November 2021
5	TI	Germany	DE	13 (+1)	preliminary voting +online	February 2022
7	TRAME, INRAE	France	FR	11 (+2)	hybrid	October 2021
8	UCC	Ireland	IE	32 (+1)	online	November 2021
9	UNIPI, UNIFE	Italy	IT	6 (+4)	online	December 2021
10	ZSA	Latvia	LV	5 (+4)	on-site	January 2022
11	VUA	Netherlands	NL	5 (+2)	online	March 2022
12	SGGW	Poland	PL	17 (+3)	online	January 2022
13	UoL	United Kingdom	UK	16 (+5)	on-site	March 2022
14	ECORYS, AREFLH, ELO	EU level		6 (+10)	online	February 2022
Total				167 (+51)		

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3.2 Stakeholder survey

The stakeholder survey was conducted by 14 project partners between February and July 2021 (Table 2). Altogether 486 responses were received. A more detailed description of the data collection can be found in the project Deliverable 3.2. *Land managers' and stakeholders' opinions on implementation of suggested contract solutions based on survey results* (D'Alberto et al., 2022).

This Deliverable 3.3 deals only with the results of the third part of the stakeholder survey. These results consider external factors (PESTLE factors) that affect the adoption of result-based contracts.

Table 2: Stakeholder workshops

Partner ID	Partner	Country	Nr. of respondents contacted	Nr. of questionnaires collected	Nr. of completed answers	Timing
1	UNIBO	Italy	95	56	56	Feb-Apr 2021
2	LUKE	Finland	74	39	39	May 2021
3	BOKU	Austria	≈80	34	34	May 2021
4	IAE	Bulgaria			51	Mar-Apr 2021
5	TI	Germany	142	51	51	Apr-May 2021
6	EVENOR, ASAJA, UPM	Spain	50	11	11	Apr 2021
7	TRAME, INRAE	France		35	25	May-Jun 2021
8	UCC	Ireland	≈50		16	Mar-Apr 2021
9	UNIPI	Italy	29	29	29	Apr-Jun 2021
10	ZSA	Latvia	≈70	34	34	Apr 2021
11	VUA	Netherlands	120	23	20	May-Jul 2021
12	SGGW	Poland	133	118	101	Mar-Jul 2021
13	UoL	United Kingdom	284	44	28	May-Jun 2021
14	ARELFH	France	80	18	18	Feb-May 2021

3.3 Analysis

3.3.1 Evaluation of the four different CONSOLE contract types

At the beginning of the organised workshops, the four different contract types (result-based contract solutions, contract solutions fostering collective

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implementation, value chain-based contract solutions, and land tenure contracts) were presented with the same key characteristics as the stakeholder survey (Figure 1). After presenting these four different contract types, relevant national and overall results from the land manager (T3.2) and stakeholder surveys (T3.3.) were presented to the workshop participants.

Result-based contract • Farmers receive a **payment only for the delivery of environmental or climate results** • Farmers are **free to decide about the management practices** how to contribute the environmental targets • Selected indicators and scoring systems to monitor environmental or climate results are often used, and they will be exactly defined in the contract. • Farmers have access to free advice or training when they participate in this contract, and they can voluntarily engage in the monitoring activity.	**Contract with collective implementation** • Farmers become members of **a group who applies jointly for compensation** in order to implement environmental or climate activities • A minimum number of group members (e.g. 5) from the region is required to **collaborate in order to get a payment**. • The group members decide about the implementation and locating the measures, and the distribution of the payment. • Within the group, peer farmers and advisors share knowledge and support the achievement of the environmental objectives.
Contract along the value chain • As producers, farmers are part of the value chain (producer, processor, retailer, distributor). • Farmers engage in a contract where they commit to deliver **environmental, or climate benefits connected to the production of selected products** by carrying out management measures which contribute to environmental targets • Often these products get a special label. Farmers are paid for it by the market, mainly through a premium price paid by the processor or retailer.	**Land tenure contract with environmental clauses** • Farmer enters into a land-tenure contract where they **commit to give particular attention to environmental aspects beyond legal requirements when producing on the leased land.** • The landowner accepts **a lower lease payment** than for comparable land under usual land tenure agreements to compensate farmer's additional efforts. • In the contract environmentally friendly management practices on the leased land are prescribed in order to maintain or improve environmental targets.

Figure 1. Four different contract types

Partners were asked to have a common discussion with workshop participants and ask three questions. The questions were defined as follows:

1) Do you agree with the results presented?

2) What are the reasons behind the differences between your country and the other countries (country-specific features that could influence the results)?

3) What are the possibilities to introduce or increase the implementation of the four contract types in your country (to make them more understandable, applicable, and profitable)?

During the discussion, the workshop facilitator took notes of the discussion. Based on the notes, facilitating partners were able to fill in the workshop reporting sheet (Annex A).

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3.3.2 PESTLE analysis of result-based contracts

3.3.2.1 Classifying stakeholders' responses

In the stakeholder survey, the idea of result-based contracts was presented to the respondents, and they were asked to envision that this type of contract would be introduced in their country. Respondents were asked to think about the topics that might affect the adoption of result-based contracts in their operational environment. To help to broaden their perspective, six macro-environmental and societal PESTLE factors were presented to the respondents (political, economic, social, technological, legal, and environmental (Figure 2)). Respondents were asked to name five topics that might affect the adoption of result-based contracts for land managers in their operational environment. After naming the topics, respondents defined whether these topics promote and hinder the adoption of a result-based contract. Finally, they were asked to select the one estimated to be the most important topic. Project partners from each country classified the answers given under the six PESTLE factors and translated the answers into English. Responses were sent to LUKE.

Figure 2. PESTLE factors

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LUKE experts analysed the collected qualitative data. All the responses given by the respondents were read through. Partners' preliminary classification of the six macro-environmental and societal PESTLE factors was revised to ensure a coherent approach. Based on the responses under each PESTLE factor, preliminary classes were created for each of the six PESTLE factors. In the first step, 56 preliminary classes were defined, and each response (i.e., topic named by the respondents) was assigned to one of these classes. Some of the responses only repeated the main title of PESTLE factors (e.g., social) and these were not classified under the 56 preliminary classes, but they were counted under the main factor. Part of the responses did not describe any macro-environmental PESTLE factors, but they instead concentrated on the design principles and the contract itself (e.g., implementation, monitoring, nature or goal of the contract). However, these responses were seen as necessary too, and they were placed under technological and legal factors classes.

In the second step of the analysis, those of the 56 preliminary classes that included only a few responses were merged with other classes. Titles for the final classes were formulated, and some re-classification was still done. If it was impossible to place a response under any class, it was placed only under the main factor. Other LUKE researchers revised the preliminary classification done by one researcher to avoid the subjectivity of the classification. Finally, classification ended up with 33 classes. From each class, the number of promoting and hindering responses was calculated.

Classes are strongly interlinked, and the distinction between classes and the classification of the responses is not always unambiguous. However, instead of exact numbers or percentages, the classification gives an overview of the challenges that need to be solved to increase result-based contracts.

3.3.2.2 Discussions of the classes in the workshops

The short titles of the 33 classes defined based on the stakeholder survey were presented to participants in the stakeholder workshops. Before the workshops, partners translated them into their national languages. In the workshops, participants were asked to vote for the most important classes that needed to be considered to increase the uptake of the result-based contracts. Each workshop participant had six votes. After individual voting, the most important classes from each workshop were calculated. Classes voted as most important (6-9 in each workshop) were selected for further evaluations. The common

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evaluation aimed to ponder the practical actions or operations related to the voted classes that could or need to be done in the country or region to ameliorate and increase the uptake of the result-based contracts.

Partners were asked to take notes from the workshop discussion. These notes were translated into English, and they were sent to LUKE. In LUKE, notes related to each separate 33 class were read through, and practical actions or operations suggested were delineated from the notes. Since 33 classes are overlapping and some are strongly connected with each other, also the discussion on different classes was similar and dealt with the same practical actions or operations. For example, self-monitoring was seen as a practical action needed when discussing both classes, TE2 and TE3. Therefore, the results of the workshop discussions are not written class by class but according to practical actions or operations suggested in the workshops (Chapter 3.2.2).

4 Results

4.1 Possibilities to increase implementation of different contract types

This chapter firstly describes in general the possibilities to increase innovative contract types and then analyses the situation as regards the other 3 types of innovative contract solutions. The specific possibilities to increase the implementation of the result-based contracts are discussed in chapter 3.2 when presenting the outcomes of the voting and insights gained through the workshop discussions.

4.1.1 Collected remarks not specific to one of the four contract types

In the stakeholder workshops, possibilities to introduce and increase the implementation of the four different contract types by farmers and forest owners were discussed. Important aspects that apply to all contract types are the following: raising land managers' awareness of new contract types and provision of environmental benefits, the importance of advisory and extension services, combining Agri-Environmental Climate Public Goods (AECPGs) provision with

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existing production, possible participation of private sector, hybrid solutions (i.e., combinations of more than one contract type) and legal aspects.

Land managers' behavioural change needs to be promoted by investing in training and knowledge transfer (UNIPI&UNIFE, IT). Thus, the availability of skilled advisors is crucial. Best practices and successful experiences of existing contract types could be disseminated and communicated to farmers (e.g., training activities, videos, information material) (UNIPI&UNIFE, IT, PL, EU level workshop). Training given by the extension specialists can be supported by sharing experiences of other farmers (UNIPI&UNIFE, IT).

The main goals of farming are often related to efficiency and profitability. There is the need to overcome the outdated approach that agricultural advisory services focus only on agronomic aspects, but farmers need to get support also for economic decisions and managerial aspects in general (UNIBO, IT). Farmers and forest owners need to see that also AECPG provision could provide new business opportunities and appropriate rewards for them (PL, EU level workshop). Measures taken should not only focus on promoting AECPGs, but they need to be tailored to land managers' needs (UNIPI&UNIFE, IT).

There is the need for a more profound ecological understanding of achievable changes with certain actions and timetables (FI). The model simulation could be used to predict implementation effects (UNIPI&UNIFE, IT). Instruments developed need to be tested and improved via pilot projects and small experimental areas (UNIPI&UNIFE, IT). Once the instruments are tested and well-rooted, the best ones can be upscaled.

Besides advisory services, there is also the need for larger stakeholder engagement and local promotion (UNIPI&UNIFE, IT, PL). Different institutional settings might be needed, e.g., new institutional actors who could support the implementation of contract solutions (EU level workshop). There is a need to investigate the benefits of different sectors and sector-related components. The private sector could provide more flexibility and offer new capacity than the public sector (EU level workshop). New organisations or private businesses that might be interested in arranging these types of contracts need to be searched and supported (UNIPI&UNIFE, IT, PL).

Hybrid solutions that integrate different contract types, e.g., collective implementation with result-based indicators, were suggested, and it was seen that they could give new perceptions and different outcomes (FR, UNIBO, IT,

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UNIPI&UNIFE, IT, EU level workshop). For example, with a collective dimension, it is possible to enrol several farmers to achieve the expected environmental result (FR).

In the EU level workshop, regulatory or legal barriers both at the EU and local level (local and regional legislation) were recognised and discussed. There is a need for further research regarding legal aspects, and they need to be investigated in connection with economic aspects, e.g., public funding and fair use of it.

4.1.2 Contract with collective implementation

Ensuring a fair distribution of compensation

According to a land manager and stakeholder survey, a collective contract was not stimulating for land managers. Land managers' reluctance to participate in collective contracts concerned some workshop participants (UNIBO, IT). On the other hand, it was stated that collective contracts might not be as unwanted as these survey results suggest (AT). The need for collective actions taken by local land manager groups was recognised, e.g., in catchment areas (FI). One of the main challenges in collective contracts is to reach a fair distribution of compensation among the participants and to avoid the possible problem of free riders. There is a fear that some of the participating land managers get paid with the minimum effort, and the others need to work hard for the same remuneration (FI, UNIPI&UNIFE, IT). This might cause envy and mistrust between neighbouring land managers (FI). Clear responsibilities and mechanisms for benefit distribution are key to success (BG).

Instead of offering a contract type based on totally collective compensation, it was suggested that collective features could be provided more as a possibility (LV), and a collective bonus might get more acceptance among farmers (FR). Even overcompensation might be needed, in the beginning, to encourage farmers to participate (UNIPI&UNIFE, IT).

Need for a leader or intermediary

Especially in the case of collective contracts, support for organising the contracts is needed (BG). There is a need for leaders who can collect and stimulate the local land manager group (BG, FI). Besides leaders, there is a need for

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intermediaries, "middlepeople", who can act between land managers and government agencies (UNIPI&UNIFE, IT, NL). The existence of intermediaries can "soften" the nature of the collective contract: from the land managers' perspectives, it would highlight individual participation, but, e.g., from regulators' perspectives, collective nature remains (UNIPI&UNIFE, IT). From land managers' perspective, dealing with intermediaries or local alliances, who understand the local natural conditions, is a better option than distant government (NL). Local models that focus on a regional scale and locally specific circumstances, including locally customised measures and payments, would be needed and could increase the attractiveness of collective contracts (NL).

Building trust

Cooperating land managers need to be able to trust each other and have a feeling of companionship and partnership (FR, UK). A bond of trust might reduce the risk of tension between farmers (FR). Farm visits and farmer focus groups can foster feelings of partnership (UK). According to previous experiences, the kind of development where farmers learn to know each other and from each other takes time but finally makes collaboration more realistic and feasible (UK).

Besides relationships, traditions to act collectively take time to develop (LV). Land managers' past experiences of collective actions strongly influence their willingness to participate (UNIPI&UNIFE, IT). The idea of a collective contract needs to be carefully explained to land managers, and it is important to demonstrate the added value of interventions carried out collectively (BG, UNIBO, IT, UNIPI&UNIFE, IT). Successful examples need to be presented and upscaled among farmers (UNIPI&UNIFE, IT).

4.1.3 Contract along the value chain

Distribution of benefits in the chain

According to stakeholders, the private sector and especially large players are interested and would have resources to promote the provision of agri-environmental benefits. Value chain contracts between private parties and managers could be a genuine opportunity (FI, UNIPI&UNIFE, IT). However, the existing value chains providing AECPGs are not yet economically and socially sustainable and, for example, in the case of an organic non-timber forest,

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product processors receive higher prices, while forest owners are not compensated (FI). In an ideal situation, all parties along the value chain would benefit from being involved, and responsibilities and risks would be shared (BG, FI).

One of the main barriers preventing farmers' participation in novel contract solutions is the lack of tradition of financing public goods from private sources and reliance entirely on public funding (PL). If products were better remunerated through market and value chains, and the compensation would reach farmers, it might decrease farmers' willingness for public agri-environmental programs and decrease the need for subsidies (AT).

Value chain contracts were viewed favourably by the farmers in the UK. However, they are also seen as difficult to understand for farmers (UNIPI&UNIFE, IT). Land managers' access to the value chain must be facilitated, and they need encouragement (BG). Procedures need to be easily implemented (UNIPI&UNIFE, IT), and more information about the new products, required varieties and breeds, required quality, and product certification is needed (BG).

Product demand and willingness to pay

In value chain contracts, the consumers' role is pivotal. Consumers can participate in compensating farmers for environmental actions via buying agricultural products (UNIPI&UNIFE, IT). Value chain contracts require smooth information delivery along the chain, and information about the ethical aspects needs to be integrated into consumers' decision making (NL). Products need to be also promoted abroad, and this task could be given, e.g., to state agencies (e.g., Bord Bia, Ireland) (IE). However, e.g., in Latvia, consumers may not be willing to pay higher prices to compensate for the agri-environmental measures the farmers took (LV).

4.1.4 Land tenure contract with environmental clauses

Power relations

There are doubts about land tenure contracts, especially what results in too strong a landowner's power, which would place tenant farmers at a disadvantage (FR, NL, UK). There is a fear that when the land managers have the

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power, they can be rigid with environmental clauses and may not be open to tenant feedback (NL). For some actions, such as planting hedges, the landowner's permission is required, which restricts the possibilities of farmers even to provide environmental services (FR). Also, some countries' regulations to rent land are very tight (FR).

Long-term contracts were considered particularly cumbersome for tenant farmers as multiple partners need to be involved (landowner, tenant, intermediary), and a short contract duration was strongly recommended (UK). On the other hand, land tenure contracts were seen to offer long-term security, and therefore long-term commitment was also seen as a positive aspect (NL).

To be able to launch land tenure contracts, precise regulations of obligations and rights and a transparent system for control and monitoring of results are needed (BG). Tenant farmers might need further legal protection in tenure contracts (UK). It was also noted that environmental clauses should be region or farm-specific (IE).

Access to land

Land tenure contracts might work best on publicly owned land (e.g., state or municipality) (AT, LV). However, at least in some countries, there may not be public land available for farmers to rent (LV). Among forest owners, the idea of leasing land is new, and there may not be a supply for forest areas either (FI). Land tenure contracts might be possible on forest pastures or in connection with nature-based tourism or green care (FI).

A positive side of land tenure contracts is that they can help small farms and hobbyist farmers access land and funding, and tenure contracts allow them to continue their custodian activities (UNIPI&UNIFE, IT). If the trend of leasing land is contrary and small farmers start to lease their land to large companies, there is a risk that only a few players hold the land. This might decrease the local diversity of crops and prevent new farmers from entering (UNIPI&UNIFE, IT).

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4.2 Increasing the adoption of result-based contract type

4.2.1 Topics affecting adoption of result-based contract types

Each respondent of the stakeholder survey (n=486) was able to name a maximum of five topics that affect the adoption of result-based contracts. Altogether 1,769 topics were named (by 399 respondents). From these given responses, 960 were classified further into 33 classes (Table 3). The rest of the given responses (683) were not detailed enough to be further classified (e.g., responses named "political factors") and these were placed under six main factors (General political … General environmental). In the case of some responses (n=126), it was impossible to place them even under the main factors.

Table 3: 33 Classes of the topics affecting adoption of result-based contract types and number of classified responses under each class

Class abbrev.	Class	Number of responses under the class
	General political	104
PO1	Farmers' training and guidance when implementing contracts	44
PO2	Existence of political will to support the delivery of environmental goods and services by farmers	33
PO3	Low level/amount of bureaucracy	26
PO4	Stable political framework conditions in the longer term	13
PO5	Support from skilled authorities and intermediaries in aiding farmers in the implementation of contracts	15
	General economic	137
EC1	Appropriate financial remuneration for participation in the contracts	112
EC2	Existence of sufficient financial resources for contract payments	49
EC3	Farmers' financial risk and uncertainty of income	31
EC4	A secure supply chain and certainty of demand for farm products	30
EC5	Farmers' new earning possibilities through engagement in contracts	9
	General social	107
SO1	Visibility (appreciation, recognition) of farmers' work in providing environmental benefits	31
SO2	Farmers' acceptance, attention to cultural norms and traditions	31
SO3	Society's and consumers' interest and demand for environmentally friendly products	29

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SO4	Willingness to co-operate (stakeholders, neighbours, farmer unions)	27
SO5	Farmers' awareness and knowledge level of environmental issues	30
SO6	Farmer and farm characteristics: education, age, size of farm	19
SO7	Context: local development, population growth, loss of labour	13
	General technological	94
TE1	Existence of necessary technologies to measure the result	42
TE2	Defining suitable monitoring indicators	16
TE3	Easy to apply and no complex monitoring implementation	52
TE4	Implementation of technology (experience, attitude, access)	24
TE5	Sufficient knowledge about the impacts of the different measures	13
TE6	Time and money for implementing measures	11
	General legal	108
LE1	Characteristics of the contract: voluntary, flexible, a possibility to influence	39
LE2	Simplicity and understandability of the contract	38
LE3	Clarity and stability of legal frame behind the contract	36
LE4	Compatibility of the contract with existing laws, programs, and EU policy	18
LE5	Compatibility of contract goal with existing farming/forestry goals	14
LE6	Practical achievability of contract goals	13
	General environmental	133
EN1	Impacts of climate change and perceived need for action	41
EN2	The unpredictability of nature and the limited possibility for farmers to influence the result	35
EN3	Spatial and regional differences in environmental conditions	16
EN4	Possible long period from action to result	10

Each of the 33 classes was named neutral (Table 3). Most of the classes include promoting and hindering responses (Table 4, Figure 3). Responses that stakeholders defined as promoting were typically the kind that would increase the uptake and improve the acceptability of result-based contracts (e.g., PO1 Farmers' training and guidance when implementing contracts). Responses defined as hindering typically mean that they would hinder adoption (e.g., EN4 Possible long period from action to result), or there are challenges within this topic (e.g., PO2 Existence of political will to support the delivery of environmental goods and services by farmers).

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According to the results, classes that included mainly responses defined as promoting are appropriate financial remuneration for participation (EC1), farmers' training and guidance (PO1), visibility and appreciation of the work that farmers are already doing (SO1), interest and demand from society (SO3), existing technology (TE1) as well as voluntary and flexible contract (LE1) (Table 4). Contrary to this, classes that include mainly hindering responses are financial risk and uncertainty of income (EC3), the unpredictability of nature and the limited possibility to influence (EN2), spatial and regional differences in environmental conditions (EN3) as well as high level of bureaucracy (PO3).

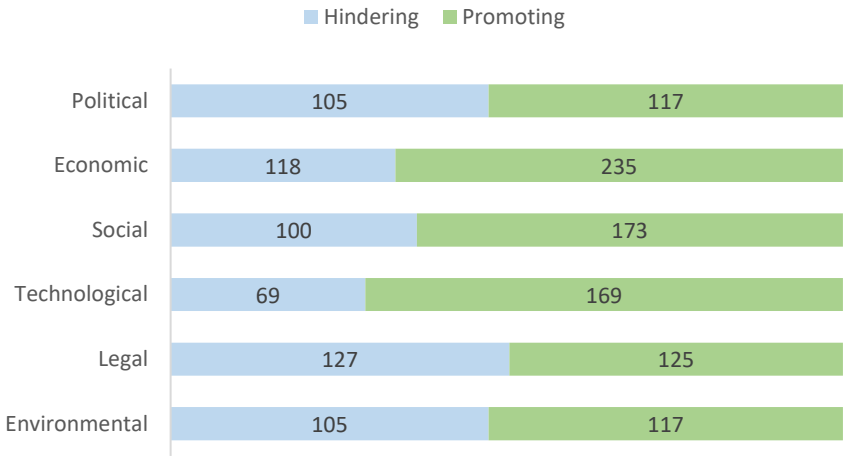

Figure 3: Number of responses that respondents defined as promoting and hindering under each factor

Table 4: Number of promoting and hindering responses under each class

Class abbr.	Number of promoting responses under class	Number of hindering responses under class	Promoting / Hindering aspects under the class
Political			
PO1	37	5	Sufficient level of land managers' training and guidance / Lack of training and guidance

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PO2	20	12	The political will to support the delivery of environmental goods and services by farmers / Environment is not a political priority
PO3	5	20	Minimal level of bureaucracy / Too much bureaucracy
PO4	6	7	Stable political framework conditions / Unstable political framework conditions
PO5	9	4	Existing support from skilled authorities and intermediaries / Lack of resources to get support from skilled authorities
Economic			
EC1	78	27	Appropriate financial remuneration for participation in the contracts / Insufficient remuneration
EC2	28	21	Existence of sufficient financial resources for contract payments / Lack of funding and payer commitment
EC3	9	19	No sanctions for land managers / Financial risk, the uncertainty of income and fear of sanctions
EC4	17	13	Existing supply chains and certainty of demand for farm products / No guarantee of sales, poor product price and monopolies
EC5	9	0	Farmers' new earning possibilities / -
Social			
SO1	27	3	Appreciation, recognition and sharing information of about farmers' work in providing environmental benefits / Continuous critique against agriculture
SO2	15	16	The goal of providing environmental benefits is accepted/ Farmers are unwilling to change and provide environmental benefits
SO3	22	5	Society's and consumers' interest and demand for environmentally friendly products / No interest or demand from society
SO4	13	14	Willingness and possibilities to cooperate (stakeholders, neighbours, farmer unions) / Unwillingness to cooperate
SO5	16	11	Farmers are aware of environmental issues / Lack of knowledge and motivation among farmers

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SO6	10	9	Farmer and farm characteristics promote the provision of AECPGs (e.g., high education level) / Farmer and farm characteristics do not promote the provision of AECPGs (old age, small farms)
SO7	6	7	The context that promotes the provision of AECPGs (e.g., local development) / Context doesn't promote the provision of AECPGs (e.g., population growth, loss of labour)
Technological			
TE1	35	6	Necessary or potential technology exists (spatial data tools, digitalisation) / Technology is not available
TE2	10	5	Ability to define suitable monitoring indicators / Challenges in defining indicators
TE3	29	22	Easy to apply and no complex monitoring implementation / Difficult, challenging, or expensive monitoring
TE4	14	8	Technology is easily implemented (experience, attitude, access) / Difficulties in technological implementation
TE5	8	3	Existing knowledge about the impacts of different measures / Uncertainty whether results will be achieved with chosen measures, missing data of natural processes
TE6	4	7	Easy and practical implementation of measures / Lack of time and money for implementing measures
Legal			
LE1	27	11	With voluntary and flexible contracts, land managers can influence / Compulsory contract with no flexibility
LE2	20	17	Simple and understandable contract / Complex and over-detailed contract
LE3	14	19	Clear, certain, and fair legal frame / Cumbersome, difficult, continuously changing legal frame
LE4	9	9	Contract is compatible / Contract is incompatible with existing laws, programs, and EU policy
LE5	8	6	The contract goal is compatible with existing farming or forestry, and multiple benefits are possible / There are conflicts with existing goals
LE6	11	2	Practically achievable and clear contract goals / Goals are unable to achieve

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Environmental			
EN1	20	14	Land managers are aware of climate change and a need for actions / Consequences of climate change already prevent actions
EN2	4	30	Agreeing only on the factors that farmers can influence on / Results are not in the hands of the farmer (unpredictable nature, yearly changes in weather, crops)
EN3	5	11	Spatial and regional heterogeneity of environmental conditions can be considered in the contract / Spatial and regional heterogeneity of environmental conditions is not considered
EN4	4	6	Long-period from actions to the result can be considered in the contract / Achieving and recognising results takes (too) a long time

4.2.2 Actions needed to increase the attractiveness of result-based contracts

Workshop participants were asked to vote for the classes they feel are most important when aiming to increase the adoption of a result-based contract. According to stakeholder workshops, the six most important classes are (Table 5):

1) Appropriate financial remuneration for participation in the contracts (was voted among the most important classes in 10 workshops)

2) Defining suitable monitoring indicators (9 times among the most important ones)

3) Easy to apply and no complex monitoring implementation (7)

4) Farmers' training and guidance when implementing contracts (5)

5) Existence of political will to support the delivery of environmental goods and services by farmers (5)

6) Existence of sufficient financial resources for contract payments (5)

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Table 5: Voting results from the stakeholder workshops. In each workshop, stakeholders voted for 6-9 most important classes.

Class abbr.	Class	Countries that voted the class among the most important ones	Number of countries that voted for the class
Political			
PO1	Farmers' training and guidance when implementing contracts	AT; BG; IE; DE; NL	5
PO2	Existence of political will to support the delivery of environmental goods and services by farmers	AT; FI; FR; UK; IE	5
PO3	Low level/amount of bureaucracy	AT; UK; DE	3
PO4	Stable political framework conditions in the longer term		
PO5	Support from skilled authorities and intermediaries in aiding farmers in the implementation of contracts	UK; IE; UNIPI&UNIFE, IT	3
Economic			
EC1	Appropriate financial remuneration for participation in the contracts	AT; BG; FI; FR; DE; UK; IE; UNIBO, IT; LV; PL	10
EC2	Existence of sufficient financial resources for contract payments	FI; FR; LV; PL; NL	5
EC3	Farmers' financial risk and uncertainty of income	UK; LV; NL	3
EC4	A secure supply chain and certainty of demand for farm products	UNIPI&UNIFE, IT	1
EC5	Farmers' new earning possibilities through engagement in contracts	BG; FR; UNIBO, IT	3
Social			
SO1	Visibility (appreciation, recognition) of farmers' work in providing environmental benefits	AT; DE; LV, NL	4
SO2	Farmers' acceptance, attention to cultural norms and traditions	FI	1
SO3	Society's and consumers' interest and demand for environmentally friendly products	UNIPI&UNIFE, IT	1
SO4	Willingness to co-operate (stakeholders, neighbours, farmer unions)	BG	1

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SO5	Farmers' awareness and knowledge level of environmental issues		
SO6	Farmer and farm characteristics: education, age, size of farm		
SO7	Context: local development, population growth, loss of labour		
Technological			
TE1	Existence of necessary technologies to measure the result		
TE2	Defining suitable monitoring indicators	AT; BG; FI; FR; UK; IE; UNIBO, IT; LV; PL	9
TE3	Easy to apply and no complex monitoring implementation	FI; UK; DE; IE; UNIBO, IT; UNIPI&UNIFI, IT; PL	7
TE4	Implementation of technology (experience, attitude, access)	BG	1
TE5	Sufficient knowledge about the impacts of the different measures	AT; IE; LV; NL	4
TE6	Time and money for implementing measures	BG; FR; UK; IE	4
Legal			
LE1	Characteristics of the contract: voluntary, flexible, a possibility to influence	LV; NL	2
LE2	Simplicity and understandability of the contract	IE	1
LE3	Clarity and stability of legal frame behind the contract		
LE4	Compatibility of the contract with existing laws, programs, and EU policy	DE	1
LE5	Compatibility of contract goal with existing farming goals	UNIBO, IT; UNIPI&UNIFE, IT; PL	3
LE6	Practical achievability of contract goals	BG; DE	2
Environmental			
EN1	Impacts of climate change and perceived need for action	UNIPI&UNIFE, IT	1
EN2	The unpredictability of nature and the limited possibility for farmers to influence the result	AT; NL	2
EN3	Spatial and regional differences in environmental conditions	NL	1
EN4	Possible long period from action to result	FI; BG	2

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Workshop participants were asked to discuss the classes that were voted as most important in their workshop. The discussion aimed to find practical actions or operations that could be done in their country or region to increase result-based contracts. Since 33 classes are overlapping and some are strongly connected with each other. Also, the discussion on different classes was similar and dealt with the same practical actions and operations. Therefore, the results of the workshop discussions are not written class by class but according to practical actions or operations suggested in the workshops (chapters A-K). After each chapter title (A-K), the classes (PO1 … EN4) under which these actions or operations are mainly discussed are indicated in parentheses.

A) Different ways to define monitoring indicators (TE2, TE3, TE5)

Defining suitable monitoring indicators is the basis for successful result-based contracts (AT, DE, FI, IT, LV, PL). Indicators need to be closely linked with the agricultural or forestry practice. Evidently, they need to be such that land managers can influence them by management actions (AT, DE, FI, IT, NL). For example, land managers can do their best to offer habitats for certain animal species, but they cannot finally influence whether these animals will breed on their land. In these cases, the result monitored could be the existing habitat, not the number of nesting animals (AT).

A strong connection between science and practice is needed when defining good indicators, and research results should be used (BG, PL). More research is needed to build basic knowledge about what happens because of certain measures in a given time horizon (FI). Land managers could be involved in the process of indicators defining (LV) and in the contract development as a whole (NL). Existing best practices and successful examples from other countries could be benchmarked (IT, NL).

Indicators need to be fair for different land managers. Indicators need to consider those who have already adopted sustainable practices and can perhaps make only small improvements compared to land managers, or countries, that have not yet adopted sustainable practices (FI, IT, NL, UK). On the other hand, it was seen that result-based contracts might attract only those farmers who are already close to the set target values and to whom results are relatively easy to achieve (UK).

A holistic approach is needed when defining monitoring indicators. The same monitoring indicators could be used to measure different agri-environmental

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benefits (e.g., biodiversity, water, carbon) as these benefits are often interlinked (AT, FI, IE). This might be more profitable also for land managers (AT). Indicators should not focus on measuring too narrow aspects; for example, instead of an individual plant species, the monitoring focus could be on herbaceous grasses (AT). Proxies can be used whereby it is difficult to identify the "right" indicators (IT). Also, average or adjusted values can be used when target value cannot be fixed due to annual or regional variations (e.g., nitrogen levels in water protection during different seasons) (DE). In the initial phase, besides monitoring indicators from individual actors (land managers), the level of monitoring can also be based on more general parameters that exist in national and regional levels (IT).

The main opinion in the stakeholder discussions was that in result-based contracts, indicators need to be based on local conditions, and they need to be customised to local environmental issues (FR, LV, NL). However, in Finland, a nationwide biodiversity monitoring system and comparable indicators for the whole country were also suggested among forestry stakeholders (FI). The suitability of having local or nationwide indicators might also depend on the funding source. Is there a nationwide contract model with governmental funding, or is the contract a more market-based, bottom-up model with local indicators? Small-scale projects might require different governance structures and intermediaries to design indicators and measures (UNIPI&UNIFE, IT). From the government perspective, quantitative indicators of the result-based contract would be attractive (NL).

B) Increasing motivation via self-monitoring (TE3, TE2)

Monitoring was seen as a challenge; whose task would it be (FI)? It was highlighted that indicators (to measure the result) must be carefully selected, well-known, understandable, easy to observe, and measurable, which would bring possibilities for land managers' self-monitoring (AT, DE, FI, FR, IE, IT, LV, PL). The possibility for a land manager to stay up to date was seen as important, especially in long contracts (FI). Via self-monitoring, land managers can perceive the effects of management actions, which might motivate and increase understanding among land managers and increase their willingness to engage in result-based contracts (DE).

If the farmer is the one to monitor the results, the need for advisory services and assistance for monitoring (PL) and the need for adequate inspections and control was raised (FI). New mobile applications could aid farmers in self-

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monitoring and even increase willingness to engage in result-based contracts (DE). However, it was also noted that self-monitoring is not always a good solution (UNIPI&UNIFE, IT), and everything cannot be self-monitored since there are challenging indicators that require, e.g., laboratory applications; also, if a contract includes cooperation between neighbouring land managers, self-monitoring might not work (GER). The monitoring timing might affect the result, so it is important to have at least two measurements to verify the result (FI).

C) Need for qualified advisors (PO1, PO5, TE5, LE5)

There is a need to increase land managers' awareness of environmental issues and ways to provide agri-environmental benefits via training and education (AT, IE). The more knowledge and understanding land managers have, also about the causal relationships in nature, the more motivated they are to act (AT). A sufficient level of biodiversity, nature conservation and agricultural knowledge is important, especially when promoting result-based contracts (AT). Land managers' awareness and understanding of different contract types are often low and need to be increased via training and advisory services (IE, PL). Internet platforms could be created to deliver information to land managers and advisors about good practices, existing contract types, characteristics, and guidelines (BG).

The role of advisory services was seen as important when aiming to promote result-based contracts (AT, IT, UK). Land managers need a companion to guide them at the beginning (AT), and they need to be able to trust an advisor (IT). At best, an advisor is not purely external, but s/he could even be a farmer her/himself (UK). Before training land managers (AT, IT), advisors need to be trained. Land managers need a plan when entering a new contract, and to be able to compile plans, advisors must have enough knowledge about the successful measures (AT, LV, PL). It would be best if the ecological extension could occur in existing agricultural extension structures where the same specialists could provide ecological and agricultural know-how (AT). Also, knowledge of funding opportunities, legislative issues and leadership abilities are needed for an advisor to play its role (UK).

D) Customised plans to combine old and new objectives (EC5, TE5, LE5, LE6)

It is more likely that those farmers will participate in the new contract type who do not need to reorganise everything compared to those who need to set up a

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completely new system on their farm or forest holding to be able to participate (DE). The objectives of the result-based contract and the existing objectives of agriculture or forestry must be fitted into an existing "picture" in the case of every participating land manager. When fitting old and new objectives together, land managers s need information and guidance about the new income opportunities, and help to develop new, tailored business plans (AT, IT). At best, diverse businesses can even reduce vulnerability and stabilise land managers´ income (AT). In the EU level workshop, it was discussed that result-based contract solutions might fit especially for intensive systems, for farmers who might not accept other agri-environmental schemes but could be interested in business perspectives of result-based contract solutions.

E) Increasing visibility and appreciation of the work done (SO1, SO2, SO3, SO4)

Appreciation among land managers and society can be increased only if awareness and information (AT). At least in some areas, farmers are seen as being harsh to nature (LV), and there is a feeling that society is always looking over the shoulder and criticising (NL). Awareness of the positive effects of the work that farmers are doing is important both when aiming to increase the share of land managers interested in providing environmental benefits (AL, BG) and when aiming to improve reputation among the public (AT). There is interest, and even demand for environmentally friendly products in society and this demand is channelised to land managers (IT, LV). Better information about the work that land managers are doing could contribute to sales (LV). Collectives and institutions must take responsibility for labelling products (NL).

Farmers themselves are the best multipliers for other farmers, and therefore peer examples are important (AT, FI). If farmers' groups engage together and make their efforts visible via media (DE), more visibility could be gained. New contract types need to be presented often enough (e.g., series of stories) so that land managers first understand what the contracts are about (FI). On the other hand, peer farmers might also have a reverse effect, and there can be even negative expressions towards those who deviate from the usual path, for example, against organic farmers (AT).

F) Need for sufficient compensation (EC1, EC3, TE6)

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Sufficient financial remuneration and an attractive incentive system for land managers are basic prerequisites when launching result-based contracts since farmers' livelihoods depend on their economic success (AT, DE, IE, LV). According to stakeholders, monetary compensation is not the only reason for farmers to participate, but an important one, and they do not participate just for social and environmental reasons (AT). In the UK, there is a fear that projected payments from the new contract schemes suggested by the government might be considerably lower than the compensation level that would satisfy land managers (UK). When participating in result-based contracts, land managers must have a clear understanding of the economic consequences (e.g., timing and amount of payment, all costs, and efforts versus income) (AT, BG, IT, PL), and they need to be able to trust that their efforts are somehow compensated (DE). If land managers need to accept the risk of not achieving the results and compensation, the ability to take this risk should be rewarded by a high premium (e.g., higher than in action-oriented contract types) (DE, PL).

The financial resources needed do include compensation for land managers and sufficient financial resources for introducing new contract types (BG). The costs for advisory services are one of the issues; the danger is that these costs are transferred to the farmers (DE).

Uptake in productive regions may be an issue as farmers are less willing to participate, and therefore contracts are focused only on the least productive areas (DE). Among Finnish forest owners, a sufficient level of compensation, e.g., from biodiversity protection, is not the same for every owner, but some would produce the same benefits with a lower amount of compensation (FI). In both cases, bidding was suggested as a solution. It was suggested to allocate a certain budget to each region, and farmers could make offers, ensuring reaching regionally specific environmental goals (DE).

Land managers could be compensated with other than direct monetary rewards. In forestry, increasing the share of deciduous trees increases the forest's resilience; for example, insurance companies could be interested in giving a discount on forest insurance if the forest owner secures these structural features in their forests (FI).

G) Reducing land managers' risk with gradual compensation and pre-remuneration (EC3, EC1, EN2, EN4, TE6)

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Criteria to control the results (monitoring indicators) must be selected so that land managers can influence them (AT). However, in many cases, the possibilities of land managers to influence natural processes, especially during extreme weather events such as drought, are limited (AT, DE). To avoid a high risk of losing payments if the results are not achieved, the shift towards result-based contracts could be gradual (BG, FI, FR, UNIBO IT, LV, PL). In some cases, even a lower result can be a significant improvement compared to the starting point, and land managers should be compensated for the start of the process (NL). It was suggested that a basic level could be paid in any case, and a gradual bonus would increase compensation over the basic level (DE, FI, IT). Annual updates and yearly payments would aid land managers in considering the amount of work required and compensation earned at the next level (BG, FI, PL). The type of compensation is also connected with the reputation of the contract model: punishments and sanctions are seen as counterproductive since they are seen as a form of disrespect for environmental efforts undertaken by farmers, and consequently, for result-based systems, there should be a pure reward system (DE).

The reasonable time horizon of result-based contracts was discussed (AT, BG). Long-time horizons from action to result are challenging, especially for land managers who cannot wait 20 years for a result (AT). Partial pre-remuneration was suggested (AT, BG, LV). Public-funded pre-remuneration would cushion long-term preparatory work before the actual compensation for land managers and certifiers (AT). Inflation shall be kept in mind in long contracts so that land managers do not lose interest over time (LV).

The principle of additionality is important and needs to be discussed when planning result-based contracts (AT, FI). On the one hand, land managers must achieve new results (s) and increase agri-environmental benefits (AT). On the other hand, the farmers who have already done a lot and cannot anymore obtain similar increments as at the beginning (e.g., carbon farming and soil organic carbon) should not be punished. Also, preserving existing nature values and securing ongoing processes advancing at nature's own pace need to be compensated (FI).

H) Funding via political commitment, private companies, and value chains (PO2, EC2, EC4)

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The existence of political will to support the delivery of environmental goods and services by land managers is a prerequisite for implementing any agri-environmental measure (AT). A reliable, stable, and trustable government is seen as important in giving a direction regarding what agriculture should prioritise (NL). When land managers are asked to commit to long-term contracts, commitment and mechanism for long-term remuneration also need to be found from the other side of the contract (FI, IE, LV). There must be sufficient time for preparations, e.g., for guiding organisations, before launching a new contract model, and this may also require a piloting period (FI).

A government contribution is needed, and a political will must exist to secure this contribution (FI). In some discussions, financing AECPGs was primarily a governmental responsibility (NL). However, not everything can be funded with governmental money, and compensation should not only depend on subsidies. The private sector can have volume and interest to fund contract payments, for example, as part of their corporate social responsibility strategy (FI, FR). Also, high public transaction costs are needed for designing and implementing new contract types to support the mobilisation of private resources (UNIPI&UNIFE, IT). Private companies' willingness to pay for environmental benefits must be studied (FI). For the companies, verification of genuine additionality of the result is important (FI). Income can also be generated via value chains through existing value chains or new income opportunities (AT).

I) Compatibility with existing programs and existing experience (LE4, LE5)

When presenting result-based contract types to land managers, it is important to consider existing and previous contracts and programs (DE). The objectives of international and EU policies might also influence indicators' definition (i.e., alignment between performance indicators and emission reduction targets set out at the EU level) (UNIBO, IT). New models need to be compatible with existing laws, programs, and EU policy, for example, to avoid the problem of double funding (DE). It is important to consider the existing experience that land managers' has gained over time with current programs and new contract types need to be introduced in parallel with the existing ones (DE).

In different European countries, there are different readiness levels when it comes to adopting result-based contracts. Those countries that have not yet adopted result-based practices are behind the countries that have already introduced them (UNIPI&UNIFE, IT). For example, in The Netherlands, there are existing

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collective arrangements to which result-based practices should be adapted (NL).

J) Reducing bureaucracy (PO3, LE1)

High levels of bureaucracy and too complex contracts might discourage and even prevent the adoption of new contract types among land managers (AT, DE). At the moment, many farmers are fed up with bureaucracy, constant changes in policies, and complementary and partly overlapping regulations that need to be fitted with farm work (DE, UK). The level of bureaucracy is also an economic consideration since more bureaucracy often means more costs (AT). Especially in the introduction phase, a low level of bureaucracy is important and might encourage land manager participation (DE).

K) Balancing between freedom to choose and scattered solutions (PO3, TE6, LE1, LE4, LE6)

The ability to control the contract and have the freedom to choose measures and their implementation, e.g., the time of moving, is a motivating factor for land managers (AT, DE, FI, LV, NL). The result-based contract type that aims for certain results instead of focusing on certain prescribed actions might better fit farmers' mindsets (DE). Also, mixing and matching different contract types could increase the adoption of the result-based contract type and may lead to better environmental performance (DE, LV). On the other hand, even though the freedom to choose and freedom to control would motivate land managers, a large palette of measures or mixing of different contract types would lead to scattered, local solutions that are not easily transferred to other regions (DE). There was a fear that scattered solutions might also lead to high administration costs, which reduce the actual financial resources for compensations (DE). Self-chosen actions cannot be based on full autonomy, but advisors must guide them (IE). Therefore, "result-oriented" is often seen to be more practical than pure result-based schemes that give farmers full freedom in their management (DE).

5 Conclusion

5.1 Lesson learned from the stakeholder workshops

The main results of land manger and stakeholder surveys were presented and discussed in the stakeholder workshops. According to survey results, when

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comparing the four contract types, the result-based contract is most understandable, applicable, and economically beneficial, followed by the value-chain contract (D'Alberto et al. 2022). Land-tenure and collective contract types and the characteristics related to these types are seen as less popular among land managers. Participants agreed with these results in the workshops and did not consider the results surprising. According to the workshops, the willingness to participate in different contracts depends on how well the contract type is known. Therefore, continuous information sharing and communication on different types of contracts and promotion of existing examples are important.

In the workshops, the following steps are suggested to introduce and increase the uptake of **result-based contracts**:

- Define suitable, science-based monitoring indicators that land managers can influence. In an ideal situation, the same indicators could be used to measure different agri-environmental benefits (e.g., biodiversity, water, carbon).
- Indicators can be based either on local conditions and defined through a bottom-up process or common indicators for the whole country (top-down process). The definition of indicators also depends on the type of funding source.
- The ease of measuring the indicators is seen as important. Self-monitoring by forest owners or farmers could increase their motivation to provide agri-environmental benefits and participate in new contracts.
- Qualified advisors who can give extensions on agricultural and environmental issues are important. Environmental extension and guidance towards new contracts should not be separate, but it needs to occur in existing agricultural or forestry practices.
- New environmental objectives need to be fitted with land managers' existing plans and production, and customised, holistic plans are needed to combine old and new objectives.
- Peer support could increase the uptake of new contracts.
- Visibility of the work that forest owners or farmers have already done for the environment increases appreciation among the public and other land managers.

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- Sufficient economic compensation is the basic prerequisite for increasing the uptake of result-based contracts. Land managers need to have a clear picture of the economic consequences.
- Nature conditions and their consequences are difficult or impossible to control, and the result is not always in the hands of farmers or forest owners. Gradual compensation, gradual change towards result-based contract type, and partial pre-remuneration were suggested to reduce the land managers' risks in result-based contracts.
- Result-based contracts should be based on a pure reward system. Punishments were seen to lead to bad reputations.
- New types of contracts need to be compatible with the current programs, and they need to be introduced in parallel with the existing ones.
- Long-term commitment for the contracts from governments is needed.
- Besides public funding, the private sector's possibilities and willingness to participate in funding could be investigated in detail. It is important to verify the additionality of the results obtained, especially when the private sector funds contracts.
- Low bureaucracy increases the willingness to enter a contract.
- Freedom to choose, not only the measures taken but also to mix and match different contract types and features (e.g., result-based and collective contract) was seen as a positive aspect for land managers. However, there were also doubts that a large palette of different options available might increase bureaucracy.

In addition to the result-based contract type, possibilities to increase the implementation of three other contract types were discussed. To increase the uptake of **collective contracts,** it is important to ensure fair distribution of compensation between participating land managers. Besides mutual trust between land managers, collective contracts often need a leader or intermediary to gather the land managers together and lead the group. Collective features could be provided as one option in hybrid solutions, and it could provide a collective bonus for land managers.

The private sector has huge potential in **value chain contracts**, and the private sector could offer flexibility for agri-environmental contracts. In value chain contracts, the next step is to search for and support private organisations or

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businesses that might have an interest in engaging in these types of contracts. There is a need to investigate existing and potential value chains and define the benefits and fair distribution of responsibilities and risks for different actors.

One of the main issues in **land tenure contracts** is the lack of available land for rent. Moreover, stakeholders were concerned that too strong a power of the landowner (landlord) reduces farmers' (tenants) willingness to participate in this type of contract. Precise regulations of obligations and rights and a transparent system for control and result monitoring are needed. The duration of the contract needs to be carefully considered. A positive characteristic of the land tenure contracts is that they could enable small farms and hobbyist farmers to access land and funding as tenants.

5.2 New opportunities for result-based and collective schemes in forestry

The European Commission is preparing new Guidelines for state aid in the agricultural and forestry sectors and rural areas. In these guidelines, the Commission establishes criteria for identifying eligible measures for state aid under national funding. The criteria is meant to be consistent and coherent with the state aid and support which is granted under the EU common agricultural policy. In forestry, the Guidelines determine, for example, what kind of state aid for enhancing forest environment and climate services is eligible. The Commission proposes that the Member States amend their existing aid schemes to comply with the new guidelines by 30 June 2023 at the latest.

The Commission draft seems to offer new possibilities to implement result-based and collective schemes in forestry. According to the draft, the state aid may cover collective schemes and result-based payment schemes, such as carbon farming schemes, to encourage beneficiaries (forest owners) to significantly enhance the quality of the environment at a larger scale or in a measurable way. Until now, the compensations to beneficiaries have been allowed to cover all or part of the additional costs or income foregone resulting from the environmental or climate commitments made, but in the Commission draft, the compensations may also cover an *incentive payment*, which may not exceed 20 % of the compensation. The other option is that payments to the forest owners are

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calculated based on the *value* of the forest environment and climate services that they produce. The market must not remunerate the services.

The Commission draft seems to provide long-desired opportunities to implement result-based and collective payment schemes in the forestry sector either by making use of premium payments for lost income or additional costs or payments based on the value of biodiversity, climate, water or soil-related environmental services.

6 References

D'Alberto, R., Raggi, M., Viaggi, D., Hamunen, K., Tarvainen, O., Haltia, E. 2022. Deliverable D3.2 – Land managers' and stakeholders' opinions on implementation of suggested contract solutions based on survey results.

7 Annexes

Annex A: Workshop plan and reporting sheet

Programme for the stakeholder workshops (T3.4)

Aim of the stakeholder workshops

Aim of the stakeholder workshops is to collect feedback about the results of landowner and stakeholder surveys, further improve the proposed solution and identify lessons learned. Each participating country will organize a workshop and act as facilitator in their own stakeholder workshop. In these workshops, partners will present first results about the acceptability of new contract solutions of both landowner survey (T3.2) and stakeholder survey (T3.3.). The results will be discussed with the stakeholders.

Macro-environmental, societal topics (PESTLE) depicting operational environment that either promote or hinder the adoption of result-based contract types were recognized in the stakeholder survey. In each country, the results PESTLE-analysis will be presented, and, to take a step forward, workshop participants will be asked to vote for the most important topics and then to

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suggest practical actions to increase adoption of result-based contracts in their region or country.

Organization

Participants: 10-30 participants in each country. Aim to reach stakeholders from different background organizations in local, regional and state level as well as stakeholders who are acting in different roles or having different areas of interest, for example, the same stakeholders that were asked to participate for the stakeholder survey.

Timetable: Workshops will be organized during October – November 2021. Duration of the workshop is approximately half a day (3 hours).

Form of the workshops: Each country can decide whether to have their workshop face-to-face or virtually. Face-to-face workshop is recommended.

Material:

- Detailed instructions (this word document) including reporting sheet (Attachment 1.)
- A draft of a PPT-presentation
- Excel file including results of landowner surveys (acceptability part)
- Excel file for each country including results of stakeholder survey (acceptability part)

Before the workshops, partners need to translate the presentation and the results that they want to present into their own national language.

Workshop program

Part 1. Introduction (appr. 30 min)

- Introducing the aim of the workshop and short introduction of the Console project (if needed)
- A quick round of introduction: who are participants and how their work relates to PG production or innovative contract types

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Part 2. Acceptability of new contract types (appr. 1 hour)

- A short introduction of different contract types (an example text is in the PPT-slides, text follows the contract type descriptions from the surveys)
- Presenting results of the landowner survey (T3.2) and stakeholder survey (T3.3.). Results (suggestion) are provided as PPT slides and excel sheets. It is up to partners to decide which results they will finally present.
- Common discussion with workshop participants (or writing into chat box):
    - Do you agree with the results?
    - Reasons behind the differences between your country and other countries (country specific features that could influence on the results)?
    - What are the possibilities to introduce or increase implementation of the four contract types in your country (to make them more understandable, applicable, profitable)?
- During the discussion, facilitator take notes of the discussions (or the discussion is taped), to be able to fill in the workshop reporting sheet.

Part 3: Finding ways to increase adoption of results-based contract type (appr. 1,5 hour)

- A short practical example of result-based contract type (an example is given in PPT-slides)
- Presenting 33 topics that may have an impact on the adoption of result-based contracts (see Attachment 2). Topics are classified from the PESTLE-part of the stakeholder survey results.
- Participants vote for the topics that they consider as most important ones. Each participant has 6 votes (physical or virtual note tags). Participant can vote one topic only once, but otherwise voting is free (no need to give vote for topics in each six main categories). "Most important" refers to topics that should be taken into account in order to increase the uptake of result-based contracts.

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- Short break. During the break workshop facilitators calculate 6-9 topics that are voted as the most important ones among the workshop participants.
- Discussion of the topics that are voted as most important ones. In the discussion, aim is to ponder what are the practical actions or operations related to voted topics that could or needs to be done in your country or region to increase result-based contracts? Is it possible to influence on these topics?
- During the discussion, either the facilitator or one of the group members take notes of the discussions (or the discussion is taped), to be able to fill in the workshop reporting sheet.
    A. Discussion option A: If there are more than 10 participants in the workshop, it is highly recommended to divide the group into in small groups. Each group gets 2-3 topics that are voted as most important ones. After the group discussions, groups themselves or facilitators shortly present the results of the discussions for the whole group.
    B. Discussion option B: If small group discussions are impossible to organize, topics voted as most important ones (6-9) can be processed one-by-one and each participant first writes suggestions (e.g. in chat box) for the practical actions or operations needed. In the end, a group will have a common discussion about the suggestions.
- End of the workshop. Facilitator of the workshops fills in the reporting sheet.

Workshop reporting sheet

Date of the workshop:

Responsible partner(s) and person(s):

Number of workshop participants:

Questions to be answered:

Part 1. Acceptability of new contract types

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- Do you agree with the results?
- Reasons behind the differences between your country and other countries (country specific features that could influence on the results)?
- What are the possibilities to introduce or increase implementation of the four contract types in your country and to make them more understandable, applicable, profitable?
    - Result-based:
    - Contract with collective implementation:
    - Contract along the value chain:
    - Land tenure contract with environmental clauses:

Part 2: How to increase the adoption of <u>result-based</u> contract types?

Topics voted as most important ones (code PO1… EN4)	What are the practical actions or operations related to these topics that could or needs to be done in your country or region to increase result-based contracts? Is it possible to influence on these topics?
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

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33 topics that would affect adoption of result-based contract type (results from stakeholder surveys)

	POLITICAL		ECONOMIC		SOCIAL
PO1	Farmers' training and guidance when implementing contracts	EC1	Appropriate financial remuneration for participation in the contracts	SO1	Visibility (appreciation, recognition) of farmers' work in providing environmental benefits
PO2	Existence of political will to support delivery of environmental goods and services by farmers	EC2	Existence of sufficient financial resources for contract payments	SO2	Farmers' acceptance, attention to cultural norms and traditions
PO3	Low level/amount of bureaucracy	EC3	Farmers' financial risk and uncertainty of income	SO3	Society's and consumers' interest and demand for environmentally friendly products
PO4	Stable political framework conditions in the longer term	EC4	A secure supply chain and certainty of demand for farm products	SO4	Willingness to co-operate (stakeholders, neighbors, farmer unions)
PO5	Support from skilled authorities and intermediaries in aiding farmers in the implementation of contracts	EC5	Farmers' new earning possibilities through engagement in contracts	SO5	Farmers' awareness and knowledge level of environmental issues
				SO6	Farmer and farm characteristics: education, age, size of farm
				SO7	Context: local development, population growth, loss of labor
	TECHNOLOGICAL		**LEGAL (and contract related)**		**ENVIRONMENTAL**
TE1	Existence of necessary technologies to measure the result	LE1	Characteristics of the contract: voluntary, flexible, a possibility to influence	EN1	Impacts of climate change and perceived need for action
TE2	Defining suitable monitoring indicators	LE2	Simplicity and understandability of the contract	EN2	Unpredictability of nature and the limited possibility for farmers to influence result
TE3	Easy to apply and no complex monitoring implementation	LE3	Clarity and stability of legal frame behind the contract	EN3	Spatial and regional differences of environmental conditions
TE4	Implementation of technology (experience, attitude, access)	LE4	Compatibility of contract with existing laws, programs and EU policy	EN4	Possible long period from action to result
TE5	Sufficient knowledge about the impacts of the different measures	LE5	Compatibility of contract goal with existing farming goals		
TE6	Time and money for implementing measures	LE6	Practical achievability of contract goals		

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Signature list for stakeholder workshops

In case the event is carried out **online**, please fill in the signature list, but instead of signatures, add a snapshot of the organisers' screen with the participants. Stakeholders can be included into this list only if they want. Please, do remember to ask a **permission** from them. Names will not be published anywhere; the information of the participants is only collected for project reporting.

Country: Location:

Date: Time:

Name	Surname	Organisation / Profession	Email address	Signature

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