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 D1.2 Identification of potential improved solutions

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Project Consortium

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Review of contents

To ensure the quality and correctness of this deliverable, we implied an internal review and validation process. The deliverable was drafted by the work package leader UNIBO. All CONSOLE partners reviewed the draft D1.2 document and specific input were given by WP leaders and CoP task leader. Finally, the draft version was submitted to the project coordinator, for final review and validation.

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1 Summary

This deliverable describes the activities and the results developed in the task 1.2 "Stakeholder co-construction of potential improved solutions". The objective is to identify the most promising solutions able to improve the design of contracts for agri-environmental-climate public goods (AECPGs) in different case studies and in the EU as a whole.

The activities carried out involved a survey among partners, including selected stakeholders, and a workshop with a broad participation of stakeholders.

Several cases were identified that attracted a wide attention by partners from many countries. Three main AECPGs (carbon sequestration, biodiversity, water quality) were mostly confirmed as of high or very high importance in most cases.

The further discussion allowed to identify implications for the upcoming WPs. A general message is the high interest for result-based mechanisms, but also the importance of considering hybrid solutions.

2 Introduction

This deliverable describes the activities and the results developed in the task 1.2 **"Stakeholder co-construction of potential improved solutions"** (M4 – M13; end of the task moved to M15 with amendment pending at the time of the deliverable submission). The objective of task 1.2 is to take stock of the information collected in WP2 according to the framework of analysis developed in WP1 to feed into task 1.3 "Development of draft framework practical solutions catalogue" and WP3 "Feasibility of new contract solutions for farmers and other stakeholders". In particular, the target is the identification of reasons for success of different initiatives and to provide information on the most promising solutions able to improve the design of contracts for agri-environmental-climate public goods (AECPGs) in different case studies and in the EU as a whole. To achieve that target, this document identifies main features, dimensions and working model of promising contract solutions able to improve the delivery of AECPGs by EU agriculture and forestry. Moreover, an analysis of contexts in which such improved solutions are more likely to work is provided.

The co-construction of potential improved solutions builds on task 1.1 "Initial conceptual framework" and takes into consideration the existing experiences collected in WP2. The procedure for the identification and classification of promising AECPGs contract improvements includes three subsequent steps:

- Firstly, it takes stock of the catalogue of existing successful experiences in AECPGs contracting based on the case studies developed in WP2.
- Secondly, a range of improved contract solutions is proposed to support its use as models for future design, including their assessment and the role of different levels of governance (from local to EU) and implementation.

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- Finally, these improved solutions are refined benefiting of additional results from WP2 (tasks 2.2, 2.3 and 2.5) and collecting information from key stakeholders

The third procedural step (and partly the second one) was expected to be accomplished in a dedicated workshop (the 3rd CONSOLE project meeting) where the discussion of improved solutions by the project stakeholder board was foreseen. As the COVID-19 crisis forced to cancelation of the in-person meeting, a questionnaire-based survey has been developed targeting internal partners, and, indirectly, key external experts and stakeholders. The questionnaire was designed to collect opinions concerning the enhanced contract solutions assessed in CONSOLE (WP2) to meet the objectives of the Project. In particular, the questionnaire aims to identify features, working model and contexts of contracts able to improve the delivery of AECPGs from EU agriculture and forestry. The questionnaire is developed on the basis of existing contract solutions (tasks 2.2). In task 2.2 a broad number of carefully selected, exemplary contract solution case studies have been analysed to identify contract specifications as well reasons for success and failure by the CONSOLE partners. That information has been condensed and organised in the deliverables D2.1, D2.2, D2.3 D2.4 and D2.5, available at http://console-project.eu/.

The preparation of the task entailed a reflection on the notion of "improved" to be applied. This may include two options:

- Improved with respect to existing instruments in general;
- Improved with respect to instruments implemented in an area; which means, an instrument already existing and suitable to be replicated in another area is improved with respect to what existed in an area.

In this exercise we use both approaches, bearing in mind that the first can be more relevant for practical purposes and communicability, while the second is more ambitious for research and for agriculture and forestry as a whole. We will comment further on this topic in the discussion section.

The present deliverable is organised as follows:

Section 3 defines the methodological approach for conducting the partner survey and the stakeholder workshop. Section 4 describes the preferred case studies based on different AECPGs, whereas section 5 highlights the preferred case studies considering the different contract-types. Section 6 analyzes the outcomes of the previous two sections to reveal the most interesting contractual solutions. Section 7 describes the results of the stakeholder workshop and reveals the interesting points of discussion that will be reflected in our future work packages. Section 8 and 9 discuss and conclude the deliverable, while, respectively, listing the limitations of our approach and envisaging implications and directions for the future work in CONSOLE.

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3 Methodology

3.1 Approach

The task was expected to be carried out based mainly on the 3rd project meeting through a dedicated stakeholder workshop allowing discussion of improved solutions (WEU1.1; M11), but this was cancelled due to the Coronavirus pandemic.

This was substituted by a twofold activity providing a combination of an internal survey amongst partners plus a public web-based stakeholder workshop.

3.2 Partner Survey

The survey questionnaire was made available by UNIBO after discussion with the whole consortium. The questionnaire was directed to project partners, to explore in particular the point of view of non-academic partners, encouraging consultation with local stakeholders.

The survey (partially) substitutes the planned activities by allowing to summarise the opinions of project members (and selected stakeholders) about the most promising improved contract solutions to be studied in the remaining of the project (WP3, WP4), by distilling lessons learned from WP2 and identifying most relevant solutions in the case study regions and in the EU as a whole.

It was focused on selected public goods (climate change mitigation, biodiversity and water quality) that have been on the one hand more frequently addressed by the AECPGs contract solutions detected in WP2, and that are on the other hand focussed in the recent societal and policy discourses on agriculture and forestry in Europe. Nevertheless, partners were asked to add more potential solutions considered important in the reference region/country. These are left open on purpose.

The survey considers climate change mitigation and carbon sequestration, water quality, and biodiversity as three most important PGs since the European Green Deal weighs them heavily within its action plans. For example, the EU Biodiversity Strategy for 2030 (European Commission, 2020b) is considered in the Farm to Fork Strategy and the Common Agricultural Policy (CAP) reform by e.g. the inclusion of eco-schemes and result-based payment schemes for long-term sustainability of both nature and farming. for instance, one target is the increase of landscape diversity in agricultural areas which could enhance biodiversity, carbon sequestration, prevent soil erosion and depletion, filter air and water, and support climate adaptation. The EC released another action plan linking the CAP reform and the Green Deal (European Commission, 2020a)which explicitly states that the CAP Pillar II will continue to offer agri-environment-climate payments supporting ambitious farming methods and practices beneficial for the

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environment and climate and providing environmental public goods in the fields of climate change mitigation and adaptation, the protection and improvement of the environment, including water quality and quantity, air quality, soil, biodiversity, landscapes and ecosystem services. The Farm to Fork strategy (European Commission, 2020c) aims to ensure sustainable food production through green business models like carbon sequestration by farmers and foresters that should be used for designing CAP payments and additional incentives.

While the European Commission regards climate mitigation, carbon sequestration, water quality & quantity, and biodiversity as the main byproducts of sustainable farming, the CONSOLE case studies highlight other important AECPGs too as detailed in deliverable D2.4. 'Biodiversity' was the most frequently mentioned AECPG out of the 60 contract solution case studies analyzed, followed by 'Landscape and scenery', 'Water quality', 'Soil quality', 'Rural viability and vitality', 'Farm animal welfare', 'Cultural heritage', etc. AECPGs like 'Rural viability and vitality', 'Recreational access', 'Cultural heritage', 'Resilience to natural hazards,' etc. were usually addressed indirectly as an effect linked to the improvement of other "main" AECPGs. Also, the AECPGs addressing climate mitigation, namely "greenhouse gas emissions" and "carbon storage' are mentioned indirectly in many studies. Thus, contract solutions for the improvement of one specific AECPG can have impacts on the provision of another, which is why it is important to narrow down the best practices for each AECPGs, which this survey aims to achieve.

Before filling the questionnaire partners were required to:

A. Reading the deliverable D2.1 to acknowledge the information provided in the case studies factsheets;
B. Reading the deliverable D1.1 and other project documents;
C. Considering in the answer the region (e.g. NUTS II) or country they were referring to and the area in which more likely the WP3 survey/or WP4 could be carried out. For instance, Emilia Romagna and Tuscany were identified for the Italian case studies. However, this was not an identification of the precise survey area or survey population for WP3;
D. Considering the policy context (in particular the new needs and strategies in the post new Green Deal).

UNIBO collected and analyzed the questionnaires and provided a draft of the deliverable to be used as a basis for further activities, including, to some extent, the stakeholder virtual workshop (together with WP2 factsheets that were the main focus points of the workshop).

Other protocols that were set among the respondents were:

E. Textual reasoning and elaboration was welcome, also concerning instrument design;

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F. One questionnaire per partner was allowed to be sent (they could collectively discuss the responses internally if needed);
G. Types of instrument to be referred were those in the scope of the Project: land tenure, result-based, collective, value chain.

The timeline was set-up as follows:

H. 15 May – deadline for sending filled questionnaire to UNIBO;
I. 20 May – draft summary document circulated by UNBO;
J. End of May/beginning of June: virtual stakeholder workshop (one at EU level);
K. Mid/End of June final deliverable.

The timeline was delayed and the writing of the final version of the deliverable was accomplished in October 2020.

The questionnaire is included in Annex 1.

3.3 Workshop

The workshop was held in the form of a web-seminar entitled "New instruments for the provisions of public goods by agriculture and forestry: insights from the CONSOLE project."

Figure 1: Banner of the webseminar

The format was partly different from what was originally planned; in particular given the means (webinar) and the later stage of the Project (more advanced stage of WP2 and need to activate WP5), the focus was more on dissemination of the results and collection of structured feedback rather than mostly interactive

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discussion as originally planned for the face-to-face version. The proceedings of the webseminar are reported below.

The CONSOLE project partners have organised the web-seminar on October, 19th 2020, to disseminate the outputs of the project and in particular share the WP2 activities and results. The seminar was an opportunity to wrap-up the work carried out and provide insights on improved tools for the provisions of public goods by agriculture and forestry.

A total of 133 participants had registered for the workshop and around 105 participants attended the meeting (105 participants during the first 2 sessions, and 101 participants in the ending sessions), excluding the organisers and panelists.

Figure 2: A snapshot of the webseminar with the speakers and organisers of the event.

The program of the webinar was:

L. 10:00 prof. Davide Viaggi (UNIBO) introduces the CONSOLE Project and the objectives of the seminar.
M. 10:10 Dr. Lena Schaller (BOKU) outlines the range of case studies reviewed by the CONSOLE project
N. 10:40 Dr. Tania Runge (Thuenen Inst.) summarizes the lessons learned from the CONSOLE case studies
O. 11:00 prof Thia Hennessy (UCC) moderates the Q&A
P. 11:45 prof. Davide Viaggi (UNIBO) concludes the seminar.

After the presentation of the project and the summary of the results of WP2, two interactive sessions were held, the first using polls by participants on selected questions and the second allowing an open discussion.

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4 Preferred case studies for different AECPGs

This section reports the results concerning the case studies that were preferred for an improved delivery of the different AECPGS.

4.1 AECPG: Climate change mitigation (Carbon sequestration and GHG emission mitigation)

The partner survey revealed that the most interesting case studies that the partner preferred for delivering climate change mitigation as a public good were the cases AT4, FI3, and FR4. Interestingly, all three case studies are result-based approaches. Therefore, it could be relevant to explore the potential of result-based solutions in delivering climate change mitigation.

The case studies AT4 and FI3 address carbon sequestration and the case study FR4 addresses GHG emission mitigation. The case study AT4 – The Humus Program of the Ökoregion Kaindorf was most preferred by the most of the partners as a successful contractual solution that can be applied to their own countries (ASAJA, Spain; Luke, Finland; VUA, Netherlands; Thunen Institute, Germany; Trame, France, ZSA, Latvia; RER, Italy, etc.). The stakeholders found this case study to be an interesting and promising result-based contract solution, especially for its flexibility and high future potential (Thunen, Germany; AREFLH, France). Partners at INRAE (France) highlight that this flexibility could be both a weakness and a strength and point out the limitation of low payment rates (30€/tCO2eq) that the contract provides. CNRS (France) discuss the legal potential of the contract: its flexible longevity, its monitoring system, simple indicators of measuring the outputs, and limitations of the farmers' freedom, among other issues of the contract.

Another case study highly preferred by the partners is FI3 -Carbon Market: a marketplace for the restoration of ditched peatlands. Many partners found it interesting for their countries – UK (University of Leeds), Netherlands (WWF), Latvia (ZSA), Austria (Boku), Germany (Thunen Institute), etc. Thunen institute (Germany) notes that for implementing the same contract in Germany, several landowners and managers within one peatland area would need to agree to the restoration in order to increase carbon stocks, which could be a challenge. CNRS (France) highlighted the legal potential of the contract like collective owners, private vs. public protected area, and funding through private crowdfunding.

Similarly, FR4- Ecomethane is also been suggested as an interesting case study that could be tried in their countries (Thunen Institute, Germany; UCC, Ireland; SGGW, Poland, etc.), especially because measuring the GHG emissions through the fatty acid composition in the milk made this contract solution particularly simple to implement. However, CNRS (France) also points out the weakness of the contract being its low payment rate because of low private funding. Also, no carbon certificates are issued to payers. This might turn out to be dis-incentivizing for the farmers.

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4.2 PG: Water Quality

Partners preferred the contractual solutions DE5, DE4, FR2, and LV1 as the best case studies for delivering the AECPG: water quality. Thunen Institute (Germany) considered the case study DE5 as the most successful example for environment protection along the value chain, in addition to other partners (SGGW, Poland; AREFLH, France; UNIPI, Italy; and CNRS, France). Some limitations of the case study is that there is an absence of a model contract between participating parties (CNRS, France) and missing demand for bread produced with wheat of lower protein content and the lack of bakeries (as well as food retailers with bakery) that are willing to support this scheme (Thunen Institute, Germany).

FR2 is another interesting combination of a value chain and result-based approach targeted at farmers with land in designated water catchments (Thunen Institute, Germany). However, potential improvements needing investigation for FR2 are to increase the number of farmers participating (INRAE, France) and future establishment of a regional trademark (Thunen Institute, Germany). LV1: NUTRINFLOW is another great successful example for a collective action targeting water quality as it enables a coordinated implementation of water retention and on-farm drainage based on a holistic planning agreed by all landowners having land along a specific section of a water stream (Thunen Institute, Germany). However, CNRS (France) also highlights that the weakness of LV1 regards the contract length (2 years) which might be insufficient for long-term environmental results.

4.3 PG: Biodiversity

The questionnaire reveals that the case studies: NL3, NL4, IRL3, IRL2, DE2 are most preferred by the partners as the best solutions for delivering biodiversity and related public goods. NL3/4: Biodiversity monitor for dairy/arable farming is most preferred by the partners. It is a result-based methodology to measure and reward the performance for biodiversity (including soil, landscape, environment, and climate) per dairy farm and arable crops in the Netherlands (UNIPI, Italy). The diversity in rewards and payments for farmers enables a wide range of participants to get involved and makes it widely applicable (VUA, Netherlands).

Another case study seen as an interesting contractual solution is IRL3: BRIDE - Biodiversity Regeneration in a Dairying Environment (CNRS, France; VUA, Netherlands; ZSA, Latvia; Boku, Austria; etc.). BOKU (Austria) considers IRL3 as a very suitable solution for Austria, as it is implemented in intensive dairy farming in regions, however it requires a farmer-driven approach and a landscape level coordination (via clustering) which is necessary for the re-establishment of biodiversity. IRL2: the Result-based Agri-Environment Payment Scheme (RBAPS) Pilot in Ireland is another interesting contractual solution due to its correlation with biodiversity targets (INRAE, France). RER (Italy) highlights the contract strengths as being the logic of the result indicators, the tiered payment structure, the use and understanding of the score assessment, the optimal management to obtain the best possible result (and payment) and many other reasons. The case study

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DE2: Organic farming for biodiversity is also seen as an interesting contractual solution by the partners especially because of its credit-point system (ZSA, Latvia; BOKU, Austria; Thunen Institute, Germany; and TRAME and INRAE, France). BOKU (Austria) highlights that the credit point system pronounced in DE2 seems to give more flexibility to the farmers to choose measures they can integrate into their farms.

4.4 Other Public Goods

Though most of the contractual solutions deliver multiple public goods, partners shortlisted the public goods that are important to their countries and consequently, the most interesting case studies that would best deliver those PGs. However, many other AECPGs that the case studies deemed important have been overlooked in the questionnaires like e.g. air quality and quality and security of the products. Even though these are usually indirect benefits of key AECPGs, it is important to discuss them for outlining improved contractual solutions.

Q. **Soil quality**: Many partners considered soil quality to be a relevant public good (SGGW, Poland; Thunen Institute, Germany; etc.). Many of the measures relating to carbon sequestration are also relevant to soil quality. In this respect, the example set out in case AT4, NL3 and NL4 is quite inspiring (ASAJA, Spain).

R. **Rural Vitality**: Rural vitality was considered important for the partners, but was usually considered as an indirect effect of other AECPG. For e.g., UNIPI (Italy) highlights that in the ITP project (IT6), there are also advantages in the rural vitality thanks to the collective implementation of the measures. Luke (Finland) stated that rural vitality would be interesting to study, but difficult to take it as the main focus.

S. **Farm animal welfare**: It is another AECPG of high importance to many partners (VUA, Netherlands; BOKU, Austria; etc.). Partners considered the case studies FR4, BG3, and AT1 as most interesting for delivering animal welfare. ZSA (Latvia) highlighted food security as an additional AECPG which was an indirect effect of animal welfare, and considered the case studies AT1 and BG3 of high importance for food security as they were able to deliver the AECPG animal welfare efficiently.

T. **Landscape & scenery, recreation and cultural heritage**: CONSOLE considered these AECPGs as separate in the case studies and in the deliverables of WP2, but many partners listed them together. Likely, the partners considered that landscape & scenery and cultural heritage were tightly linked and the main causal factor delivering the AECPG “recreation”. Also, in WP2 landscape scenery was often addressed in combination with others (e.g. contract solutions fostering habitats, also have an effect on landscape/scenery etc.). Thus, landscape scenery was actually entailed in more then half of all case studies. Many partners considered these AECPGs to be highly important (BOKU, Austria; Luke, Finland; VUA, Netherlands; Thunen Institute, Germany; UPM, Spain; UNIPI, Italy; etc.). The case studies BE3 and IT6 are the most interesting contractual solutions as per the survey results. The BE3: Wildlife Estates Label in Flanders is considered interesting due to its scientific method encompassing multifunctional land management and delivery of multiple public goods like cultural ecosystem services, pollination, etc. (ELO, Belgium). Similarly, the case study Integrated territorial projects (IT5 and IT6) deliver multiple public goods (Thunen Institute, Germany).

U. Water Storage/ Retention: Many partners considered water storage and retention as very important AECPG (WWF, Netherlands; UNIPI, Italy; UPM, Spain; etc.) as it is also important

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for drought management (UPM, Spain). A good water retention was important also to avoid hydrogeological instabilities and PL3 was considered a good solution for Italian projects (UNIPI, Italy). IT6 and DE5 were also probable solutions (WWF, Netherlands).

V. **Resilience and management of natural hazards (like droughts and floods):** AECPGs that can directly or indirectly provide resilience to natural hazards were highly preferred. The Rewilding of retention basin in Massa Lombarda (IT3) case is intended to improve the landscape and environment conservation against the natural hazard as well as the IT6 case (UNIPI, Italy). UPM (Spain) considered drought mitigation as highly important PG. Other partners included flood management and drought mitigation as indirect effects of other PG deliver, like soil quality, water storage, water retention, etc. (SGGW, Poland; WWF, Netherland; Trame, France; etc.)

5 Preferred case studies based on contract-types

This section reports the results concerning the case studies that were preferred on the basis of the presented contract solutions.

5.1 Tenure-related instruments

Most of the partners preferred the case study DE3 – Collaboration for sustainability between institutional land owners and tenant farmers (Greifswalder Agrarinitiative) and LV2 - DVIETE LIFE as the the most interesting/promising contract solutions for tenure-related instruments. INRAE (France) suggested that DE3 is compatible with CAP measures. Evenor-Tech (Spain) considered LV2 as interesting because it promotes biodiversity and landscape through the restoration of a degraded area, thus providing multiple AECPGs. Tenure related instruments were often implemented through land purchase for objectives of nature protection, and then rented to the farmers afterwards as in the case of LV2 case study (BOKU, Austria). Other preferred cases were FI1, FI4, FR1, and BG4.

5.2 Result-based instruments

Partners choose the case studies NL3 and 4, FR4, AT4, AT2, FR2, and IRL3 as the most promising result-based contracts that can be applied across the EU. ASAJA (Spain) highlighted that an important factor for the implementation of results-based measures is the existence of agile mechanisms for controlling the achievement of results. UNIPI (Italy) stated that one of the weaknesses or result-based contracts will be to find the best indicators for every measure. Thunen Institute (Germany) raised that several case studies (like, FR2, NL3, NL4, etc.), have indicator sets that have been developed in collaboration between scientists and practitioners and also noted a huge potential for result-based schemes in the future CAP. Considering the indicators for results, FR2 is based on the improvement of agricultural practices using 21 indicators over the 42 provided in the IDEA method. The indicators are thus practice-based and the FR2 contract example can be considered an outcome oriented solution.

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5.3 Collective instruments

The case studies IRL1, IT1, IRL3,and NL1 best reflect the collective contractual selections according to the partner survey. The case study IT1 – incentives for collective reservoir is especially important because of climate change and growing threat of droughts and shortages of water for irrigation (SGGW, Poland). RER (Italy) suggested that IRL1 – the BurrenLife Project is a contract solution based on both result-based instruments and collective instruments and it is a very interesting method to promote a bottom-up method for local planning about biodiversity. Though IRL1 has been considered by respondents as one of the best collective contractual solutions, it was included as a result based solution in WP2 as it leans towards result-based approach. IRL1 entails a collective approach. However, the strongest contract feature in IRL1 is surely the result-based component (implemented in a hybrid approach, where participating farmers are rewarded annually for their environmental performance while also having access to a fund to carry out self-nominated 'conservation support actions' to help improve biodiversity over time). UNIPI (Italy) stated that the collective instrument secures environmental improvement at both economic (investment) and social (rural viability) levels. BOKU (Austria) also stated that collective instruments are also distinctively interesting especially as many AECPGs can only be provided at landscape level.

5.4 Value-chain instruments

The contracts that best showcase value chain instruments were the case studies AT1, DE5, and IT4, as observed through the partner survey. The case study AT1 was highly preferred by many partners since the project produces multiple benefits: it can ensure economic profitability of farmers in the mountain area and the good quality of meat production (Trame, France; Ecory, Belgium; ZSA, Latvia; RER, Italy; etc). It is an interesting method for enhancing biodiversity, animal health and welfare in the value chain contracts, to be promoted in the Rural Development (RER, Italy).

6 Interesting contractual solutions

6.1 Overall best contractual solutions for different PGs

Table 1 arranges the most preferred case-studies according to the partner survey by their contract-types and by the AECPGs they promote. A third variable defines which AECPGs are important for which countries. This can help us identify the mst promising contract solutions that can be applied to different EU countries depending on their need for a particular AECPG.

Though the cases can fall under multiple contractual-types, the survey highlighted the instrument that the partners consider the most important. For example, the case NL3/4 has elements of result-based, tenure-related, and value-chain contract types, but most of the partners saw it as a result-based contract. In contrast, FI3 is primarily a value-chain based contract, with some collective elements, whereas the partners considered it equally as value-chain

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and collective. In the webinar too, it was highlighted how a strict categorisation of contracts under one single type does not reflect their actual implementation. How the different elements are mixed together was considered more important than a formal categorisation.

Respondents selected one case-type efficient for delivering multiple AECPGs. For e.g., NL3/4 is preferred by respondents for delivery of climate change mitigation, biodiversity, and landscape & scenery. Also, cases IT3 and IT6 delivered water retention and at the same time are also preferred cases for flood management.

Correlating the preferred AECPG and contract-types to countries where the importance of the public good is high, can help design efficient regional solutions. Partners also highlighted specific design elements of preferred contracts that can be used to design similar solutions for their country. This is discussed in the next section.

Table 1: Public goods provided by most preferred contract-types

AECPGs / Contract-type	Tenure-related instruments	Result-based instruments	Collective instruments	Value chain instruments	Others	Countries where PG is of 'VERY HIGH' importance
Climate change mitigation		NL3/4, AT4, FR4	FI3	FI3		Finland, Netherlands, Latvia, Austria, Spain, Italy, Ireland, Belgium
Water quality		BE4, DE4, FR2	UK5, LV1, NL1	FR2, PL3, DE2, DE5		Netherlands, Austria, Germany, France
Biodiversity	BG4	AT3, IRL3, NL3/4, IRL2, AT2, DE4, DE1	IRL3	IT4, DE2, DE3		Finland, Netherlands, Bulgaria, Austria, Germany, France, UK, Spain, Italy, Belgium, Bulgaria
Soil Quality (and Health)		AT4, DE1			ES3	Germany, Poland
Farm Animal Welfare		FR4		AT1, BG3		Netherlands
Water Quantity			NL1			Spain
Landscape & Scenery/ Cultural Heritage/ Recreation	FI1, FI2, PL1, FI4	FI6, FI2, NL3/4	UK5, IT6, FI2, PL1	FI1		Netherlands, Austria, Italy
Water Storage/ Retention	IT3		IT1, IT6	PL3, DE5		Netherlands, Spain
Resilience to natural hazards (flood management,	IT3	IT5	IT6			Spain, Italy

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drought mitigation, etc.)						
Rural Viability & Vitality		IRL1	UK1, UK5,	DE2		Spain, Italy

6.2 Promising design features of preferred cases

The respondents elaborated on the design features of the selected contract solutions for each AECPG, keeping in mind a similar solution for their own countries. Also, the European Landowner's Organization (ELO) preferred the case NL3 as an interesting solution. The set of Key Performance Indicators (KPIs) are currently developed and tested in the coming year (CAP Pilots). The design element of NL3 that most interests them is the use of 'Key Performance Indicators' that are useful tools for assessing the contract outputs, including pollination and landscape, which has indirect effects on provision of cultural ecosystem services.

Deliverable D2.4 elucidates the indicators and measurement for each contract-type, like scoring/credit point system in result-based contract solutions or controls and monitoring of compliance in collective contract solutions. We extend it to review the partners' preferences of such design features. The elements of different contracts can be analyzed for their feasibility and can be further used/tested via farmer surveys and models (target of WP3 and WP4). These 'promising design features' can be used to develop the improved solutions and provide an outlook on how to proceed for WP5.

Table 2: Promising features evidenced in the cont

AECPG	Selected Contractual Solutions	Promising features (as per respondents)
Climate change mitigation	AT4	- Flexible contract conditions - Direct measurement - 'Emission certificates' - Free management decisions according to best practices: fertilization with compost, minimal tillage, use of permanent cover crops, crop rotation/diversification and avoiding use of pesticides
	FI3	- Establishment of private protected areas - Private crowdfunding (independent from public funding)

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		- Online platform
	FR4	- Private-private result-based solution - Indicator of measuring ghg emissions – fatty acid composition in the milk analysis (Emission-based payments) - Animal nutrition and welfare
Water quality	DE5	- Environment Protection Along The Value Chain - Wheat Prices Based Upon Protein Content - Best Practices: Late Fertilization Of Wheat Fields To Avoid Nitrate Leaching Into The Groundwater - Communication Strategy For Selling To Consumers (In Form Of Marketing Slogan)
	DE4	- land tenure: the high ratio of rented instead of owned land and the influence of lack of ownership on the success of the contract - Participatory decision support tools - Biodiversity protection as additional objective
	LV1	- Best practices: introduction of environmentally friendly elements on drainage systems connected to the rivers or streams - Multi-stakeholder project: three-side project with Public – private – civil society
	PL3	- Private sector funded value-chain (could be offered as an instrument for big companies if they are willing to increase/promote their social responsibility) - Multiple best practices: fertilizing, chemical protection, silage storage, manure spreading, etc.
Biodiversity	IRL3	- Landscape approach (geographical cluster)
	NL3/4	- Multi actor involvement, especially the participation of 'Duurzame Zuivelketen / Sustainable Dairy Chain' - Key performance indicators for biodiversity measurement - Bottom-up approach and combines various funding sources (including loan interest discount)
	IRL2	- Scoring assessment and its correlation with biodiversity targets - Tiered payment structure

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		- Annual farmer trainings
	IT4	- Implementation of 10 rules of production for farmers (defined together with WWF, UNITUSCIA and UNIBO)
	AT2	- Bottom-up approaches and freedom to choose management practices - Additional and large-scale monitoring information
	DE2	- Credit point system with a broad range of over 100 measures - Availability of advice at individual farming level
Soil Quality (and Health)	AT4	- Flexible contract conditions - Direct measurement - 'Emission certificates' - Free management decisions based on best practices: fertilization with compost, minimal tillage, use of permanent cover crops, crop rotation/diversification and avoiding use of pesticides
	ES3	- Monitoring using new technology, while significantly reducing the cost for on-the-spot controls
	DE1	- Best practices: seeding wild plant for greening the inter row and field borders
Farm Animal Welfare	AT1	- Value chain includes significant actors, which provides trust, traceability and confidence: farmers, meat processor, animal welfare organization, citizens & agritourism
	FR4	- Private-private result-based solution - Indicator of measuring ghg emissions – fatty acid composition in the milk analysis (Emission-based payments)
	BG3	- Market sector-oriented contract type between farmers and distributor - Cover the whole value chain
Water Quantity	NL1	- certification of the collective

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Landscape & Scenery/ Cultural Heritage/ Recreation	BE3	- candidacy to the label is assessed according to the evaluation grid, comprised of criteria that are embodied by the questionnaire

7 Results of the stakeholders workshop

The web-seminar organized in October 2020 was an opportunity to provide insights on improved tools for the provisions of public goods by agriculture and forestry. A total of 105 participants attended the meeting, excluding the organisers and panelists. 40% of the participants were non-scientist, 19% representing environmental organisations or advice, 10% administration, 7% farmers, foresters or landowners and 3% from industry or business organisations.

After a presentation on new contract solutions for the improved provision of public goods from agriculture and forestry, a selected number of lessons learned from the case studies were presented. For each of the three aspects targeting, payment and contract design, three statements were presented and the audience was asked in the form of polls to select one of them (thus on purpose excluding multiple choices).

The participants were asked to answer the question: *Which is the most important targeting setting for you?* The set of statements around "Targeting" was the following:

A. **Targeting** the contracts **to specific regions** addresses regional criticalities and enhances the farmers' and foresters' interest and understanding of measures.
B. **Defining** and setting **clear AECPG targets**, and designing management measures with high relation to AECPG improvement, enhances effectiveness.
C. **Involving land-managers in target-setting** and **measure development** leads to higher equity, compatibility with their businesses and can create win-win situations.

The majority of stakeholders (52%) voted for involvement of farmers and land managers in target and measure setting (C), the two others received both 24% each. Looking at the vote of all participants, thus including researchers the repartition of the votes was slightly different. The majority (41%) voted for the involvement of farmers and land managers in target and measure setting (C); this was followed with 39% by defining and setting clear public goods targets (with almost equal number of votes, 39B%) and targeting the contracts to specific regions (A) got (20%) of the votes.

The second question was: *Thinking about the money in contract solutions, which is the most important payment statements for you?* The participants were asked to choose amongst the following statements:

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A. **Market-based payments** complementing or replacing public payments contribute to a increased delivery of public goods.
B. **Payment levels perceived as fair** and reflecting **economic feasibility** are leverages for increased acceptance and demand of contracts.
C. **Payment settings** like access to investment support, free advice or training and **payment timing** are more important than the revenue itself.

With 42%, a majority of the non-scientific participants voted for A, giving preference to market-based payments for public goods. 37% voted for "payment levels need to be perceived as fair" (B) and 21% for payment settings and timing (C). Looking at the cumulative voting results of all participants, interestingly the ranking of the statements A and B is inverted. The majority voted for the statement that payments have to be perceived as fair (44%), followed by the statement that market based payments are key (35%), showing that the participating stakeholders give more attention to market-based payments than the scientists. The third statement received 21% of votes on aggregate.

The third poll addressed was "Design" with the following question: *Which is the most important design statement for you?* The proposed three statements *were:*

D. A **simple and clear** design of the contract solution and a good **comprehensibility** enhances participation.
E. A pilot phase allowing **real-life testing** before upscaling leads to a more suitable contract design .
F. **Building on already existing structures and relationships** when designing contract solutions leads to easier implementation and cost reduction.

50% of non-researchers voted for real-life testing (B), followed by a simple and clear design (A) with 33%. The least votes got building on already existing structures and relationships (C) with 17%. Looking at all votes, A and B were equally important (40% each), followed by building on existing structures and relationships is key (20%).

In the final question the participants were asked to answer the question: *Which contract types would you like to engage in or work on?* The participants could choose one of the four contract types addressed in Console as well as the action-oriented contract. The greatest interest was expressed for result-based/result-oriented option with an overall vote of 44% (54% for the non-researchers), followed by collective implementation/cooperation (overall 24%, non researchers 25%). Value chain-based option was chosen by 14% of participants, and land tenure with environmental clause was chosen by 11%. The current approach for agri-environmental schemes (action-based contracts) was chosen by only 7% of the participants.

The discussion was partly driven by the requests for comments that could provide ideas about improvements in contract solutions. The main points raised were:

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Practitioners having experience with result-based schemes made a strong point about this kind of instrument, also emphasising its long-term perspective and the benefits in view of changing famers' mind. It was highlighted that having farmers involved in the definition of targets is key for these schemes. It was also stated that result-based payments may be important for maintenance, not only for improvement of environmental conditions. On the other hand, it was also highlighted that the result-based measures can be difficult to manage, but if done right they can be quite successful.

It has been emphasized that in CONSOLE, we are looking into the four contract types (result-based, collective, value-chain, land-tenure), but these are not exclusive as contracts need the involvement of private sectors and other partners as well. The distinction in four types is mainly theoretical, but all of the options presented are important and can or should be combined. They are all closely related. In addition, successful results may be obtained thanks to a combination of solutions, for e.g., collective elements and result-based payment (e.g. the Austrian humus program). It is widely agreed that mixture/hybrid contracts are often implemented in practice.

It has been highlighted that one major problem is how to scale-up these case studies into wider program implementation. This is indeed also the main topic in the current EU policy agenda, namely the negotiated CAP reform.

Moreover, the importance of taking into account transaction costs has been pointed out by one participant.

Difficulties were highlighted that arise from targeting specific public goods, in particular for system-based approaches, like organic farming, that deliver of multiple public goods, need to be considered; targeting too specifically is one specific public good may not be the best approach. It may be needed a combination of general system-based approaches delivering multiple environmental goods and additional activities to fill the remaining gaps.

Value chain approaches may have advantages in relation to the question of who is paying for public goods, but also bring problems. E.g. are: a) equity among consumers, as a minority of consumers pay for goods that benefit all the society (so there is a free rider situation); b) equity along the supply chain as a lot of actors along the supply chain will benefit from the consumer´s willingness to pay; c) concerning the policy making, there is a real tension between the market power and the AECPG delivery aspect which is often not well resolved. As different components of policy making deal with these different aspects, the separation of consumers' policy and agriculture policy is noteworthy.

Some experience from New Zealand has been reported, highlighting that public goods provision may also benefit farmers in terms of increase in efficiency, however, without a clear consideration of the broader environmental consequence of the practices adopted, there may be important trade offs between AECPGs that are not considered.

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8 Discussion and limitations

In spite of the work done, this exercise had several limitations:

A. The work done with stakeholders was less interactive than expected, which yielded interesting but somehow simplified inputs;
B. The work in the end provided a good view of replication opportunitities, but remains poor in terms of ready-to-use improved solutions; this will need to be taken up in the the following project activities;
C. On the other hand, the combination of the survey and workshop allowed to better identify some key critical points in design and implementation, which can be a good basis to understand the directions to take when looking for improved solutions;
D. A number of misunderstandings and different intepretations were identified in the process, which hints at the difficulty with communicating and understanding contract features.

9 Conclusions

This document provides a step in the direction of the identification of promising new solutions building on existing experiences. The focus is mainly on identifying interesting cases that can be transferred to other countries or can be used as lessons learned. In addition to existing cases, it would be important to consider the characteristics of these cases. These might be adopted to totally different conditions, or match with the delivering of totally different AECPGs. It became abvious that the partners give preferences to different public goods. In some cases that was due to regional specificities or needs, although the survey is probably not able to give so detailed information for this.

Indeed, several cases were identified that attracted a wide attention by partners from many countries. Three main AECPGs (carbon sequestration, biodiversity, water quality) were mostly confirmed as of high or very high importance in most cases. That survey result was similar to the reported frequency of the relevant cases in WP2. Indeed in WP2, biodiversity was the most frequently addressed AECPG followed by landscape & scenery and water quality. Soil quality was also quite important (with 21 mentions), whereas AECPGs addressing climate regulation, together account for a ¼ of the case studies (cfr. D2.4). The relevance of these AECPGs is also corroborated by the recent EU policy agenda (Green Deal, Farm to fork).

The complexity of the connection between instruments, their specific features and mechanisms to incentivise AECPGs, will have a number of implications for WP1 and WP3.

9.1 Main conclusions for WP1 (framework):

A. The exercise confirmed that there is a lot to learn from existing cases; so WP2 factsheets will be very relevant for the future framework and learning processes;

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B. Many cases are usually important or very important and many solutions are appreciated because they deal with multiple AECPGs; as a consequence the framework would need to start with the full bundle of AECPGs relevant in an area and account for these relationships;
C. The variety of solutions found is very wide and difficult to summarise; a mix of key design parameters (possibly organised hierarchically) and examples is important;
D. All types collect some interest, though result-based (or variants/graduations) are probably the highest in the agenda (but it depends on the AECPG considered);
E. Different interesting features go beyond the types originally addressed by CONSOLE (e.g. FI3); so it will be very important to connect the 4 contract types to these options.

9.2 Main conclusions for WP3 (survey):

A. Area and population: while many instruments address very particular cases, there is an emphasis (also in the wider policy agenda) on solutions that can upscale the use of these instruments, i.e. potentially addressing major AECPG issues and a wide section of the population of farmers/foresters. It may be expected that for a region with relatively homogenous conditions the contract design will target the "mainstream" farms not yet engaged in the type of AECPG contracts;
B. Instruments: The variety of different instruments is very high, also in connection with different public goods. The number of cases and the interest is quite balanced across contract types. It would be important to have a common part of the WP3 surveys able to collect farmers and other landowners opinions about the acceptability of the 4 main contract types regarding some key contract design features;
C. If more detailed examination is needed, it will be possible to concentrate only on one contract type within the survey. On the basis of the partner survey reported in this Deliverable, the most interesting contract could be a result based instrument.
D. In addition, it would be important to identify some essential and interesting characteristics among the most interesting cases and evaluate the acceptability of them more broadly and in the context of different AECPGs and even contract types.
E. If a single AECPG is to be chosen for the choice experiment (CE part of the survey), this exercise corroborates the importance of carbon sequestration (climate change) and biodiversity, which have a comparable level. It is also an interesting option to try to target the CE part of the survey on the landowners' preferences regarding the adoption of new result based/oriented instruments either towards improved provision of biodiversity or carbon sequestration. In any case, a common CE across cases/countries requires that the survey is kept very fundamental and simple, but with scope to have some locally useful questions for particular geographical contexts.
F. It will be important to take explicitly into account transaction costs or proxies of them.
G. Despite that it will be a challenging exercise.

9.3 Main conclusions for WP4 (modelling):

A. The well known complexity of the topic of contract solutions is confirmed in this exercise. That suggests focusing the attention on the simplifications needed to make the modelling part feasible.
B. As the exercise until now and partly in WP3 could not focus much on improved solutions, the modelling part of the Project could be the one where to investigate this topic in detail.
C. Based on the comments on hybrid types, it is important to consider also these types or similar policy mixes in the simulation (to be considered how to do, as the structure of the WP is by types).

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D. It will be important to take explicitly into account transaction costs or proxies of them.

9.4 Main conclusions for WP5 (testing):

A. The compilation of the case studies and in particular the lessons learned out of them can help to initiate the co-creation process at regional / local scale aiming at novel contract solutions.
B. The continuous feedback from practitioners as well as other stakeholders is crucial for operational solutions and the development of practical contract designs.
C. Testing of the framework would benefit from accompanying activities in terms of training and communication.

10 References

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11 Acknowledgments

12 ANNEX

Annex 1survey questionnaire (cfr. §3.2)

1) General:

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Partner Name:

Country/Region:

Partner staff involved (Names):

Stakeholder consulted (if any)

Name	Affiliation

2) Public good: Climate change mitigation

2.1) How would you state the importance of this public good in your country/region? (very low, low, medium, high, very high)

2.2) In relation to this public good, what is the most interesting contract solution applied in other case studies considered in WP2 and, can it be used in your country/region? (Provide motivation)

2.3 If there is a contract solution already in place in your area for this public good provision (among those studied by the project or others) what are the most relevant potential improvements needing investigation based on the SWOT analysis (if available)?

3) Public good: Water quality

3.1) How would you state the importance of this public good in your country/region? (very low, low, medium, high, very high)

3.2) In relation to this public good, what is the most interesting contract solution applied in other case studies considered in WP2 and, can it be used in your country /region? (Provide motivation)

3.3 If there is a contract solution already in place in your area for this public good provision (among those studied by the project or others) what are the most relevant potential improvements needing investigation based on the SWOT analysis (if available)?

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4) Public good: Biodiversity

4.1) How would you state the importance of this public good in your country/region? (very low, low, medium, high, very high)

4.2) In relation to this public good, what is the most interesting contract solution applied in other case studies considered in WP2 and, can it be used in your country /region? (Provide motivation)

4.3 If there is a contract solution already in place in your area for this public good provision (among those studied by the project or others) what are the most relevant potential improvements needing investigation based on the SWOT analysis (if available)?

5) Other Public good (please specify) (if more than one please copy and paste this section):

5.1) How would you state the importance of this public good in your country/region? (very low, low, medium, high, very high)

5.2) In relation to this public good, what is the most interesting contract solution applied in other case studies considered in WP2 and, can it be used in your country /region? (Provide motivation)

5.3 if there is a contract solution already in place in your area for this PG provision (among those studied by the project or others) what are the most relevant potential improvements needing investigation based on the SWOT analysis (if available)?

6) **Overall, can you identify what is the most interesting/promising solution** (also besides the cases studies in WP2) to be studied in the CONSOLE project WP3/WP4, based on its relevance for the EU policy context and with respect to each one of the following contract types (please provide motivations; skip type if you do not have a clear opinion):

6.1) **Tenure related instruments:**

6.2) **Result-based instruments:**

6.3) **Collective instruments:**

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6.4) **Value chain instruments:**

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