

## 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 D2.4**

### **Report on WP2 lessons learned**

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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 (BOKU) and co-leader (UNIBO). All CONSOLE partners reviewed the draft D2.4 document. Finally, the draft version was submitted to the project coordinator, for final review and validation.

## 1 Summary

This document represents deliverable D2.4 “Report on WP2 lessons learned” within work package WP2 “Diagnostic of existing experiences on AECPGs” of the EU Horizon 2020 project CONSOLE. The document brings together results and conclusions of WP2 Task 2.5. Particularly, the results from the analysis of solutions from inside the EU will be complemented with experiences beyond the CONSOLE EU case studies in order to derive inspiration and additional ideas for improvements of European solutions in WP3 and WP4. Moreover, the lessons learned will give first an overview for policy makers on innovative and successful solutions “outside the box”.



## 2 Introduction

### 2.1 Objective

The main objective of this document is to provide lessons learned from a variety of existing (implemented) contract solutions for the improved delivery of AECPGs in and outside the EU.

To achieve this objective, the deliverable takes the following structural approach: first, an introduction of the CONSOLE EU case studies is given by analysing them as regards contract characteristics, Agri-Environmental-Climatic Public Goods addressed (AECPGs), forestry and farming systems, contract partnerships, financing parties, and payment mechanisms. The results of this analysis are presented as graphs and figures and serve as a general overview, but also as a guideline to identify trends and beneficial combinations. Second, based on a qualitative analysis, contract specifications and reasons for success and failure of the CONSOLE EU case studies are presented. Here, reasons for success and failure are elicited for the single contract types individually (RB/RO, CO/COOP, VC, and LT). Third, reasons for the success of exemplary cases outside the EU and cases beyond the CONSOLE EU case studies are described (see Deliverable 2.2). Fourth, general conclusions and recommendations are drawn, considering EU case studies, case studies outside the EU and in-depth case studies (see Deliverable 2.3).

Through this approach, D2.4 provides insights about the specificities and framework conditions driving the success of the contract solutions presented in the case studies. Also, the deliverable can provide a knowledge basis about what needs to be considered when improving contract solutions for the enhanced provision of AECPGs.

### 2.2 Tasks addressed

Deliverable 2.4 concludes on the activities carried out in task 2.2 and 2.3 of the project. Moreover, Deliverable 2.4 is the direct result of task 2.5.

#### **Task 2.2 Data collection, selection and diagnosis of reasons for successes and failures of initiatives in Europe (M4-M11)**

Leader: BOKU; Co-Leader: UNIBO; Contributors: ALL

Task T2.2 collected and analysed 58 exemplary contract solution case studies in Europe. Moreover, in task 2.2 data was collected for 2 case studies in non-European countries. All of these cases have been described using the format of uniform and structured factsheets (D2.1) and have undergone a diagnosis of reasons for success and failures. Moreover, 26 case studies did undergo a qualitative in-depth analysis of which specific framework conditions and contract specifications led to a better fulfilment of environmental objectives and a better efficiency as regards different types of performance such as longevity, acceptance, effectiveness, etc. (D2.3).

#### **Task 2.3 Data collection, selection and diagnosis of reasons for successes and failures of initiatives in Europe (M4-M11)**

Leader: UNIBO; Contributors: BOKU, LUKE, TRAME

Task T2.3 collected promising and successful experiences outside the EU and cases beyond the CONSOLE EU case studies. To optimise the usefulness of task 2.3 for the project, the activities of the task have been revised during the first reporting period: After initial attempts to replicate the activities carried out in 2.2 also for selected cases outside the EU, it was decided to rather focus the efforts on a systematic literature review and to include also European case studies if not

targeted by the CONSOLE consortium and if such case studies can provide a more complete view of the issue.

### **Task 2.5 Lessons learned (M9-M11)**

Leader: BOKU; Co-Leader: UNIBO

Task 2.5 brings together results and conclusions of WP2. Particularly the results from the analysis of experiences inside the EU are compared with solutions from outside the EU and cases beyond the CONSOLE EU case studies in order to derive inspiration and additional ideas for the improvement of European contract solutions carried out in WP3 and WP4. Moreover, the lessons learned give a first overview for policy makers on innovative and successful solutions “outside the box”.

## **2.3 Outline**

Deliverable D2.4 is structured as follows: Chapter 3 gives an overview of the CONSOLE EU case studies in the 13 partner countries analysed by different characteristics and insights into contract specifications and reasons for success and failure of the four different contract types addressed by CONSOLE. Chapter 4 presents the lessons learned from cases beyond the CONSOLE EU case studies. Chapter 5 combines the findings of Chapter 3 and Chapter 4 and provides general recommendations. Chapter 6 gives an outlook on further use of Deliverable 2.4 for scientific analyses and for practice.

# **3 Lessons learned from contract solutions from inside EU**

## **3.1 Overview on EU case studies**

In this chapter, the CONSOLE EU case studies are presented based on different characteristics.

In detail, the case studies are presented and analysed by

- country,
- contract characteristics,
- AECPGs addressed,
- forestry and farming system,
- contract partnership,
- financing party and
- payment mechanism.

The contract characteristics were evaluated individually and in combination. The presented figures serve as a general overview, but also as a guideline to identify trends and beneficial combinations.

Data for 58 first-level case studies were collected in 13 European countries. For each country, a number of four first-level case studies were envisaged. This number was reached in all countries, and some countries delivered even up to six cases. Moreover, data was collected for 2 case studies in non-European countries. These 2 cases are included in the assessment of European cases as well, as a Finish pilot case builds upon the presented non-EU experience (FI1), while the Guadeloupe case study belongs to the French territory (FR3).

The first-level analysis has been complemented by a second-level analysis, performing an in-depth assessment of 26 of the 60 EU case studies. A detailed elaboration of the findings of the in-depth analysis can be found in Deliverable D2.3.

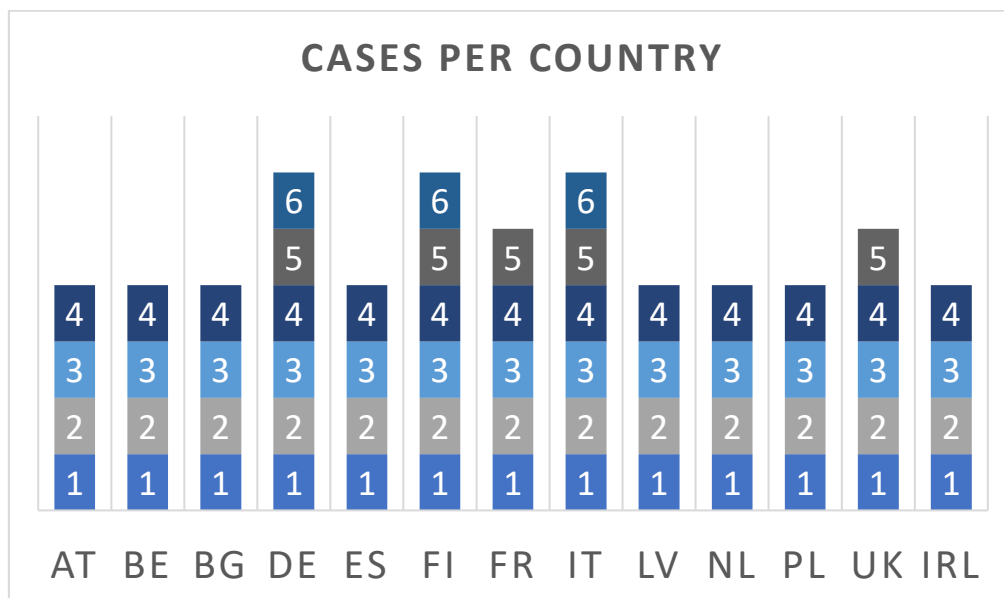


Figure 1: CONSOLE cases per country

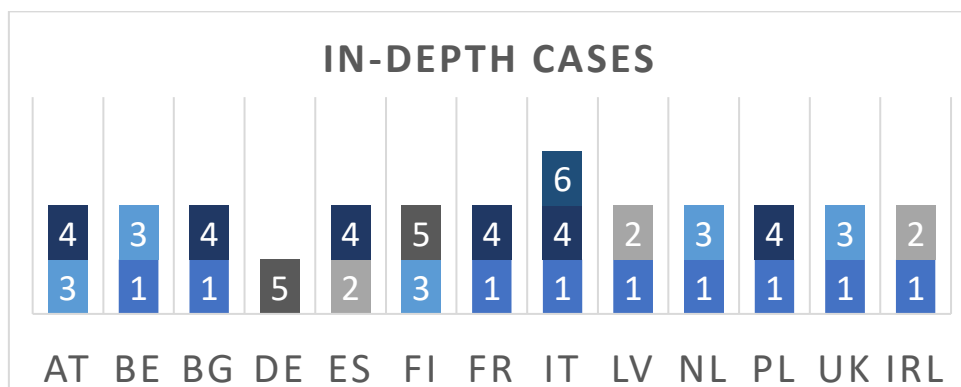


Figure 2: CONSOLE in-depth cases

In principle, CONSOLE case studies are examples of existing<sup>1</sup>, innovative<sup>2</sup> and effective<sup>3</sup> contract solutions aimed at improving the provision of AECPGs. However, for the purposes of covering failures, CONSOLE case studies can also represent real life proposals of contract solutions that for some reasons have never arrived at the stage of generating impact, but that can provide relevant insights (e.g. measures that opened calls without participation, contract proposals with no uptake, measures proved impossible due to regulatory constraints at EU level, etc.). Moreover, a CONSOLE case study is a case of real implementation of a specific contract “type”. In accordance with the CONSOLE Deliverable D1.1, contract solutions suited to be a case study in CONSOLE represent the contract types described in Box 1:

<sup>1</sup> existing: implemented

<sup>2</sup> innovative: new, promising, highly potential approaches, as well as ‘old’ approaches implemented in a new context, region, new place, etc.

<sup>3</sup> effective: reaching the objectives



CONSOLE focuses on 4 types of contract solutions:



**Result-based/result-oriented contracts (RB/RO):** Contracts specifying an environmental/climate result as reference parameter (in RB solutions, results are the reference parameter even for payments)



**Collective implementation/cooperation (CO/COOP):** Contracts implementing a formalised cooperation among farmers/actors in view of delivering AECPGs (in CO solutions, even payments are issued collectively and then distributed between the members of the collective)



**Value chain-based contracts (VC):** Contracts connecting the delivery of AECPGs with the production of private goods



**Land tenure-based contracts (LT):** Land tenure arrangements with environmental clauses

Also contract solutions representing combinations or hybrids of these are considered in CONSOLE.

#### Box 1: Contract solutions covered in CONSOLE

Figure 3 gives an overview on the distribution of contract types throughout all CONSOLE EU case studies. The classification of contract types is based on the partners' own assignment. Contracts that are purely action-based are excluded from the CONSOLE scope.

In parts, the contract solutions represented by the EU case studies are assigned to a single contract type. Some of the case studies however represent combinations or hybrids of different contract types (e.g. a result-based approach with collective implementation). For the general overview in figure 3, each case study has been screened for its “strongest” contract type element, and has then been assigned to the respective contract type group. Contract solutions which cannot be assigned to one main contract type, because two or more contract types are equally involved in the solution, are represented in each contract type group they have been assigned to.

#### Overview of main contract types

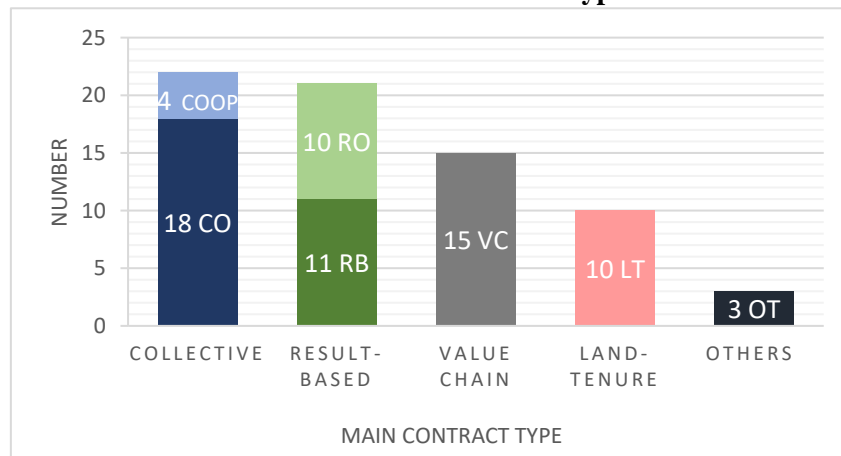


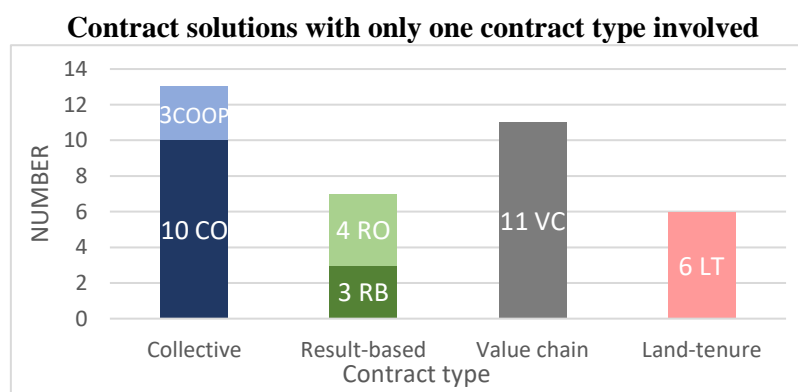
Figure 3: Number of case studies listed by contract type

Figure 3 reveals that 22 contract solutions are assigned to the main contract type of collective implementation/cooperation (CO/COOP), including 18 cases representing collective implementation and 4 representing cooperations<sup>4</sup>. Five collective case studies are double-counted because a second main contract type is involved. CO/COOP contract solutions are thus the most numerous in the project closely followed by result-based/result-oriented (RB/RO) solutions (21

<sup>4</sup> A detailed definition and differentiation between collective and cooperative can be found in chapter 3.3.2.

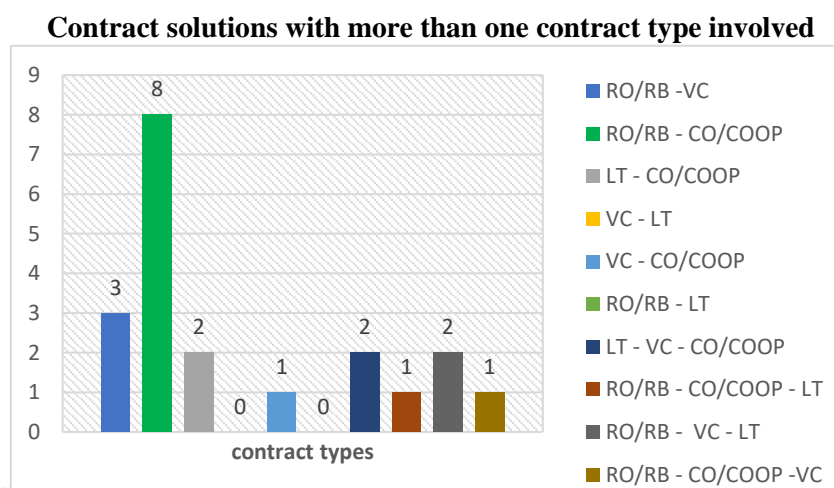


cases). The distribution of RB and RO contract solutions in the RB/RO pillar is nearly half/half; 11 of the contract solutions are explicitly result-based, 10 contract solutions are result-oriented contracts<sup>5</sup>. Again, 7 RB/RO contract solutions are characterised by incorporating a second main contract type. 15 case studies are assigned to the contract type group of value chain (VC) based solutions, 10 case studies belong to the group of land tenure (LT) based contracts (4 case studies each include a second main contract type). Finally, there are 3 case studies which are not directly assignable to one of the four contract types, therefore, they are assigned to an additional category named ‘others’.



*Figure 4: Number of contracts where only one feature is involved*

The bar charts in figure 4 depict contract solution cases with only one contract type involved. Compared to the total number, the figure reveals that particularly VC based solutions only rarely involve other contract type elements, 11 of the 15 VC cases are characterised by showing no characteristics of other types. Also, LT contracts mostly don't show elements of other contract types, here 6 of the 10 LT contracts include only land tenure elements. Collective contracts in contrast tend to appear more frequently in contract combinations, only 13 of the 22 CO/COOP contracts are characterised by solely CO/COOP elements. In RB/RO schemes, hybrids are most common, consequently only few contract solutions (7 of 21) include only RB/RO elements.



*Figure 5: Number of contract type combinations in the case studies<sup>6</sup>*

Figure 5 gives an overview of the occurrence of contract type combinations. The combination of RO/RB with CO/COOP contract types, with a number of 8 cases, is by far the most frequent combination. The mix of RO/RB and value chain (VC) contract types appears 3 times. 2

<sup>5</sup> A detailed definition and differentiation between result-based and result-oriented can be found in chapter 3.3.1.















<sup>6</sup> This graphic shows the appearance of combinations with two main types as well as contract solutions that have one main contract type and additional components of other types.

contractual solutions include both land tenure (LT) and CO/COOP components. VC and CO/COOP appears 1 time, it must be said, that in some of the other VC contracts a cooperative element in form of an association or foundation is also included, which are not considered in figure 5. Moreover, 6 case studies represent combinations of three different contract types, all of them combinations with land tenure.

An overview of all contract types and combinations can be found in the appendix (table 12).

CONSOLE considers 14 different AECPGs (see Box 2). In the case studies, a distinction is made as to whether the AECPGs are addressed directly or indirectly by the contract solution. By definition, only when the contract solution is directly aimed at maintaining or improving specific AECPGs, they are designated as ‘directly’ addressed (figure 6). If the improvement of the AECPG is a by-product of the measures taken, they are considered ‘indirectly’ addressed (figure 7).

CONSOLE considers 14 AECPGs:

	Landscape and scenery		Resilience to natural hazards
	Recreational access / Improvements to physical and mental health		Rural viability and vitality
	(Farmland) biodiversity/habitats		Cultural heritage
	Air quality		Quality and security of products
	Soil quality (and health)		Farm animal health and welfare
	Climate regulation- carbon storage		Water quality
	Climate regulation- greenhouse gas emissions		Water quantity (e.g. water retention)

*Box 2: CONSOLE list of agri-environmental-climate public goods (AECPGs)*

Figure 6 and 7 show that all CONSOLE AECPGs were addressed directly and/or indirectly in at least one of the 60 case studies. At this, the public good "(Farmland) biodiversity/habitats" is the most frequently addressed with a count of 46 case studies directly addressing biodiversity/habitats, and a count of 47 in total (directly and indirectly addressed). The figures reveal that in more than ¾ of the case studies, biodiversity is paramount. The AECPGs following biodiversity/habitats in frequency is "Landscape and scenery". It is directly addressed 17 times by the case studies and 35 times in total. Here, a synergy effect between the improvements of biodiversity/habitats and the amelioration of landscape and scenery can be assumed, as measures targeting an improvement in biodiversity/habitats can simultaneously have a positive influence on landscape appearance (e.g. flower strips, landscape elements, etc.). Third in frequency is the AECPG "Water quality" with 14 direct mentions and 22 indirect mentions, the latter count meaning that ¼ of the CONSOLE EU case studies approach water quality either directly or

indirectly. Looking at the sum of direct and indirect mentions, also the AECPGs of "Rural viability and vitality" and "Cultural heritage" are addressed often (24 counts, and 17 counts respectively). However, "Rural viability and vitality" as well as "Cultural heritage" are rarely the key AECPGs addressed in the contracts. They are mainly addressed indirectly as a side product of the improvement of other "main" AECPGs. Like water quality, also the AECPG of "Soil quality (and health)" is addressed by ¼ of the case studies directly and/or indirectly. Also, the 2 AECPGs addressing climate regulation, namely "climate regulation - greenhouse gas emissions" and "climate regulation - carbon storage", together account for a total of 22 mentions (direct and indirect) and therefore are also addressed by ¼ of the case studies.

In cases where the AECPG "Farm animal health and welfare" is present, it is usually the pivotal PG in the contract (7 direct and 1 indirect). Similarly, also the AECPG of "Resilience to natural hazards", is often pivotal if addressed (11 times directly addressed, 3 times indirectly). "Recreational access/Improvements to physical and mental health" is mentioned 6 times directly and 4 times indirectly. The AECPGs "Water quantity", "Quality and security of products" and "Air quality" play a subordinate role in the CONSOLE EU case studies.

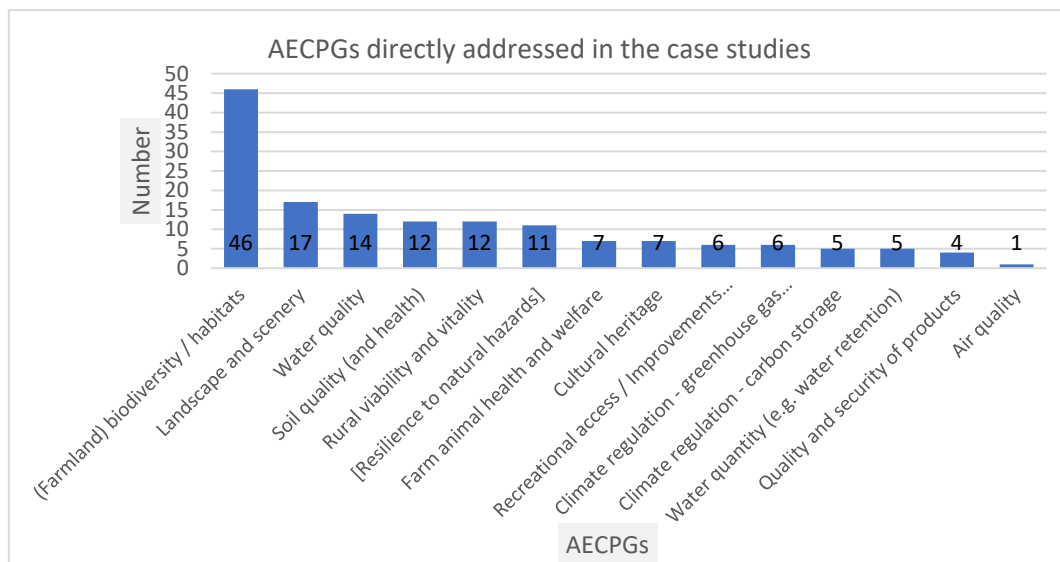


Figure 6: Overview of AECPGs directly addressed in the case studies

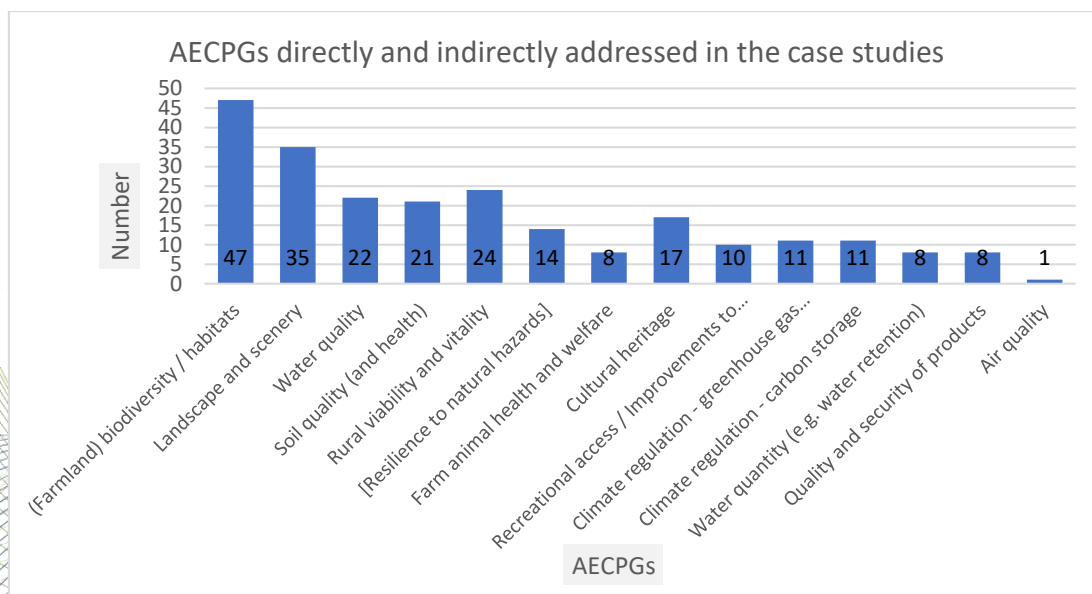


Figure 7: Overview of AECPGs, directly and indirectly, addressed in the case studies



## AECPGs addressed by different contract type



Figure 8: AECPGs addressed in result-based contract solutions

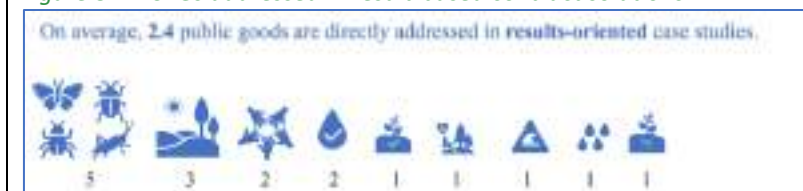


Figure 9: AECPGs addressed in result-oriented contract solutions



Figure 10: AECPGs addressed in collective/cooperation contract solutions



Figure 11: AECPGs addressed in value-chain based contract solutions



Figure 12: AECPGs addressed in contract solutions based on land-tenure contracts

Figures 8-12 on the left illustrate the frequency of AECPGs being directly addressed by different contract types. The AECPGs displayed refer to those explicitly stated by the partners in the fact sheets. Some case studies are excluded because of double-counting, this is indicated underneath the individual figures. Figures 8-12 provide information on the average number of AECPGs addressed by the contract types, and on the AECPGs ranked by quantity. The comparison reveals that particularly contract solutions based on collective implementation/cooperation, target a broader number of AECPGs, while result-based and result-oriented solutions are obviously targeted to the improvement of only a smaller number of AECPGs. As regards the distribution of AECPGs, no clear

tendency becomes obvious. In all contract types biodiversity is the most addressed AECPG. It can be noted that – compared to the other groups of contract types – result based solutions have a stronger focus on the provision of concrete and measurable, environmental AECPGs, such as biodiversity, water quality, soil quality and carbon sequestration. In contrast, more comprehensive, social AECPGs, such as rural viability or cultural heritage are more prominent in contractual solutions based on collective implementation and cooperation. The AECPG of quality and security of products is addressed particularly in the value chain based contract solutions while nearly neglected in all other contract types groups.

CONSOLE aims at the development of improved contract solutions for the provision of AECPGs from both agriculture and forestry. Therefore, the CONSOLE case studies reflect contract solutions designed for agriculture, as well as contract solutions explicitly addressing forestry.

Figure 13 shows that 47 of the 60 case study contract solutions are particularly designed for agriculture, while 9 contract solutions specifically address forestry. 2 case studies are suitable for both systems. The case studies LV3 and IT2 are assigned to being undefined: In LV3, all types of land-owners can participate regardless of whether a specific land management system is involved and IT2 failed before the introduction of the case study and for this reason, is not assigned to any specific system.

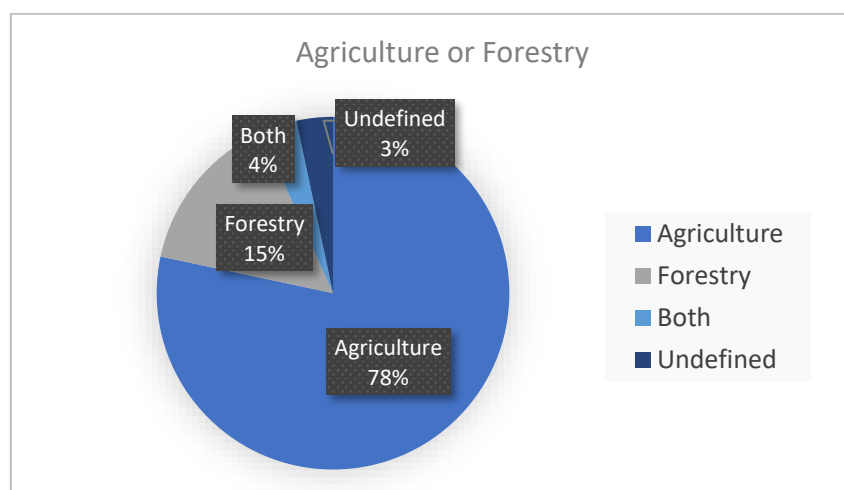


Figure 13: System addressed by the CONSOLE case studies

In Table 1 and Table 2, the contract solutions are further subdivided. The tables intend to provide a detailed overview of the agricultural or forestry systems covered by the individual contract solutions.











Agricultural system						
	Mixed agriculture	Arable	Grassland	Permanent	Dairy	Meat
Number of contract solutions	8	11	13	6	4	2
Case studies	DE2; FR2; IRL3; BE3; UK1; NL1; BE1; FR5	AT4; AT3; DE4; NL4; FR5; NL2; IT4; ES1; DE3	AT3; AT2; IRL2; IRL1; BG3; AT1; DE5; PL3; BG4; PL4; FR1; FI4; PL1; PL2; BG1	DE1; IT1; IT6; ES2; ES4; ES3	FR4; IRL3; NL3; IRL4;	BG3; AT1

Table 1: Agricultural or forestry systems covered by the individual contract solutions 1

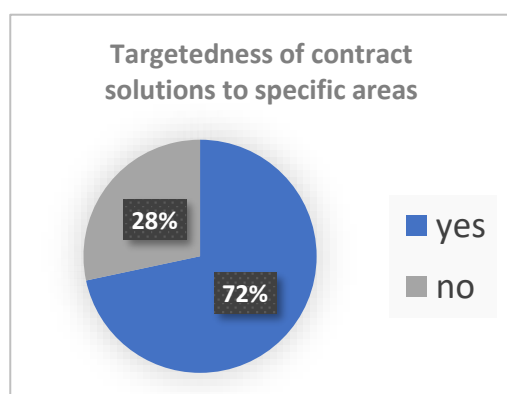
Table 1 reveals that 13 case studies are focused on grassland farming and 11 case studies on arable farming. 8 case studies can be adapted to a mix of different farming types. The farming type “Permanent” occurs in 6 case studies including farms producing wine, olives, and fruits. Some contract solutions are specifically targeted to a specific farm type: 4 contract solutions directly address dairy farms and 2 contract solutions address beef farms.



Agricultural or forestry system				
	River catchment/Water basin/Flood plain	Semi-natural habitat	Forest	Peatland
Number of contract solutions	9	5	11	1
Case studies	IT5; FR2; UK2; UK3; UK4; UK5; LV1; IT3; LV2	IRL2; IRL1; DE6; BG2; FR3	FI6; FI2; BE3; BE4; DE6; BE2; BE1; FI3; FI1; FI5; LV4	FI3

*Table 2: Agricultural or forestry systems covered by the individual contract solutions 2*

Some of the contract solutions covered by the CONSOLE case studies are oriented towards farming systems prevalent in specific landscapes/habitats: 9 contract solutions are designed for farms that are located within river catchment, water basin, or flood plain areas. Another 5 contractual solutions are targeted to farms managing semi-natural habitats. 11 contract solutions are aimed at forests and 1 contract solution specifically targets the improvement of AECPGs in peatlands.



*Figure 14: Targetedness of contract solutions to specific areas*

Figure 14 gives an overview on the distribution of contract solutions targeted to a specific area and contract solutions not specifically addressing certain regions or areas. The figure reveals that nearly  $\frac{3}{4}$  of the contract solutions represented by the CONSOLE EU case studies are targeted to a specific area or region. In 17 case studies, no evidence of targeting a specific region could be noticed, therefore it was assumed that participation is open to farmers or foresters across the whole country.

In the figures 15 – 21, the contractual partnerships of the contract solutions are delineated, the financing parties are pointed out, the EU support mechanism, if available, is indicated and the payment mechanisms are analysed.

### Contract relationships

Regarding the contractual relationships in the case studies, five different relationships can be distinguished, namely private-private, private-public, civil society-private, public-public, and public-private-civil society.



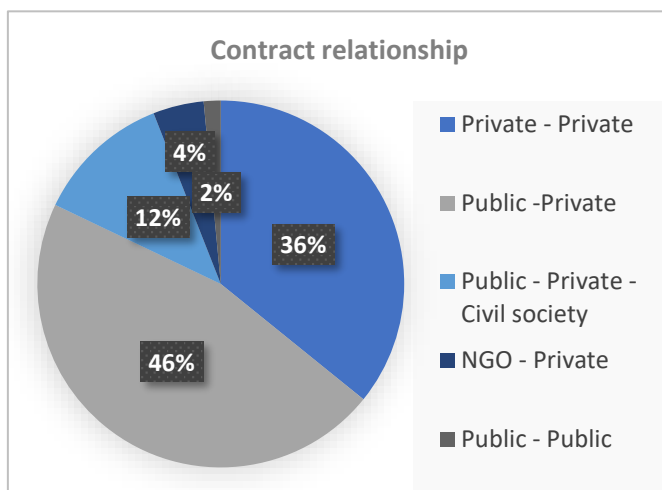


Figure 15: Composition of the contracting parties in the case studies

contract relationship.

Figure 15 shows that nearly half of the contracts are public-private relationships. Private-private relationships rank second with 36%. Only 12% of the contract solutions represent three-way public-private-civil society relationships. 4% of the contract solutions represents civil society (NGO)–private relationships and 2% (one case study) has a contractual relationship involving two public parties.<sup>7</sup> When taking a closer look into the contract types, it is revealed that nearly all value chain contracts are private-private, and the majority of the collective contracts are public-private

## Financing party

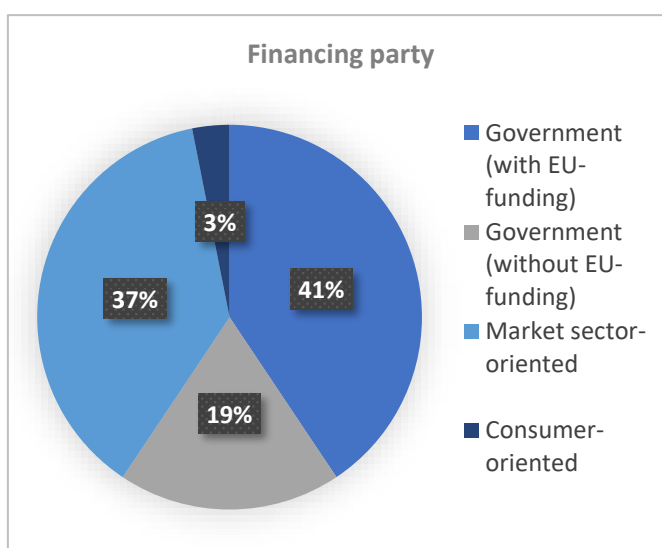


Figure 16: Financing party composition in the case studies

The CONSOLE contract solutions represented by the case studies are characterised by different types of financing parties (Figure 16): In 60% of the cases, contract solutions are funded or co-funded by public/governmental bodies. Hereby, contract solutions based on governmental schemes include all instruments that are financed by the government, i.e. with public money (for example AES, land incentives, and tax incentives). In the figure, governmental schemes are further divided into schemes with and without EU-funding. In schemes with EU-funding, EU-funding is involved to a

certain amount, meaning that all or part of the funding originates from the EU. 41% of the CONSOLE case studies are EU co-funded schemes, where the financing party is the national or regional government supported by EU-funding. Public money without EU funds is the source of funding in 19% of the contract solutions. Private funds account for 40% of the contract solutions, with market sector-oriented schemes representing 37% and consumer-oriented schemes representing 3% of the cases<sup>8</sup>. Market sector-oriented schemes include all instruments in which private actors like companies, civil society organizations, and banks incentivize farmers/foresters

<sup>7</sup> 59 case studies were considered, DE4 was excluded from this analysis as no information about financing party is provided. In some cases, contract solutions were counted twice because they involve public-private and private-private contracts.

<sup>8</sup> The figures shown are based on the information provided by the partners. In a narrower sense of the definition, more case studies would presumably be assigned to the consumer-oriented schemes (instead of the market-oriented).

to provide AECPGs. Consumer-oriented schemes are mainly marketing approaches that persuade the consumer to pay a higher price for an added-value product.

In summary, there is a 60% to 40% ratio between public and private funding parties. Considering the financing parties in relation to the types of contracts, the collective as well as the value chain contracts reveal a discernible trend. Almost all value-chain contract solutions are market sector-oriented schemes, which means that the funding for the contract solutions originates from the private sector (12 of 15), in some cases public funding is supporting the project management. The majority of collective contract solutions, by contrast, are funded by the government with EU funding (17 of 22). Three collective cases are financed by the local government and only two by the market. In the other two types of contracts, the financing parties are more equally represented. 9 of the 21 RB/RO cases are funded by the government with EU-funding and 6 of the 21 without EU-funding. The market serves as a financing party for further 8 RB/RO cases. Furthermore, all three financing parties appear equally often in land tenure contract solutions. The consumer-oriented scheme should be considered together with the market sector-oriented schemes because of improper delimitation.

### Classification of the case studies with EU-funding:

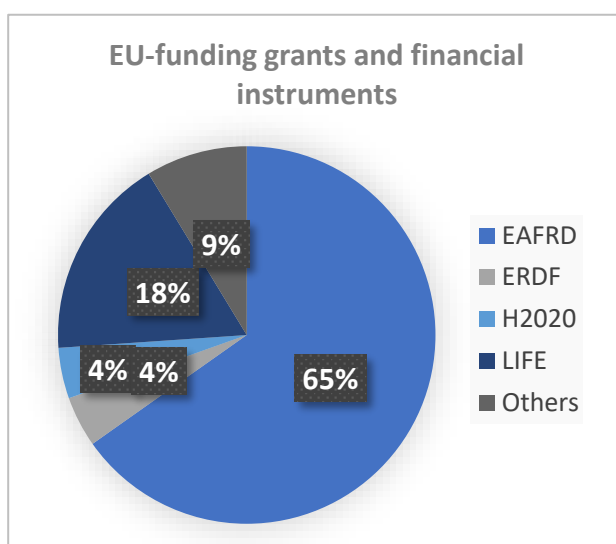


Figure 17: EU-funding grants and financial instruments

Figure 17 shows that 65% of the EU-funded contract solutions represented by the CONSOLE EU case studies are part of the EU countries' rural development programmes (RDPs) and these are funded through the European agricultural fund for rural development (EAFRD), most of them under the current funding rules. In 4 case studies (18%) the LIFE programme is involved. Two cases are a LIFE follow up projects (LV2; IRL1). The case study LV1 is funded with 75% by the Central Baltic Sea Region programme 2014-2020, belonging to the European Territorial Cooperation framework (ETC) (also known as Interreg) and being granted under the European Regional

Development Fund (ERDF). The German case study DE4 is part of the H2020 project UNISECO. Furthermore, the RBPAS (IRL2) is an EC DG ENVI call for tender 2014 pilot project and the IRL3 project is funded by a European Innovation Partnership (EIP) Agri-Environment Scheme.

The CONSOLE contract solutions represented by the case studies are characterised by different payment mechanisms aimed at compensating the costs of changing management and stimulating the voluntary supply and finally the acceptance of the contract solutions. Figure 18 to Figure 21 show the different payment mechanisms implemented by the different contract types. The figures reveal that in RB/RO and CO/COOP contract solutions incentive payments are the most commonly used mechanism. In contrast, in value-chain based contract solutions, payments are usually operationalised via the product price. In contract solutions based on land tenure, a broader variety of payment mechanisms are implemented, for example, investments, rent, public procurement/tenders, or even no payments but access to land is granted. Considering all case studies jointly, incentive payments are the most common (28), followed by product price (19).

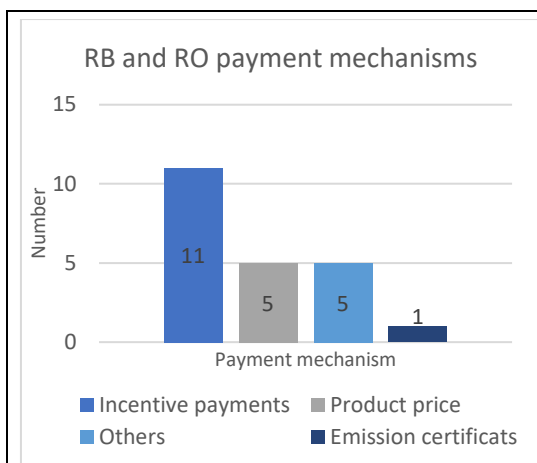


Figure 18: RB and RO payment mechanisms

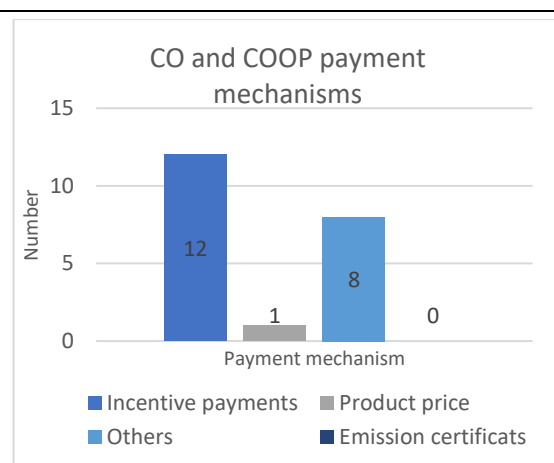


Figure 19: CO and COOP payment mechanisms

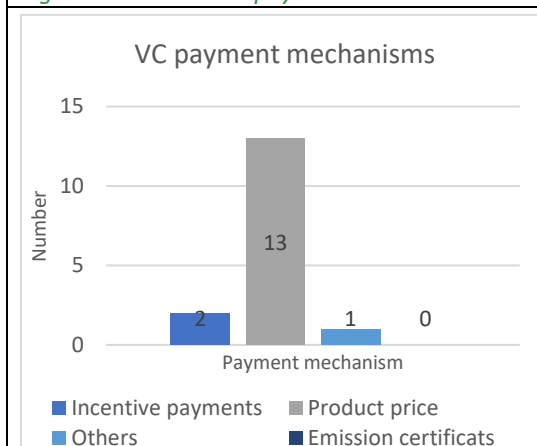


Figure 20: VC payment mechanisms

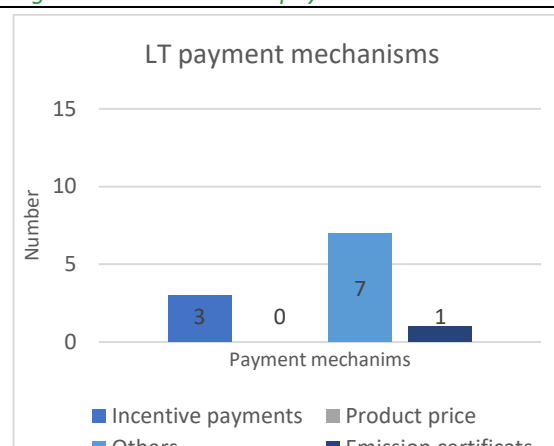
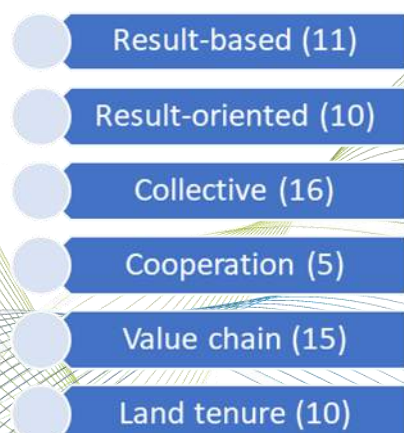


Figure 21: LT payment mechanisms

### 3.2 Contract specifications and reasons for success and failure

In order to analyse and describe contract specifications and reasons for success and failure of the CONSOLE EU case studies, a qualitative content analysis was carried out according to a previously defined coding system that was further extended within the analysis.

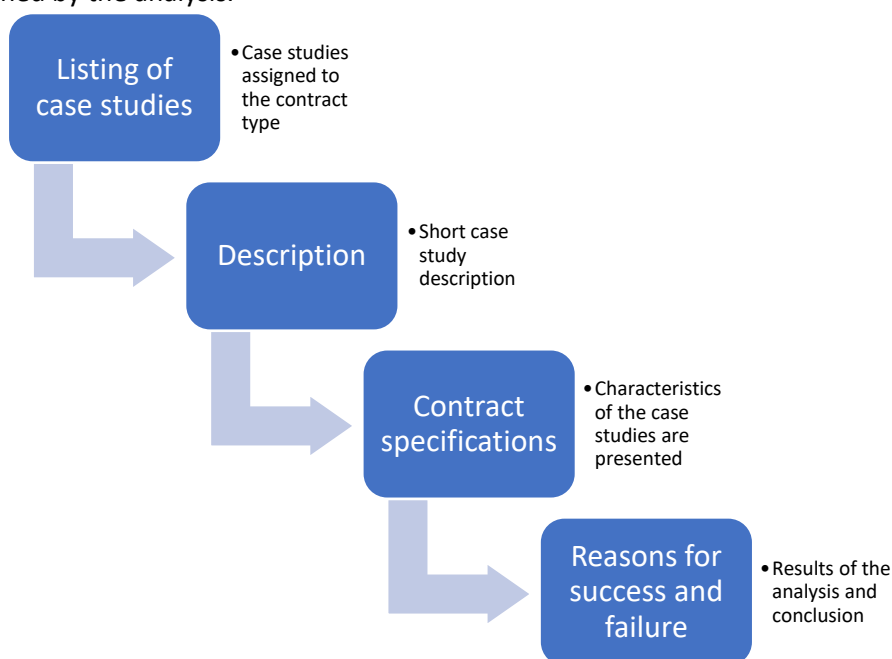


The analysis was carried out contract-type wise, and considers 11 result-based, 10 result-oriented, 16 collective, 5 cooperation, 15 value-chain based and 10 land-tenure based contract solutions. Since the contract solutions often consist of combinations of contract types (see Figure 5), in parts contract solutions are analysed repeatedly for the different groups of contract types they belong to. That means it can occur that a hybrid case study is analysed e.g. in the result-based part and again in the collective part, in order to assess all relevant information. In this case, the repetition is indicated in the overview table of the analysis.

The flow chart of the qualitative, contract type-wise analysis of contract specifications and reasons for success and failure analysis is presented in Figure 22:



- First, a table gives an overview of the case studies assigned to the contract type.
- Second, a general description of the contract type is presented followed by a short descriptive presentation of the individual contract solution. These descriptions were inserted to better understand the contract specifications and reasons for success.
- Third, the contract specifications are described.
- Fourth, a list of the reasons for success and failure is presented, which has been determined by the analysis.



*Figure 22: Presentation of the results of the qualitative analysis of contract specifications and reasons for success and failure*

### 3.2.1 Result-based and result-oriented contract solutions

#### 3.2.1.1 Contract description and specifications

Result-based contract solutions are based on contracts specifying a result rather than prescribing the implementation of management measures (e.g. the delivery of a specific AECPG is subject of the contracts). A distinction is made between result-based and result-oriented contract solutions. In true result-based contract solutions, achieved results serve as a reference parameter for payment, which means. Farmers or management bodies are paid according to the achievement of certain precisely defined ecosystem/environmental objectives. In result-oriented contract solutions, it is sufficient to have a result-orientation specified in the contract, but the land manager is not (financially) penalised if there is no visible improvement of an environmental objective (during contract term). Thus, the ecological results aren't necessarily the basis for the payment. Nonetheless, the lines between RO and RB are blurred and a clear demarcation is difficult.

In total, 21 of the CONSOLE EU case studies are classified as result-based/result-oriented contract solutions. Hereby, 11 cases are assigned to the group of result-based (RB), and 7 to the group of result-oriented (RO) contract solutions.

Moreover, the case studies BE4 and BE1 are assigned to the contract types CO and RO, the case study FI3 is assigned to the contract types CO, VC and RO, having result-orientation solely as an element among other (more dominant) contract features. Furthermore, there is also a result-based component in the FR5 scheme.

6 of the RB/RO contract solution case studies did undergo an in-depth assessment (indicated in column five of the overview tables 3; 5; 7; 9). The results of the second-level analysis are reported in the Deliverable 2.3 “Report on European in-depth case studies”.

Ctry	ID	Contract	Title	In-depth
AT	AT3	RB	Result-based Nature Conservation Plan (RNP)	Yes
AT	AT4	RB	The Humus Program of the Ökoregion Kaindorf	Yes
BE	BE3	RB-CO	Wildlife Estates Label in Flanders	Yes
DE	DE2	RB-VC	Organic farming for species diversity	
FR	FR2	RB-VC	Terres de Sources - Public food order in Brittany, France	
FR	FR4	RB-VC	ECO-METHANE – Rewarding dairy farmers for low GHG emissions in France	Yes
IRL	IRL1	RB-CO	BurrenLife Project	Yes
IRL	IRL2	RB	RBAPS - The Result-based Agri-Environment Payment Scheme (RBAPS) Pilot in Ireland	
IRL	IRL3	RB-CO	BRIDE - Biodiversity Regeneration in a Dairying Environment	
NL	NL3	RB-VC-LT	Biodiversity monitor for DAIRY farming	Yes
NL	NL4	RB-VC-LT	Biodiversity monitor for ARABLE farming	
FR	FR5	CO-RB	HAMSTER – Collective AECM to restore habitats of the European Hamster in Alsace (France)	
AT	AT2	RO	Biodiversity monitoring with farmers	
DE	DE1	RO-COOP	Viticulture on steep slopes creates diversity in the Moselle valley	
DE	DE4	RO-COOP	Agro-ecological transition pathways in arable farming	
FI	FI2	RO-LT-CO	Protected areas of private forests as tourism destination	
FI	FI6	RO	Nature value bargaining (Luonnonarvokauppa)	
IT	IT5	RO	Farmers as Custodian of a Territory	
LV	LV3	RO	Bauska Nature Park tidy up of territory	
FI	FI3	VC-CO-RO	Carbon Market – a marketplace for the restoration of ditched peatlands	Yes
BE	BE4	CO-RO	Flemish nature management plan	
BE	BE1	CO-RO	Participation of private landowners to the ecological restoration of the Pond area Midden-Limburg through a close participation of private and public landowners and a triple E-approach in the 3watEr project.	Yes

*Table 3: Overview table about case studies assigned to the contract type RB/RO, information about country, ID, contract, title and whether the case study was additionally analysed as an in-depth study.*

*(case studies described in grey indicate cases where result-orientation is solely as an element among other (more dominant) contract features)*

In the following, the RESULT-BASED case studies are shortly described:

- AT3: In the period 2014-2020, under the Austrian Agri-Environmental-Program ÖPUL, a sub-measure ‘Result-based Nature Conservation Plan (RNP)’ has been integrated into the measure “Nature conservation”. In contrast to conventional ÖPUL measures, the RNP defines environmental objectives to be reached as basis for 2<sup>nd</sup> Pillar payments, and not detailed management prescriptions.
- AT4: In the ‘Humus program’, farmers voluntarily aim to build up humus in agricultural soils, sequester CO<sub>2</sub> and receive a fee per ton of stored CO<sub>2</sub>. Management decisions are up to the farmers. Companies finance soil carbon storage by buying CO<sub>2</sub> certificates (*carbon market mechanism*).
- BE3: The ‘Wildlife Estates’ label has been developed to acknowledge exemplary management of European territories. It targets (mostly private) landowners and managers of such territories and encourages them to join the WE initiative to acquire recognition

for their commitment to sustainable wildlife and habitat management (*labelling mechanism*).

- DE2: In the initiative ‘Organic farming for species diversity’, organic farms have the possibility to select measures fitting best to foster wild flora and fauna out of a menu. A certification scheme qualifies the farmers for selling their organic products in retail with premium price.
- FR2: In ‘Terres de Sources’, farmers located in the drinking water supply area of the city of Rennes can contract for the supply of public canteens. Only farmers committing themselves to improve their farm environmental practices using the IDEA method based on scoring system with 42 indicators can subscribe to this public contract.<sup>9</sup>
- FR4: In the ‘ECO-METHANE’ program, farmers commit to provide a monthly analysis of the fatty acid profile of their milk and to feed their cattle with rich-omega 3 feed intake (mainly through grass feed). Methane emissions of livestock are derived from milk analysis. Farmers are paid for GHG emissions saved, based on a regional reference.
- IRL1: The ‘BurrenLife programme’ works with farmers in the Burren area to achieve specific environmental outcomes, rewarded by payments, and also makes funds available for farmers to invest in self-selected, but pre-approved, conservation projects. Environmental targets are set and monitored by farm advisors, performance is scored and payments are provided based on the scoring system.
- IRL2: To test how result-based agri-environment schemes could promote biodiversity and work in differing landscapes, the EU Commission provided 70% funding for a ‘Result-based Agri-Environment Payment Scheme’ (RBAPS) pilot. Two regions were selected in Ireland. Ecologists worked with 35 participating farmers to improve the biodiversity status of their farms. Farmers were paid on a per hectare basis conditional on a score achieved on a 1 to 10 scale.
- IRL3: ‘BRIDE’ is a result-based biodiversity project based in low-land intensively managed farmland. Farmers agree to a biodiversity management plan for their farm, where they agree to carry out up to 10 biodiversity measures. Payment is linked to their performance on these agreed measures.
- NL3: The ‘Biodiversity Monitor for dairy farming’ is a result-based methodology to measure and reward the performance for biodiversity (including soil, landscape, environment and climate) on dairy farms in the Netherlands. The scores per farm on biodiversity-stimulating key performance indicators (KPIs) can be used as the basis for new revenue models. In this way, ecosystem-based dairy farming can be stimulated.
- NL4: The ‘Biodiversity Monitor for arable farming’ is a result-based methodology to measure and reward the performance for biodiversity (including soil, landscape, environment and climate) on arable farms in the Netherlands. The scores per farm on biodiversity-stimulating key performance indicators (KPIs) can be used as the basis for rewarding efforts at farm level. In this way, ecosystem-based arable farming can be stimulated.

The short descriptions of the result-based contract solutions show that many of the case studies target biodiversity, but also climate action and overall sustainability efforts are covered by result-based contracts. To measure the increases in the AECPGs, indicators are needed and different approaches are developed to meet this challenge. Direct measurement, hybrid approaches, scoring systems, and key performance indicators are used to design suitable contract solutions and to reconcile a variety of factors (farmers, implementation, biodiversity). BE3 can be described as an outlier among the result-based contract solutions, as it represents a labelling rather than a payment mechanism.

Short descriptions of the RESULT-ORIENTED case studies:

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<sup>9</sup> In this case, the difference between practice-based and result-based is questionable since the IDEA method is mainly based on farmland use and agricultural performance indicators.



- AT2: In the program 'Biodiversity monitoring with farmers', around 700 farms throughout Austria monitor rare plants and animals on their meadows and pastures in order to better understand the link between abundance of species and different farming practices.
- DE1: Measures 'promoting species diversity in viticulture on steep and extremely steep slopes' have been developed in collaboration with winegrowers. At the same time these measures contribute to the preservation of the traditional cultural landscape along the river Moselle.
- DE4: Suitable strategies and incentive mechanisms for agro-ecological transitions are co-constructed with a local Multi-Actor Platform (MAP), putting a particular focus on result-oriented approaches. Participatory decision support tools are applied to assess the current environmental, economic and social situation of arable farms in Lower Saxony. The outcome is used to identify potentials for agro-ecological improvements.
- FI2: In the case of 'Protected areas of private forests' in Kuusamo, visually attractive protected areas are uncovered from private forests. Local nature-based tourism enterprises are offered a possibility to use these spots, nature trails leading to them and potentially existing facilities with their customers. Enterprises make an agreement with the forest owner to compensate the use.
- FI6: 'Nature value bargaining' was a voluntary and temporary (10-20 years) biodiversity protection instrument in which forest owners got payment for maintaining and/or increasing biodiversity in a certain forest area within their forest holding. The solution was tested in a pilot project phase (2002-2007) when the different protection instruments for METSO program (biodiversity protection programme for Southern Finland) were developed.
- IT5: The contract solution 'Farmers as Custodian of a Territory' is designed to compensate farmers for monitoring and for interventions to control flood risks and to improve the management of river basins. The contract represents a case of outsourcing environmental and public goods services to the farmer. In other words, the public agency pays the farmers for the monitoring and maintenance of the river basin, the prevention from flood risks and the provision of other environmental goods.
- LV3: The 'Bauska nature park' is a good practice example for the motivation of environmentally friendly activities supported by the local authority. The local authority pays for tidy-up activities in the Bauska Nature park.
- FI3: Carbon Market (Hiilipörssi) is an online donation service designed to reduce carbon emissions and increase carbon storage by restoring ditched peatlands. It is targeted to consumers and companies who want to decrease their carbon footprint. The landowner offers the ditched peatland for restoration to its natural state as carbon stock. Investments, actually donations, from private persons and enterprises provide capital that enables restoring actions. The landowner commits to leave the peatland untouched and transform it into private protection area before restoration starts.

In contrast to the result-based contracts, in the CONSOLE result-oriented contract solutions the payments are not solely oriented towards the provision of a public good. Results, which are used as a basis for payments, can be the number of visitors (e.g. the tourism company pays 5 Euro per visitor) (FI2), compensation for monitoring (AT2; IT5), for executed tasks (IT5; DE1), and for tidy-up activities (LV3).

#### **Implementation mechanisms:**

Result-based and result-oriented contract solutions are still relatively new forms of contracts, which are until now rarely integrated into common AES formats. The CONSOLE case studies reveal that many different ways (projects, programs) are used (and tested) to implement this contractual instrument in practice.

#### Implementation of result-based contract solutions:

One way to implement result-based contract solutions is to integrate them into the national Agri-Environmental-Program. This is the case in AT3, where the “Result-based Nature Conservation Plan (RNP)” has been integrated into the AES measure “Nature conservation”. Among the CONSOLE case studies, the RNP is the only result-based contract solution that is fully implemented via integration into the national Agri-Environmental-Program. Some result-based contract solutions were initiated through pilot projects (AT3, DE2, IRL2). In IRL2, for example, the EU Commission provided 70% funding for the RBAPS Pilot, to test how result-based agri-environment schemes could operate over wider areas and in differing landscapes. Also, contracts directly concluded with the local or national government are an option. This is the case in the BurrenLife Programme (IRL1), where farmers sign a contract with the Irish Department of Agriculture, Food and the Marine. The BurrenLife Programme has evolved over an almost 20-year period using various EU funding sources. In the case of ‘Terre de Sources’ (FR2), the contractual solution was implemented by the local government through a public tender. The result-based landscape biodiversity project BRIDE (IRL3) is implemented and funded by an EIP Agri-Environment Scheme. Some of the private result-based contracts were developed and started by associations. The association “Verein Ökoregion Kaindorf” developed the “Humus-Program” intending to improve the soil quality and store CO<sub>2</sub> using the carbon market. The association Bleu-Blanc-Coeur in the case FR4 is the coordinator of the Eco-Methane program. Another possibility is that the contract solution has been established by a multi-stakeholder coalition including actors of the civil society. In DE2 (which is also a pilot-project), WWF Germany, a federation of organic farming and a retailer have started the initiative together. In NL3, the Biodiversity Monitor for dairy farming has been established by WWF-Netherlands, Duurzame Zuivelketen (including FrieslandCampina – the largest dairy cooperative in NL) and Rabobank (largest agricultural financier in NL).

#### Implementation of result-oriented contract solutions:

Also result-oriented solutions can be integrated into the national Agri-Environmental-Program. This is for example the case for the program “Farmers keep an eye on plants and animals!” (AT2), being part of Austria’s program for rural development since the period 2007-13 and also in 2014-20. Implemented in the form of a project/ or part of a project are the cases DE1, DE4, and FI2. The Moselle project (DE1) is one of the three components of the project “Lebendige Agrarlandschaften - Lively agriculture landscapes” with the German farmers’ association DBV as a lead. Also, the contractual solutions represented by FI2 is implemented within a project (Kuusamo project). Yet, the project is based on the METSO-program, a biodiversity protection program for the forests of Southern Finland. The contractual solution “Nature value bargaining” (FI6) was also tested as a METSO pilot programme 2002-2007: However, after the pilot period, the instrument was abandoned and replaced with more traditional AES due to EU-level legislative reasons. DE2 represents a case study of the H2020 research project UNISECO (DE4). In the initiative “Farmers as Custodian of a Territory” (IT5), an authority (mountain community) responsible to manage water risks in mountain areas, took the initiative for the contract solution. Also, in LV3 the local authority is in charge of the initiative Bauska nature Park. Likewise, the result-based Humus-program (AT4), also FI3 is implemented as a private carbon market initiative founded by the Finnish Association for Nature Conservation.

#### Farm/forestry types/systems:

Table 4 gives an overview of the farm/forestry types/systems addressed by the RB/RO contract solutions. The table shows that result-based contract solutions are implemented in a variety of different agricultural systems, as well as forestry.



ID	Contract	Title	Farm types addressed
AT3	RB	RNP	All farm types, but mostly grassland
AT4	RB	Humus Program	All farm types, but mostly arable farms
BE3	RB-CO	Wildlife Estates Label	Farm and forestry (all types)
DE2	RB-VC	Organic farming for species diversity	Organic farms (mixed)
FR2	RB-VC	Terres de Sources	All farm types
FR4	RB-VC	ECO-METHANE	Dairy cow farms
IRL1	RB-CO	BurrenLife Programme	Producers of suckler beef (herd size 30-40 cows) – grassland
IRL2	RB	RBAPS	High nature value grassland
IRL3	RB-CO	BRIDE	Farms from different sectors (dairying, beef, equine, tillage, sheep) and at different levels of intensity (ranging from intensive to extensive farming systems)
NL3	RB-VC-LT	Biodiversity monitor dairy	Dairy farming
NL4	RB-VC-LT	Biodiversity monitor arable	Arable farming
FR5	CO-RB	HAMSTER – Collective AECM to restore habitats of the European Hamster in Alsace (France)	Arable farming
AT2	RO	Biodiversity monitoring with farmers	Mostly grassland farms with valuable nature conservation areas
DE1	RO-COOP	Viticulture in Moselle valley	Viticulture on steep slopes
DE4	RO-COOP	Agro-ecological transition pathways	Arable farming
FI2	RO-LT-CO	Protected areas of private forests	Forests
FI6	RO	Nature value bargaining	Forests
IT5	RO	Farmers as Custodian of Territory	No specific farm type
LV3	RO	Bauska Nature Park	None / not specified
FI3	VC-CO-RO	Carbon Market Hiilipörssi	Forest
BE4	CO-RO	Flemish nature management plan	Mixed and forest
BE1	CO-RO	3watEr project.	Forest, peatland

*Table 4: Farm/forestry types/systems addressed by the contract solutions*

### **Reasons for the implementation of result-based/result-oriented contract solutions**

For the CONSOLE case study sample, several reasons have led to the introduction of result-based/result-oriented contracts:

One reason for the introduction of such “new” schemes are the attempt to overcome shortcomings of top-down action-oriented contracts: A first shortcoming might be, that action-oriented contracts often miss to explain protection objectives to the land managers and therefore are incapable to initiate a sustainable “change of mind” and informed awareness-building process which is necessary to sustainably guarantee long-term provision of AECPGs. This is notably reflected in the case of AT3: In Austria, “classical” contractual nature conservation is predominantly designed to be action-oriented. Concrete management measures are defined on valuable areas by authorities in coordination with the farmers. The farmers are however often not well informed about protection objectives and expected results, therefore no process of learning can settle. In contrast, in the AT3 RNP, the focus lies on the nature conservation objectives in the contractual areas. These objectives are developed in close cooperation with the farmers. Management measures to reach objectives are not prescribed and can be determined by the farmers themselves. Besides reaching the environmental objectives, in this way the RNP intends to increase farmers’ flexibility, supports awareness building and the building of social capital. AT2 underpins the assertions from AT3: Here, awareness building and the creation of social capital are the main objectives of the biodiversity monitoring with farmers. A second shortcoming of classical action-oriented contract solutions might be the insufficient recognition of specific regional, natural basic conditions. The BurrenLife programme (IRL1) was mainly implemented because the traditional agri-environmental schemes could not efficiently address the environmental challenges the farmers experience due to the unique Burren landscape in the



region. Also the RBAPS-pilot (IRL2) took an approach of better regional adaptation by aiming to test how result-based agri-environmental schemes could work over wider areas and in differing landscapes. The bottom-up development of transition pathways together with stakeholders in the UNISECO-project (DE4) tries to overcome generalisation by better understanding current (regional) sustainability issues and barriers for implementing agro-ecological approaches. In FI6, the development of the nature value bargaining solution was also affected by the experiences gained in the Natura 2000 process, where the top-down approach and poor informing of forest owners led to conflicts. As a whole, state authorities together with local actors were active in driving and developing new and more acceptable solutions.

The objective and the reason for the development of the “Biodiversity Monitor” (NL3 and NL4) is to make biodiversity-enhancing performance on dairy and arable farms measurable – and visible. Here, in parts social pressure is a reason for introducing result-based schemes which can be used to directly compare the ecological performance of farms, but also to increase the reputation of agriculture.

Another reason for the introduction of new schemes is the ongoing deterioration of specific (single) AECPGs, or to react to a situation where the environmental situation has already become problematic, also for agricultural/forestry production. AT4 and FR4, for example, aim to significantly reduce CO<sub>2</sub> emissions and to respond to climate change by sequestering CO<sub>2</sub> in the soils and by reducing methane emissions. The conditions that led to the BRIDE project (IRL3), as well as to the solutions represented by DE1 and DE2 were the common recognition that biodiversity, particularly on intensive farms or in vineyards, was decreasing. In the program “Farmers as Custodians of Territory”(IT5) the contracts came to life as a solution to better control flood risks and to improve the management of river basins.

The background of the implementation of the FI2 Kuusamo cooperation network is a little bit different. It evolved from the fact that there are several, unknown, attractive spots in private forests that are already protected via METSO-program, which were assumed to be beautiful places to visit for outsiders too and therefore suited for an RO scheme directly activating payments from visitors.

#### **Indicators and measurement - Mechanism in result-based contract solutions:**

The elaboration of the right indicators, as well as the measurement of results represent a remarkable challenge in the design of result-based contract solutions. In the CONSOLE case study examples, 4 different mechanisms were used to ensure feasible and reliable measurement. The measurement of objectives is done either by direct measurement (e.g. using technical tools), by scoring systems linked to environmental improvement, by the development of key performance indicators, or by hybrid approaches. The design of these individual mechanisms can however be diverse.

#### **Direct measurement:**

Measurement of the amount of CO<sub>2</sub> sequestration in the Humus program (AT4) is based on an initial soil sampling at the start of the contract (by a certified civil engineer and accredited national laboratory). During the sequestration period, farmers set their own measures to increase the humus content in their soils. After a period of three to seven years (according to the farmer’s needs), humus content is determined again by a second soil sampling. An increase in humus content is converted into additional tons of CO<sub>2</sub> stored in soil.

In the EcoMethane program (FR4), each farmer individually commits to monthly provide a milk analysis to the association Bleu-Blanc-Coeur. The milk analysis provides the composition in fatty acid that can be directly linked to methane emissions.

**Scoring/credit point system:**

In RBAPS (IRL2), a common design approach was used to quantify the assessment of ecological quality across the two regions and five measures. The assessments relied on the use of result indicators which are proxies employed to quantify the quality of the biodiversity target. Measure-specific result indicators were identified and trialled for their fairness, robustness and reliability in assessing the quality of the farmland for the measure they were most suited to provide and to indicate general environmental condition. It was extremely important that the result indicators were both linked to the biodiversity target and feasible for the farmer to deliver. The RBAPS pilot scores were designed to reflect the variation in the quality of the selected biodiversity target, which was assessed by totalling the points awarded for result indicators and translating them into a scoring scale from 0 (very low) to 10 (very high).

The nature protection certification in DE2 is based on a credit point system with a broad range of over 100 measures. Its central element is a catalogue of measures with credits allocated to each of them. Together with a specialised nature protection advisor, the participating farmers choose the measures that are the most suitable and can be best integrated into their agricultural production system. The whole farm with all its land and the surrounding landscape elements is eligible. If the farmer reaches a minimum of credit points, he/she gets a price supplement from a retailer for selected products (pork, beef, lamb, and potatoes). The farmer is compensated for his/her nature protection efforts through the higher priced premium organic product sold with a particular label.

The contractual solution FR2 aims to favour more sustainable farming systems using the IDEA method. The IDEA method assesses farm multi-performances (the overall farm performance) using 42 indicators which cover the three dimensions of sustainability (agroecology, sociology and economics). These indicators include biodiversity, autonomy and low use of inputs, natural resources preservation (soil, water and energy, economic viability, local development and circular economy, food, employment and labour quality). The results are based on the improvement of agricultural practices using 21 indicators out of the 42 provided in the IDEA method. The results are only indirectly linked to the supply of a public good (here improvement of drinking water). If no improvements are made, the contract and the supply of catering can be suspended.

**Hybrid approaches:**

The BurrenLife Programme (IRL1) is a hybrid approach whereby 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. The result-based payment is complementary. Each farmer's payment depends on the score they receive in their assessment on a per hectare basis. The scoring system, underpinned by evidence-based information, helps to create a very robust, detailed and objective system. The scoring is conducted on site by the farm advisor each year, scoring results are validated by the project team and submitted to the Department of Agriculture for payment.

The RNP (AT3) represents a dual system of 1.) environmental area objectives, on the basis of which farmers primarily orientate their farming methods and 2.) control criteria, which are used primarily as a control instrument for the technical control service and the fulfilment of which represents the basis for payment. Both are farm-individually developed by ecologists together with the farmers, and fixed in a farm-individual logbook, containing information on objectives, illustrations of species, maps of appearance, suggestions of management measures as well as a section for documentation of management measures and progress as regards the target set.

In BRIDE (IRL3) a Biodiversity Management Plan (BMP) is drawn up by the project ecologist for each farm in consultation with each farmer. The farmers have to carry out a minimum number of 3 habitat related actions such as management and/or establishment of hedgerows, field margins,



skylark plots, creation of permanent ponds, native woodlands, winter stubble, nest boxes and bat boxes, annual biodiversity plot, invasive species control, multi-species grassland, riparian buffer strip creation, tree lines etc. A farmer will receive a once-off capital payment for work carried out, e.g., fencing a hedgerow or excavating a pond, but annual payments will be made on the biodiversity quality of the habitats on the farm. All of the habitats included in the BMA will be scored and a quality mark given accordingly. An independent ecologist is also available to give a second opinion if a farmer wishes to appeal the result.

### **Key performance indicators:**

In the biodiversity monitor for dairy farming (NL3), the biodiversity-enhancing performance per dairy farm is measured with an integrated set of 7 Key Performance Indicators (KPIs): permanent grassland (%), protein from own farm/region (%), soil nitrogen surplus (kg/ha), ammonia emissions (kg/ha), greenhouse gas emissions (kg/ha and kg/kg milk), herb-rich grassland (%) and nature conservation management & landscape elements (%). These KPIs are selected based on multiple criteria, including their scientifically proven relation with biodiversity, and the fact that performance can be influenced in the short term by taking measures on the farm.

Also in the biodiversity monitor for arable farming (NL4), the biodiversity-enhancing performance per arable farm is measured with an integrated set of Key Performance Indicators (KPIs). The set of KPIs is currently (spring 2020) still under construction, but will likely include indicators on topics covering crop diversity, emissions, inputs, soil management, and nature and landscape elements on the farm. These KPIs will be selected based on multiple criteria, including their scientifically proven relation with biodiversity, connection to existing data systems (to minimize extra administration), while ensuring that performance can be influenced in the short term by implementing on farm measures.

### **Indicators and measurement - Mechanism in result-oriented contract solutions:**

The CONSOLE case studies representing result-oriented contract solutions reveal that alternatives to ecological results are used as a basis for payments. For example, results in the CONSOLE RO contract solutions are number of visitors (FI2), compensation for monitoring activities (AT2; IT5), executed tasks (IT5; DE1, LV3).

### **Compensation for monitoring activities**

The AT2 case study represents a contract solution where the farmers get paid for carrying out monitoring activities. If farmers want to participate, they must get in contact with the project team and register. An ecologist visits the farm and demonstrates which special and valuable species can be found on the meadows. The selected indicator species are observed and monitored annually. Monitoring observations and management measures are reported on an online reporting portal. Farmers are paid a compensation for their monitoring activities.

### **Compensation for executed tasks**

In the DE1 case study in Mosel valley, the winegrowers get financial compensation for the proper implementation of the measures agreed (e.g. interrow and boarder greening, establishment of floristical hotspots, etc.), as well as for the monitoring.

In the 'farmers as custodians of a territory' initiative (IT5), the contract is an agreement between the Union of Municipalities of Serchio Valley and 27 farmers selected based on two criteria: proximity to the water bodies and the capability to undertake necessary actions. Formally, there is a public call asking for farmers' willingness to be involved in the project. The agreement includes a description of actions to be taken in their managed area as well as the right of first refusal for further activities when needed. The deal includes a fixed amount for monitoring activities and a variable amount based on agreed actions and for new actions (based on the right of first refusal or fiduciary piecework). *The payment rewards the number of actions. Each action is paid based on the expected cost.*



In 'Bauska Nature Park' (LV3), the landowners can apply for a reduction of the real estate tax in exchange for tidy up the bordering territories, to improve sidewalks, construction or reconstruction of streets, children's and sports grounds, water parks, sewerage systems etc.

### **Number of visitors**

In the initiative 'Protected areas of private forests' (FI2), forest owners and nature-based tourism enterprises make an agreement about the use of the spot, nature trail and the services included (e.g. fireplaces, parking places). The enterprise pays the forest owner according to the agreement. In the example agreement, the compensation is based on the number of persons who visit the spot (e.g. 5 euros per person). However, the parties of the agreement can freely decide the compensation level and the basis for payment (lump sum, per person).

### **Others**

In the nature value bargaining contract solution (FI6), the forest areas that were contracted needed to meet certain characteristics. The offered areas were inventoried by forest/biology professionals. First, the forest area in question was required to represent certain important habitat types (groves, forests with considerable amounts of dead wood component, forests located near small water bodies, certain peatland habitats, traditional biotopes (altogether 11)). In addition, the forests presenting these habitats needed to contain certain structural characteristics that were important and predefined too. Finally, the price demand from the owner needed to match with the willingness to pay from authority. In Nature Value Bargaining, the subsidy was partly based on the existing and potential (future) biodiversity values of the forest area offered for protection.

### **Controls and monitoring of compliance in result-based and result-oriented contract solutions - some examples**

Besides the development of indicators and the development of systems for measurement, of course the correctness of the measurement itself, and the controls for compliance are crucial for successful implementation and fair payment in result-based/result-oriented schemes. Particularly the in-depth studies showed, that often well-trained staff is needed to carry out the controls and monitoring of compliance and the measurement of results. Following are some examples from the CONSOLE case study sample on how this task is carried out.

- DE2: The participating farms are controlled annually if they have successfully implemented the chosen measures on their farm. Currently the nature protection advisors are controlling whether the necessary credit points are obtained and certify the organic farms. In the future, it is foreseen to have the mandatory controls for organic farming back-to-back with the nature protection certification.
- FR2: An initial and a final diagnosis are done by one of the three following organisations (Chamber of agriculture, Agro bio or Adage) to give a farm score using the IDEA method. Once a year, the Collectivité Eau du Bassin Rennais (EBR) checks the planned improvements made by each farm, pending the implementation of the labelling process.
- In the humus program (AT4), results of soil carbon sequestration are measured and controlled by soil sampling. Each field registered for the program is subject to minimum 1 soil sampling at the beginning of the sequestration phase, which is carried out by a certified civil engineer. Soil samples are analysed for soil organic carbon content, total nitrogen, pH<sub>CaCl2</sub>, CAL-extractable phosphorus and potassium by the Department for Soil Health and Plant Nutrition, Austrian Agency for Health and Food Safety (AGES). In addition, samples are analysed according to the method of Albrecht/Kinsey for exchangeable cations, total sulphur, available and total phosphorus as well as a range of trace elements. The first soil sampling determines baseline humus levels (25 GPS-located samples per field, mixed and analysed as a compound sample). A second sampling (success sampling) is conducted within three to seven years after the initial sampling in the same manner to quantify changes in humus content. From the increase in humus, the total amount of CO<sub>2</sub> sequestered is calculated. The farmer can then claim a success fee of 30 € per ton of CO<sub>2</sub> sequestered (i.e. two-thirds of the certificate price, for legal reasons

the absolute price per ton is not guaranteed). After receiving the fee, the humus farmer has to guarantee the level of build-up humus for five years. This is controlled by a third sampling (control sampling). In case an increase in humus above levels from the success sampling is measured, farmers can claim further success fees and the program is prolonged for another five years. Decreases in humus content can lead to partial or complete refunding of the success fee. All soil samples are paid by the farmers. The example of the RNP (AT3) reveals the importance of co-developing measurable indicators together with the controlling units. In RNP the institution being involved right from the beginning was the national control authority (AgrarMarktAustria; AMA), which particularly provided inputs for the design of measurable and, consequently, controllable indicators. AMA was fundamentally involved in designing the mixed approach of area and control indicators, which finally enabled the integration of the RNP into the RDP. The involvement of the national control authority from the beginning is perceived as the main success factor of the RNP, in case of a transfer of such schemes to other countries, this integration would be recommended by the experts.

#### **Payment setting for result-based and result-oriented contracts:**

In IRL2 the payment structure aimed to achieve a balance between incentivising farmers to deliver the highest possible score in their particular farm setting, while giving a clear signal that the delivery of higher quality also results in a higher reward. Payment rates for the low-medium quality scores were set at a level sufficient to cover costs of farmers' participation in the scheme while payment increments were created to incentivise further progression towards the delivery of higher quality outputs. Tiered payment levels provide a financial incentive to the farmer to deliver the highest quality environmental product in their particular farm setting. The results showed that tiered payment structures linking the quality to the payment rate can incentivise change in farmer attitudes and management and bring about benefits for biodiversity targets.

For FI6 the level of payment was defined in negotiation processes between authorities and farmers, and it depended on the biodiversity values of the stand, opportunity costs as well as farmer's negotiation skills.

In NL3 a good performance on the integrated set of KPIs can be linked with financial rewards from multiple stakeholders. The Biodiversity Monitor provides the scientifically substantiated methodology to measure biodiversity-enhancing performance per farm, while contracting parties decide about how they reward the farmer. The best performing dairy farmers who comply with the certification standards of 'On the way to Planet Proof dairy' (which includes the KPIs), receive a higher milk price. The bank involved (Rabobank) is piloting with green financing funding to reward well-performing farmers with a loan interest discount. Drenthe administration runs a program which grants financial rewards to good performing local farmers.

#### **3.2.1.2 Reasons for success and failure**

Through the joint analysis of the result-based and result-oriented agreements, 11 reasons for success and 3 reasons for failure were identified. Something is considered a reason for success if there is an indication of a benefitting influence in the contract solutions and if this influence is found in more than one contract solution.

#### **Reason for success #1: High level of available knowledge support (e.g. specialized nature protection advisors...) and training for the farmers**

RB/RO contracts require more knowledge from farmers and for this reason, successful implementation is often linked to special training or advice. Nature conservation advisors are particularly often involved to bring environmental aspects closer to farmers and help them to improve the environmental situation on the field. Nature protection advisors or ecologists are for example playing a decisive role in the cases DE2, DE1, AT3, IRL3, and AT2. All five cases have stated the cooperation of advisors and farmers being indispensable for the success of the contract



solution. In general, the nature protection advisor assesses the farm and identifies which valuable species are present. Existing nature deficits are discussed and solutions are elaborated together with the farmers. The advisor agrees with the farmer which measures are suitable on which fields or neighbouring areas (DE2, AT3). In AT2, ecologists teach the farmers in the initial phase of participation, how to monitor biodiversity in grassland. They show the farmers rare plants and animal species on their farmland that are worth protecting. They train the farmers to observe, count, and document according to a certain monitoring design. In IRL1, farmers who apply to the scheme, have to attend an initial induction meeting and then elaborate a farm plan for environmental improvements with their designated farm advisor. In FI6 the forest owners could ask for advice e.g. from the Forest Management Associations. The association helps forest owners in their forest management decision-making and operations. In IRL2 also training plays an important role: “annual training was offered by the project team to participating farmers over the two years of farmer contracts. A half-day classroom setting was used to present the scheme concept, its comparison with more familiar management-based schemes and the RBAPS Pilot scheme aims. The classroom session was followed by a half-day of field-training for each measure which focused on the use and understanding of the applicable scoring assessment, the rationale for the results indicators and discussion on optimal management to achieve the best possible outcome (and payment). Most farmers participated willingly at the farmer training events, with some requesting additional training as they found it both helpful and enjoyable”. Support is also crucial in case studies that do not focus on biodiversity. In AT4, for example, the Humus-Program provides practical principles for humus accumulation in soil and suggests best-practices including use of cover crops, no-till practices, intercropping and compost application. In NL4 the complexity of the method is mentioned as a threat, to address this threat information exchange and practical education is mentioned as being essential to make the contract work.

#### **Reason for success #2: Flexibility in timing, the choice of practices and measures**

In result-based and result-oriented contract solutions, often a higher degree of flexibility is emphasised. Mostly, flexibility in connection with result-based/result-oriented schemes means that there is freedom of the timing of certain measures being carried out, and also of which measures are being carried out. The freedom of choice remains with the farmers. DE1 for example is action-based in a certain sense, but freedom is given about timing and the exact practices to be applied in view of establishing and maintaining native plants. Also AT3 reports more flexibility in choosing and implementing management activities. Farmers see and record the results of their management in the fields and can decide which management activities they choose. In IRL1, where farmers sign a five-year plan, flexibility in implementing nature conservation measures is given. AT4 does not contain any prescribed and obligatory management measures. Farmers can freely and flexibly decide on management measures to increase humus content. In DE2, flexibility is given due to the free choice out of a catalogue of measures. Farmer can choose from more than 100 nature protection measures for arable land, grassland and landscape elements. A credit point system provides information about the effectiveness of each measure in protecting or promoting species and habitats. This freedom in deciding how, what and when to take action leads to an increase of “ownership” by the farmers and can result in a higher degree of innovation and satisfaction.

#### **Reason for success #3: Farmers’ knowledge (knowledge exchange)**

Considering farmers' knowledge and priorities can have a positive influence on the design of the measure itself (DE3). In addition, farmers' level of knowledge can be considered and advice can be tailored to this. Some case studies also report the positive effect of sharing knowledge between the advisor and the farmer, allowing both to increase their knowledge and creating a relationship of equals (IT6). The knowledge gain thanks to long-term collaborations between the advisor and the farmer is also highlighted in DE2. Farmers’ knowledge of environmental issues can also play a role in selecting farmers for the program. In AT3, ecological knowledge was an important factor



in the selection of the farms so that they were not overstrained with the RNP measure at the beginning. Also, by choosing the measures that are the most suitable and can be best integrated into their agricultural production, the farmers' point of view and knowledge is considered (DE2). On the contrary, experts in AT3 stated, that in a broader approach, where not all of the potentially participating farmers are interested in biodiversity and ecology, farmers may fear that they will not be able to achieve their goals due to a lack of knowledge, consequently limiting the potential size of a contract solution.

#### **Reason for success #4: Co-development/co-design**

The farmers' point of view should be taken into account already in the process of developing the program. In IRL1, co-creation was named as an important success factor: "Although the program was born from a Ph.D. project, it respected farmer's ideas and their role in finding solutions". In IRL2, farmers' attitudes, understanding, and criticisms of the approach were explored through a series of systematic questionnaires and interviews, providing valuable insight into how result-based approaches could appeal to the wider farming community, thus informing the better design of future programs. Also, in DE1 measures promoting species diversity in viticulture on steep and extremely steep slopes have been developed in collaboration with the winegrowers. In IRL3, where a team of local farmers initiated the project, they have recognised that a result-based scheme that gives autonomy and flexibility to the farmer would be more effective.

#### **Reason for success #5: Individualisation**

A farmer-centered approach with individual objectives, individual adjustments of measures, and consideration of the local situation increases acceptance and is one reason for success. In case of some of the result-based/result-oriented contract solutions presented by the CONSOLE EU case studies, individualisation goes rather far and reaches even beyond the freedom of choice of management measures: In the RNP in AT3, environmental objectives are defined plot-individually by ecologists together with the farmers, whereby even farmers' attitude towards species worth of protection is taken into account. The interviewed experts stated that setting objectives which are definitely not supported by the farmers (e.g. the protection of poisonous snakes) are counterproductive. Also in IRL3 where the local environmental situation is challenging due to the unique landscape, on each farm a individual farm plan is developed for environmental improvements with the designated farm advisor. This makes it possible to respond well to the local situation and find appropriate solutions. For the case of the individualisation of management measures on the farms, in the case of DE1 it is concluded that: "Individual adjustment of the measures allows aligning the nature protection aspects with the production needs".

#### **Reason for success #6: Building of social and cultural capital (community, innovation, rewards)**

'Learning by doing' was another factor of success in result-based/result-oriented contract solutions. According to the experts' statements in the BurrenLife programme case study (IRL1): "the project demonstrated in real-time what 'conservation farming' looked like and proved that it can improve agricultural efficiency and performance (e.g. reducing input costs and/or increasing stocking levels). This was a lesson that surprised some farmers and engaged many more". Learning by observing was also reported in DE1, where some winegrowers take advantage of the monitoring activities to get emblematic species better known in and near their vineyards. In AT3, the educational aspect for the farmers is very high and this can lead to a long-term behavioural change. Furthermore, the farmers see and record the results of their management in the fields and can decide which management activities they choose. The farmers better understand the connection between their acting and the influence on nature. In IRL3 and AT4 the building of cultural capital was highlighted. In the IRL3 case study it was stated that "the project has shown that the introduction of biodiversity measures makes sense and contributes to tangible

environmental, economic and social benefits. The specific local nature of the project has united the local community and generated goodwill and pride in the area. It is also widely recognised outside the region as an innovative approach". AT4 has specifically implied social components (awards, network, training), and farmers who build up humus get a cheque handed over at a public event with many other farmers. This public recognition encourages other farmers to participate as well, while the humus farmer is motivated to continue. Furthermore, a network among the farmers, a so-called 'Humus community' is promoted in the form of a regulars' table, where farmers exchange information and support each other.

#### **Reason for success #7: The right people (from the region)**

In some of the result-based/result-oriented CONSOLE EU contract solutions, individual persons or a group of people play a decisive role in the success of the contract solution through their commitment – and their origin. The right people can significantly influence the success of the contract measures, especially when introducing new contract solutions. In IRL1, a team of four locally-based staff was appointed to run the project, some with extensive research experience in the Burren, which allowed the team, and the project, to get off on the right foot, with a good level of trust and credibility. In AT2, regional project representatives are involved: "All over Austria farmers particularly committed to biodiversity monitoring are available to answer questions by other participants and introduce and advertise for the project in their region. The representatives organize guided tours on their own meadows or on other farms and they organize lessons in schools in their federal state". The importance of strong regional actors is also confirmed in IRL3: "The project has strong farmer leadership that is local and has arisen out of the intensive dairy sector. This gives the project credibility to both intensive and less intensive farmers."

#### **Reason for success #8: Targeting**

Two factors have to be kept in mind when setting targets in RO/RB measures. First, the objective must be clearly aimed at improving or maintaining a public good. Second, the target must be achievable for the farmer. In the RBAPS case study (IRL2) it was stated that "It was extremely important that the results indicators were both linked to the biodiversity target and feasible for the farmer to deliver". In the RNP (AT3) targeting is ensured through the cooperation between the farmer and the ecologist, who commonly define clear protection objectives for the individual fields which are understandable for farmers, advisors, and the control authority. The payment is targeted only at such environmental objectives which involve a clear causal link with the farmer's management action, and which are the basis for the control criteria. The control criteria also work like an early warning system, giving the farmers a clear signal if the measures work or not. So, the farmer knows if he/she is on the right path regarding achieving the environmental objectives or whether management adjustments need to be made. In NL3, the key performance indicators are selected based on multiple criteria, including their scientifically proven relation with biodiversity and that performance can be influenced in the short term by taking measures on the farm.

#### **Reason for success #9: Keep farmers' participation simple and administrative burden low**

Result-based contract solutions are new and unfamiliar to farmers, therefore they require more explanation, and can be quite complex to implement. Nevertheless, an effort should be made to keep it as simple as possible for the involved parties. For the BurrenLife programme (IRL1) experts stated that: "Although it [the programme] addresses a complex issue, a key success factor was the ability to keep farmer participation simple and non-onerous. This is reflected, for example, in the simplicity of the farm plans and clarity of the payments (per score and task) and is enabled by the high level of available support for the farmer from the local program office and the trained farm advisors". In NL4 it is stated as a strength, that there is a minimal extra administrative burden as most data comes from mandatory farm management data tools. FR4 also emphasized simplicity as an advantage: "Attractive and simple program: few requirements and



no penalties”, as well as IRL3 “The project is locally based on a simple model that is understandable and has achieved strong engagement from the farmers.” On the contrary, in case of Bauska nature park (LV3), it was noted that “Practically local landowners are hampered to take advantage of this opportunity as they need to prepare a large number of documents before starting work”.

#### **Reason for success #10: Scientifically based and assessed**

In IRL1 and IRL2 the inclusion of science is clearly defined as strength. In NL4 researchers are strongly involved in the pilot phase and also in developing and test the key performance indicators. Also, in NL3 the biodiversity monitor was devised in close collaboration with researchers from Wageningen University & Research and the Louis Bolk Institute. Furthermore, in FI6 the active role of research was mentioned as a strength. Eight of the 21 case studies have indicated that a scientific partner was involved in the design of the contract solution.

#### **Reason for success and/or failure: Risk management**

The link between payment and result can be perceived by farmers as a risk increasing factor. Consequently, risk management in result-based contract solutions is of exceptional importance. A lack of risk management can lead to a lower participation rate as well as to non-payment for farmers due to the failure to achieve the objectives. This, in turn, leads to dissatisfaction and a decline in acceptance. In AT4 it is mentioned as the main risk, that the farmers do not build up humus and therefore don't receive the success fee, even if they might have made investments and changes in management. In FR4 one reason for success is the limited risk, because there is no penalty in case of non-compliance and the payments are quite low as well and do not represent a necessary revenue for farmers. In the scoring approaches, there is the risk that farmers do not reach the minimum credit/scoring points: For example, in DE2, a minimum of credit points has to be obtained yearly through measure implementation to be able to benefit from the premium price for the selected products. In IRL1, the farmers run the risk of not scoring highly enough to qualify for payments. AT3 has countered the challenge of risk minimisation with a dual system of risk distribution, based on two kinds of result indicators, namely area objectives and control criteria. The experts state that this system reduces the risk perception of the partaking farmers as “There is a risk that the control criteria will not be met, but the risk is reduced by the non-sanctioned area objectives”. Risk reduction results from the fact that area objectives, being the basis for management decisions, are more complex to reach than the control criteria, focussing on controlling the measures taken to reach area objectives.

#### **Reason for failure #1: High administration and implementation costs, low feasibility of large-scale implementation**

In some case studies, high costs for the implementation and administration of result-based contracts are reported. As regards the introduction of the RNP in Austria (AT3) for example, the experts reported that: “The implementation required a great deal of administrative effort and high costs for administration, but this is also due to the fact that it is a pilot project and the costs will decrease significantly as the project progresses”. Moreover, in result-based/result-oriented solutions often nature conservation advisors are involved and a high level of support is given. On the one hand this is a reason for success but on the other hand the high level of support can be expensive. Actually, the high costs of some result-based/result-oriented contract solutions might be a reason for a limited feasibility of larger scale implementation. In the case of DE2 for example, nature protection advice at individual farm level is necessary, moreover there are costs of annual nature protection certification. It was stated that these higher costs could limit the case study to a certain size, which is opposing the chance of cost reductions if the contract solution was implemented on a larger scale. Also in the Burren Programme (IRL1), the programme is reported to be rather resource intensive to operate. Given this resource intensity, experts consider it difficult to judge whether such programme could be implemented on national level. In the case



of the RNP (AT3) it was for example reported that “The definition of the indicators and goals costs a lot of time and effort and may not be suitable for a broader approach. However, in the further course of the project, it is planned to simplify the indicators and target definition in order to ensure a broader approach”.

#### **Reason for failure #2: Potential bias and deadweight effects - contract solutions reaches farmers with already good ecological practices**

Like in many other existing agri-environmental schemes, also result-based and result-oriented solutions can't prevent deadweight effects, meaning that mainly farmers and foresters who already perform well in the measures/criteria targeted are attracted by the schemes. Also, result-based/result-oriented schemes might trigger the problem of adverse selection, meaning that only well-informed farmers step into the program. In case of result-based/result-oriented solutions, the higher risk of not receiving payment due to not achieving objectives, even if adapting management, might even increase the shift of acceptance toward farmers, who already work in an environmentally friendly way and are therefore positive to reach the set objectives. In the case of the RNP (AT3) as well as DE1 it becomes obvious that mainly farmers with high ecological interest, having already participated in former schemes of contractual nature conservation have so far been entering the program. Also, in Terre the Sources (FR2), the partaking farmers have already developed good ecological practices before, and in the biodiversity monitor for dairy (NL3), mainly environmentally well-performing farmers step into the program. Another example for potential bias is the nature value bargaining (FI6), where land owners voluntarily provide forest areas for value bargaining. Even if these areas need to meet certain characteristics, which are inventoried by forest/biology professionals to represent certain important habitat types and provide certain structural characteristics, still only the areas provided are bargained and these are often not the most valuable ones.

#### **Reason for failure #3: Lack of funding**

Also for result-based/result-oriented contractual solutions the longevity of the solutions is often threatened by the lack of funding. Particularly for solutions being implemented via public sector funding. This threat has been mentioned frequently by the involved experts. In this regard it has to be mentioned that in RB/RO-cases with EU co-funding the calculation of compensation is normally still based on income forgone/ additional costs, thus requiring to calculate with “example measure”. The threat of lack of public sector funding for example has been identified as a challenge in case of the BurrenLife Programme (IRL1), running for about 20 years with constantly changing founding sources and financing parties throughout its lifetime. Also in the cases of BRIDE (IRL3) and Bauska Nature Park (LV3), the short-term nature of the funding and the question of the securing of future funding has been expressed as a threat. Nevertheless, particularly when result-based solutions are implemented by using market mechanisms, such as in the case of Humus program (AT4), EcoMethane (FR4), or even the Carbon market Hiilipörssi (FI3) solution, where results are directly “bought” by private sector actors, result-based approaches can overcome the problem of lack of (public) funding.

#### **3.2.1.3 Conclusions**

- Successful implementation of RB/RO contracts can be linked to a high level of knowledge support. This is realized in successful cases through training or advice. Nature conservation advisors are particularly often involved in bringing environmental aspects closer to farmers and help them to improve the environmental situation on their land. Information material, events and the exchange of information among farmers are also supportive.
- RB/RO contracts report higher flexibility. Farmer's freedom in decision making is often given in deciding how, what and when to do something. This can lead to much more

“ownership” by the farmers and can result in a higher degree of innovation and satisfaction.

- Due to the ‘Learning by doing’ approach in many RB/RO schemes, farmers better understand the connection between their actions and influence on nature. This can help to build social capital and can, in the best case, result in a long-term behavioural change.
- Costs for monitoring results, as well as high administration and implementation costs can limit the success of a scheme. In some EU-case studies, high costs for the implementation and administration of result-based contracts are reported. Sometimes a nature conservation advisor is involved in the case study and a high level of support is given. This is a reason for success but can also be quite resource intensive. The analysis of the in-depth studies revealed, that most of the result-based initiatives investigated report that particularly the costs for setting up the programs and projects have been rather high. As regards running costs of result-based schemes, these differ particularly for the different ways of monitoring: in result-based schemes with rather technological assessment and measurement of fixed performance indicators, such as in EcoMethane (FR4) and the Biodiversity monitor (NL3), running costs are comparably “low” or “medium”. In contrast to these “technological” solutions, result-based programs with “on-field” monitoring of results by ecological advisors and/or controllers are estimated to have comparatively high running costs. The high effort for on-field monitoring stems mainly from the farm-individuality of the objectives and measures: The most intensive cost position is estimated to be investments in project teams as well as in specially trained farm advisors.
- Involving control authorities in the design of indicators in result-based schemes can guarantee integrability into RDPs.

### 3.2.2 Collective implementation and Cooperation/Collaboration

#### 3.2.2.1 Contract description and specifications

In contract solutions based on collective implementation and/or cooperation, farmers and/or private/public landowners voluntarily enter a joint, collective partnership to commonly deliver specific AECPGs. That means that farmers, foresters (and other stakeholders) cooperate (by establishing an entity with or without legal personality) to achieve a certain (AECPG) target. Contract solutions putting forward collective implementation or cooperative/collaborative elements, often address a territorial/landscape level of AECPG provision and therefore mostly target a broader bundle of AECPGs. Beyond that, from the CONSOLE case studies it becomes evident that such solutions are particularly applied to AECPGs being delivered “across field borders”, meaning AECPGs which can hardly be improved by measures on singular fields and plots (e.g. water quality). In general, collective and cooperative/collaborative approaches are likely to be used to address problems that cannot be solved individually or to achieve certain environmental improvements that can better reached by working together.

Collective contracts can be executed with varying degrees of rigour. Very narrowly defined, collective contracts mean that a group of land owners/farmers/foresters join together by establishing a formal entity and this entity applies for an AES. The payment for the activities carried out to enhance AECPGs is then made to the group and not the individual farmer. In the CONSOLE case study sample, a number of cases are found fulfilling this narrow definition. However, while screening and collecting case studies it became obvious that many successful contractual solutions exist, containing strong elements of collaboration and cooperation without fulfilling the element of collective payment. In such cooperative/collaborative contract solutions, individuals help each other and work together to achieve a common goal (e.g. the creation of a specific habitat), while collective payments are not issued. Also, the solutions are characterised by an intense exchange of information and a mutual support by partners to achieve common goals.



In order to not exclude such cases with high potential, in the analysis a distinction is made between contractual solutions based on collective implementation per definition and on cases expressing strong cooperative/collaborative elements.

Of the 60 CONSOLE case studies, 13 are assigned to the contract type of collective implementation. 5 case studies (FI3; PL1; PL2; NL2 and IRL3) can be classified as combinations of collective, value chain, land tenure or result-based contract types. 3 case studies are classified to the group of cooperation/collaboration (COOP). In DE4, a cooperative feature is also involved but the case is mainly assigned to result-oriented contracts. FI5 represents a special case where direct property rights are dissolved and transferred to shares of jointly owned forests under common management.

Ctry	ID	Contract	Title	In-depth
BE	BE1	CO	Participation of private landowners to the ecological restoration of the Pond area Midden-Limburg through a close participation of private and public landowners and a triple E- approach in the 3watEr project.	yes
BE	BE4	CO-RO	Flemish nature management plan	
FR	FR5	CO-RB	HAMSTER – Collective AECM to restore habitats of the European Hamster in Alsace (France)	
IT	IT1	CO	Incentives for collective reservoirs	yes
IT	IT2	CO	Cooperation in NATURA 2000 benefiting biodiversity (Measure 16.5)	
IT	IT6	CO	Integrated territorial projects – (ITPs) territorial agreements	yes
LV	LV1	CO	NUTRINFLOW	
NL	NL1	CO	Kromme Rijn Collective management	
UK	UK1	CO	Delivering multiple environmental benefits in the South Pennines	yes
UK	UK2	CO	Using natural flood management to achieve multiple environmental benefits in Wharfedale	
UK	UK3	CO	Building natural flood management knowledge and capacity in Wensleydale	yes
UK	UK4	CO	Natural Flood Management in the River Swale catchment in Yorkshire	
UK	UK5	CO	Environmental improvement across a whole catchment: Esk Valley	
PL	PL1	CO-LT	Natural grazing in Podkarpackie Region	Yes
PL	PL2	CO-LT	Program “Sheep Plus” - Provincial Program of Economic Activation and Preservation of the Cultural Heritage of the Beskids and Kraków-Częstochowa Upland	
FI	FI3	VC-CO-RO	Carbon Market – a marketplace for the restoration of ditched peatlands	Yes
NL	NL2	VC-CO	Green Deal Dutch Soy ( <i>indicates as unclassifiable</i> )	
IRL	IRL3	RB-CO	BRIDE - Biodiversity Regeneration in a Dairying Environment	
BE	BE2	COOP	FLANDERS – Flemish Forest Group	
DE	DE6	COOP	Forest conversion from coniferous to deciduous stands - an eco-account case	
LV	LV4	COOP	Forest Management	
DE	DE4	COOP-RO	Agro-ecological transition pathways in arable farming	
FI5	FI5	LT-VC-COOP	Green jointly owned forest TUOHI	

*Table 5: Overview table about case studies assigned to the contract type CO/COOP, information about country, ID, contract, title and whether the case study was additionally analysed as an in-depth study. (case studies described in grey indicate cases where collective implementation/cooperation/collaboration is solely an element among other (more dominant) contract features)*



In the following, the case studies based on collective implementation are shortly described:

- BE1: 10 private landowners set up a joint association for initiating and participating in the so-called '3watEr project', being a Life+ project. The association ensured the collective implementation of measures to reach regional environmental objectives, based on voluntary agreements by private parties and an integrated management plan.
- BE4: In the 'Flemish nature management plan', different land owners and managers develop common and differentiated management goals for their respective territories in order to develop sustainable nature and forestry. The plan fosters integrated land management, according to the Flemish Integrated Management Criteria (ecology, economy, social and heritage dimension aspects).
- FR5: The RDP collective project 'HAMSTER' was introduced in 2014 in the territorial Agri-Environment-Climatic Plan (PAEC) "Great Hamster of Alsace" to protect the European Hamster in Alsace. The association AFSAL (Farmers and Wild Animals in Alsace) is coordinating the cropping systems of about 140 farmers to favour the development of European hamster populations.
- IT1: In the RDP 'Collective incentives for water reservoirs' farmers were incentivised to commonly build water reservoirs for irrigation. Support was conditional on the creation of a consortium composed of a minimum number of farmers.
- IT2: The RDP 'measure 16.5' incentivises the local coordination and collaboration of public and private actors in projects aimed at the conservation of biodiversity (*Case of failure*).
- IT6: The RDP 'Integrated Territorial Project' allows the collective implementation and the concentration of non-productive investments aiming at securing environmental assets on some specific areas of the Tuscany Region (vulnerable areas, marginalized, etc.).
- NL1: In the Netherlands, the implementation of RDP agri-environmental and conservation measures in farmland is partly arranged collectively, where local collectives arrange and execute measures. The Kromme Rijn is a region in the Dutch province of Utrecht, where such a collective is active, executing agri-environmental management.
- LV1: The Interreg project 'NUTRINFLOW' aimed at establishing good practical water management examples for the retention of nitrogen and phosphorus, representing win-win situations for agricultural producers. Through working with farmers and landowners, the project promoted and demonstrated the benefits gained from holistic planning and coordinated implementation of water retention and on-farm drainage management measures.
- UK1 – UK5: The case studies UK1 to UK5 are implementations of the public-sector "Countryside Stewardship Facilitation Fund (CSFF)", providing funding to facilitators who interlink land managers (farmers, foresters, other land managers) to facilitate knowledge exchange, to better activate AES, and to improve the local natural environment at a landscape scale.
  - The South Pennines CSFF network is a large network of farmers from the wider Yorkshire area benefiting from the support and active involvement of local government agencies aiming to provide information on how to better manage the local ecosystems especially under the threat of extreme weather events such as the damaging floods of 2015.
  - UK2: The Wharfedale CSFF network was set up to provide multiple environmental benefits through increased biodiversity, protection of historic landscapes, wetland management and improvements in water quality. The network was brought together by, and it is now coordinated through the Yorkshire Dales Rivers Trust which allows greater connectivity with, and knowledge of, similar activity taking place across the region.
  - UK3: The Wensleydale CSFF group was set up to improve knowledge sharing and provide training in farm practices aimed at improving natural flood management (NFM). The group is also focused on how NFM can be delivered in conjunction with positive land management for landscape, biodiversity, and water quality.

- UK4: Farmers and land managers in eastern Yorkshire make up the small Swaledale (CSFF) network to share knowledge on how to provide Natural Flood Management (NFM) and maintain soil health.
- UK5: Farmers across the Esk river catchment are working together to implement solutions to improve the water quality in the Esk Valley. The river contains salmon and trout and efforts are underway to boost the freshwater pearl mussels and migratory fish through tackling problems with sediment and pollutants.
- PL1: The program ‘Natural Grazing in Podkarpacie’ aims to preserve, protect, and restore biodiversity in valuable natural areas. The program is based on a yearly open call, in which non-profit organisations (and other eligible parties) can apply to arrange grazing on specific areas of land by subcontracted farmers, providing animals (cattle, horses, sheep, goats, deer) and grazing land. Payments are issued collectively to the approved NGOs, which transfer funds to the sub-contracted farmers (or producer groups).
- PL2: Likewise, in the program ‘Sheep plus’ annual open calls are organised in which non-profit organizations (e.g. foundations, associations, NGO cooperatives) and other eligible parties present offers to arrange grazing on specific areas of land by subcontracted farmers, who provide animals (sheep and goats) and grazing land.

The majority of the CONSOLE case studies representing collective implementation all public-sector funded, mostly by the countries’ governments, supported by EU funding. The collective implementation case studies include 6 programs being directly integrated into the national RDP (IT1, IT2, IT6, NL1, FR5, UK1-5). Here, the Dutch collective management of Kromme Rijn (NL1) is a classic example for public-sector funded collective implementation per definition. The program is integrated into the national RDP, payments are collectively issued and distributed within the collective. In FR5, the collective AECM HAMSTER was introduced in 2014 in the territorial Agri- Environment-Climatic Plan (PAEC). The incentives for collective reservoirs (IT1) have been programmed in the RDP since the period 2007 – 2013 and the ITP (IT6) is developed within a multi-measure call of the Tuscan RDP 2014-2020. The 5 CSFF case studies (UK1 – UK5) represent public-sector funded contract solutions being part of the English RDP, with a strong focus on network building, aimed at knowledge-sharing and at pursuing specific environmental objectives together. Moreover, the sample of collective case studies includes 2 classic examples of public-sector funded collective implementation not being integrated into the national RDP (PL1 and PL2). Also here, collective payments are issued to the NGOs, which then distribute the funding to the farmers. 2 cases within the sample represent collective implementation in line with LIFE+ and Interreg projects (BE1 and LV1).

Short description of contract solutions based on cooperation/collaboration:

- BE2: A ‘Forest Group’ is a voluntary partnership between both public and private forest owners. Through this cooperation, an attempt is made to provide answers to problems caused by the fragmentation of the forest. Forest Groups offer a comprehensive service that helps the many forest owners manage their forest parcels.
- DE6: The environmental restoration of a private forest in Krailling, Bavaria is undertaken as an eco-account offsetting scheme under the German Impact Mitigation Regulation. 100ha of forest are ecologically upgraded while maintaining the subsurface industrial use. Nature enhancement of forest aisles complements this measure.
- LV4: Contractual agreements (cooperation) are concluded with forest owners on a voluntary basis for the organisation of seminars and practical training for other forest owners, students, etc. Topics of sustainable and environmentally friendly forest management are dealt with.

All 3 CONSOLE case studies representing contract solutions based on cooperation/collaboration address forest ecosystems. Also here, contractual solutions are mainly based on public funding. In the Flemish forest group (BE1), being a private association of forest owners and managers,



government provides the funding of this private association, while forest managers and owners contract the goals of the Forest Group through their membership. In DE6, the private eco-account scheme represents a contractual agreement of a private forest owner with the nature protection- and forest authorities for recognition of the private eco-account. In the LV4 forest management, cooperation is based on a cooperation agreement between the 3 partaking demonstration farms and the Pasaules dabas fonds.

### **Implementation mechanisms:**

As indicated before, a criterion of collective contracts is the establishment of an entity with or without legal personality. Some of the collective and cooperative/collaborative solutions case studies, provided information about the form in which the collective grouping of farmers and foresters is implemented. In the cases of FR5, NL1, BE1, and UK1-5, the prerequisite for collective implementation is the establishment of a legal entity in which partaking members have to join. In Hamster (FR5), the farmers willing to participate in the collective have to join the AFSAL association, in the 3WatEr LIFE+ project the 10 partaking private landowners joined the association OVML vzw (ontwikkeling Vijvergebied Midden-Limburg vzw) by as prerequisite for implementing the LIFE+ project. In the Dutch Kromme Rijn Collective (NL1), farmers, estate owners and other private landowners are part of the collective Utrecht East and in UK1 – UK5, farmers join into the CSFF group, together with the facilitator, and the funding body. In contrast, in the Polish cases of Natural grazing in Podkarpacki (PL1) and in Sheep plus (PL2), implementation is not based on associations or other legal entities, rather are farmers subcontracted by the non-profit organisations/party eligible for funding, which is in charge of the program implementation. In the BE2 contract solutions, cooperation is ensured by the forest owners and managers entering the private Flemish Forest Group association.

Another prerequisite for some of the collective contract solutions represented by the CONSOLE case studies is the number of participants entering the contract. In some cases, minimum and maximum numbers of participation are required for the contract to come to life. In the UK CSFFs for example, a minimum of 4 farmers is needed to establish a CSFF while the upper limit of participation are 100 farmers. In the ITP (IT1), minimum participation is defined by 15, maximum participation by 100 participants. The Dutch collective management of Kromme Rijn (NL) shows the broadest flexibility in numbers of participant, requiring a minimum of 2 farmers and a maximum of 300 farmers joining the collective.

### **Farm/forestry types/systems**

Table 6 gives an overview of the farm/forestry types/systems addressed by the collective contract solutions. The table reveals that in collective contract solutions particularly often the forestry is addressed. Further, 5 collective contract solutions are designed for farms that are located within river catchments. The remaining collective contractual solutions are distributed among various agricultural systems (arable, grassland, permanent).



ID	Contract	Title	Farm types addressed
BE1	CO	3watEr project	Mixed / forestry
BE4	CO - RO	Flemish nature management plan	Forestry
FR5	CO	HAMSTER	Arable farming / mixed
IT1	CO	Incentives for collective reservoirs	Permanent / Fruit production
IT6	CO	Integrated territorial projects	Permanent / wine
LV1	CO	NUTRINFLOW	River catchment
NL1	CO	Kromme Rijn	Mixed
UK1	CO	South Pennines	Mixed
UK2	CO	Wharfedale	River catchment
UK3	CO	Wensleydale	River catchment
UK4	CO	Yorkshire	River catchment
UK5	CO	Esk Valley	River catchment
PL1	LT – CO	Natural grazing in Podkarpackie Region	Grassland
PL2	LT – CO	Program “Sheep Plus”	Grassland
FI3	VC-CO-RO	Carbon Market	Forestry / peatland
NL2	VC-CO	Green Deal Dutch Soy	Arable farming
BE2	COOP	FLANDERS – Flemish Forest Group	Forestry
DE6	COOP	Forest conversion from coniferous to deciduous stands	Forestry / semi natural habitats
LV4	COOP	Forest Management	Forestry
DE4	COOP-RO	Agro-ecological transition pathways in arable farming	Arable farming

*Table 6: Farm/forestry types/systems addressed by the contract solutions*

### **Reasons for the implementation of contract solutions based on collective implementation and cooperation/collaboration**

The CONSOLE case studies, reveal that collective implementation approaches are often implemented to address a landscape level, to improve broader bundles of AECPGs, or to improve specific AECPGs which can be provided only by implementing measures on larger spatial units.

A classic AECPG to be addressed on a larger scale than field size is biodiversity of fauna, normally depending on the existence of specific habitats that go beyond the borders of fields: The LIFE+ 3WatEr project (BE1) for example aims to conserve and restore habitats (e.g. oligotrophic waters) for specific fauna species (tree frog, bittern, etc.). Also the HAMSTER contract solution (FR5) targets at the restoration of very specific habitats suited for the European hamster, limited to a specific geographical area but covering the area of over 140 farms.

Another AECPG classically best to be improved collectively by measures going beyond the scale of single fields or plots are water quantity and water quality (IT1, IT6, LV1). In LV1 for example, the Interreg project was implemented responding to the common pan-Baltic challenge to implement more effective and acceptable measures to reduce nutrient inflows to the surface waters and the Baltic Sea from agriculture. In the initiative of incentivising collective reservoirs (IT1), the collection of irrigation water is only feasible to be implemented on a level beyond single plots. Also in the collective management of Kromme Rijn (NL1) the improvement of water quality is addressed, as well as the enhancement of landscape diversity that supports recreation and the provision of habitats for species including bats and owls.

The program “Natural grazing in Podkarpackie” (PL1) targets a landscape level and has a special focus on the maintenance of cultural landscape and the AECPGs provided within. It responds to the need for economic and tourist activation of the Podkarpackie Voivodeship, as well as the need to protect naturally valuable meadow and pasture areas shaping the unique landscape while maintaining biodiversity. Also, in PL2 the aim is to preserve, protect and restore biodiversity and pastoral cultural heritage at a larger scale in valuable natural areas.

Last but not least, the CSFFs represented by the UK cases are good examples of how broader bundles of AECPGs can be addressed by networks of land managers, involving their regional knowledge about which measures are effective and necessary. The CSFFs are specifically targeted to local criticalities, and include multiple environmental activities designed to address landscape level AECPG provision, such as flood risk management, habitat creation, moorland restoration, and water quality. Moreover, the CSFFs are exemplary for the potential of bundling knowledge and “power” to activate subsidies targeted to regional environmental needs.

Also, the 3 CONSOLE contract solutions being based on cooperation and collaboration address environmental problems in forest ecosystems at a territorial level. The case of the Flemish Forest Group (BE2) reveals, that cooperation can be beneficial in case of challenges stemming from fragmented forest ownership: the program allows forest owners to incorporate the management of their forests into a larger project and receive assistance in forest management via coaching and technical support. Moreover, the forest group enables the organisation of joint wood sales and management plans. In DE6, the main goal is to increase the percentage of deciduous trees through reforestation, forest restructuring and a targeted promotion of native trees in view of enhanced species and habitat protection. The case is an example of how collaboration between a private forest owner and the nature protection authority enables the long-term protection and ecological enhancement of a large forest area.

#### **Improved environmental effectiveness:**

Compared to contractual solutions targeted on the improvement of AECPGs on farm- or field-level, the landscape-oriented approach of contractual solutions based on collective implementation can offer environmental advantages, such as the reduction of habitat fragmentation, the preservation and restoration of ecological networks, having positive effects on biodiversity and ecological effectiveness. In the CONSOLE case studies representing collective solutions, increased environmental effectiveness has often been reported by the experts. It becomes obvious, that collective contracts are particularly introduced when individual contracts have failed in enhancing the provision of specific AECPGs demanding a large scale implementation of measures.

The Interreg project NUTRINFLOW (LV1) is a successful example where water quality has been collectively improved. The experts state that “The project responded to the common pan-Baltic challenge to implement more effective and acceptable measures to reduce nutrient inflows to the surface waters and the Baltic Sea from agriculture. It is evident from recent history of implementing on-farm agri-environment measures, that they have not yielded the results needed in terms of reduced nutrient losses and that complementary measures in the drainage network and landscape are needed. The investments demonstrate a holistic, cooperative approach and lead to reduced nutrient losses from agricultural land to the watershed.” In the HAMSTER project (FR5), the experts reported that “Operations aiming at maintaining European Hamster populations were carried out since the late 1990s but failed to meet the objectives. Following a complaint submitted in 2006, the Court of Justice of the European Union convicted France in 2011 for its lack of effective protection. Two individual agri-environmental measures supporting the implementation of crops and agricultural practices in favour of the European hamster were introduced during the 2007-2013 CAP programming period. However, the lack of spatial coordination of the operations limited their impact. Therefore, the National Hunting and Wildlife Bureau (today part of the French Agency for Biodiversity) and the Chamber of Agriculture of Alsace took the initiative of proposing a collective agri-environment-climate measure (AECM) in the territorial project of the 2014-2020 CAP programming period, in addition to 4 individual AECM. In order to encourage more farmers to get involved in this approach, an individual bonus designed as a “burrow premium” was introduced in 2018 to reward the land managers of the plots on which at least one European hamster burrow was identified. The contract solution can be considered as successful



as the number of European hamster individuals kept increasing since 2014 and farmers maintain their participation.“ Also the collective implementation of RDP in the Netherlands was driven by failures in environmental effectiveness of individual AES. For the case of collective management in Kromme Rjin (NL1) it was reported that “Collective implementation of agri-environmental management has been started up throughout the Netherlands since 2016. After individual management had proven to fail to deliver the desired agri-environmental-climate public goods (AECPGs), a larger-scale implementation of agri-environmental management was considered a more feasible and promising solution“.

### **Controls and monitoring of compliance in collective contract solutions- some examples**

In the sample of CONSOLE CO/COOP contracts, the controls are quite complex and diverse. A distinction can be made, between contract solutions implemented in the RDP and contract solutions introduced by the local government or conducted through a project. Following are some examples of control and monitoring of compliance from the CONSOLE case studies which are implemented in the RDP.

- In NL1, provinces and national government are in charge of monitoring the ecological effects of agri-environmental management. This is delegated to NGOs that do regular species monitoring and provide data to the National Flora and Fauna Database. Monitoring is performed by trained volunteers. Indicators used are trends of target species in comparison between areas with and without agri-environmental management. Collectives themselves monitor if the agri-environmental management that has been agreed on is implemented. A special committee is in charge of this monitoring. Indicators used are binary; assessing if the measures are implemented or not. The Dutch Food Safety Authority (Nederlandse Voedsel- en Warenautoriteit, NVWA) inspects at least 5% of the agri-environmental management in the field.
- In the HAMSTER example (FR5), the Departmental Directorates of Territories (DDT) monitors the surfaces under hamster-friendly crops using the farmers yearly statements necessary to receive CAP aids, and communicates those elements to the Chamber of Agriculture of Alsace and the AFSAL. In addition, there are periodic field inspections (random checks) in accordance with the usual monitoring operations of the CAP. Farmers are monitored individually based on their annual management plan that is transferred to the DDT. The administration can then check the repartition of the actions within a group of farmers.

In cases where (nature) management plans are involved, monitoring and control is often also specified in these plans (BE4, BE1). In the collective UK cases, results are not monitored yet, but monitoring and evaluation is conducted through the claim expenses of the CSFF facilitators. Natural England determines whether farmers and CSFFs' case is offering good value for money. In PL1, a case study initiated by the local government, the controls on the implementation of the program are carried out by the voivodship office representatives, who assess the status of task implementation, effectiveness, reliability and quality of implementation, correctness of spending public funds and properness of record keeping.

### **Linking collective agreements and cooperations with (regional) nature management plans**

Collective contracts and cooperation can be well combined with (regional) nature management plans, as they provide a precise list of the measures to be taken and the resulting environmental benefits. In BE2, nature management plans are described as follows: “The nature management plan describes the most important values of an area for its ecological, social and economic function and makes well-founded choices about the important objectives for this area. The plan must also clarify which measures are required for this, and how and where they are implemented. One also wants to know whether the area under management is actually evolving in the right direction and, where necessary, adjusting management is needed.” In BE2 there are four categories of nature management plans, with different implications as far as commitments, subsidies and tax benefits are concerned. In BE1, for example, in addition to the private contracts



for the LIFE+ project, an integrated nature management plan for the implementation of the nature conservation management objectives is being established. In the case of Kromme Rijn, the province of Utrecht defines targets in its annual nature management plan (NL1). Members of the Forest Group in BE2 are stimulated to participate in joint management plans.

### 3.2.2.2 Reasons for success and failure

Through the joint analysis of collective agreements and cooperations, 7 reasons for success, 2 reasons for success and failure and 2 reasons for failure were identified.<sup>10</sup>

#### **Reason for success #1: Clearly defined roles and measures**

The requirements to be met by farmers, as well as the management measures they should or should not take, are often clearly defined and negotiated in collective agreements. This clear structuring of roles can contribute significantly to the success of the contract solution. In the 3WatEr project (BE1) every private landowner within the association signs an agreement in which he/she agrees that certain actions may be carried out on his/her territory and that he/she also makes the necessary preparations to ensure that these actions can be carried out well. In other case studies, there is a catalogue of measures to which farmers can refer (NL1). FR5 defines collective objectives and requirements, such as: “At least 26% of the total utilised agricultural area (UAA) of the collective zone declared must be dedicated to crops favourable to the European Hamster (winter cereals, alfalfa)”. In the IT6 Territorial Agreement, the participants undertake to make all necessary arrangements to ensure correct implementation and to carry out the relevant interventions within the timeframe set by the project, so a time component is also introduced. BE2 further explains why contractual obligations are advantageous: “Contractual commitments for management plans and projects are [...] [designed in a way] forest managers and owners can trust; this is important for a long-term implementation of objectives (integrated approach: ecology, economy, education)”. Furthermore, the Nutrinflow case highlighted the importance of agreeing with all concerned land managers before implementing collective measures.

#### **Reason for success #2: Coordination agent/Intermediary**

In collective contract solution, often 3 groups of participants are involved. Besides the land managers (farmer/forester) and the funding body, there is a managing authority, a coordination agent or an intermediary to coordinate the land managers involvement as well as the actions to be taken. This is a key element of many collective contractual solutions. In the collective contract solutions represented by the CONSOLE case studies, the coordination agent has different names: in the UK case studies it is called “facilitator“, in the Netherlands “the collective“, in IT1 “consortium“, in IT6 “leading subject“ and in FR5 “intermediary“. The coordination agent has to fulfil different tasks, for example, to attract more farmers (FR5, UK1-5), organise meetings, manage the communication (UK, FR5), guarantee compliance (IT6), coordinate and specify operations (FR5, IT6, NL1, LV1) and regulate the payments (PL1, PL2, NL1). In IT6 it is expressed that the collective contract requires a leading subject to coordinate the management of the proposal. In IT1 it is mentioned as a weakness that without a managing authority the partnership is precarious.

#### **Reason for success 3: Farmers or local farm advisors as an initiator**

Since collective agreements demand a high level of common understanding and ‘vision’, and the basic will to work together rather than as an individual, the initiative of the grouping can be a factor influencing success. Here, the BE1 case study stands out in particular. In BE1, in a bottom-up initiative, landowners have joint forces to participate in a LIFE+ project. Until then, nature management projects have been a monopoly of NGOs in Flanders. In the case study the process of initiating the collective implementation was described as follows: „As in the Midden-Limburg

<sup>10</sup> Something is considered a reason for success if there is an indication of a benefitting influence in the contract solutions and this benefitting influence is found in more than one contract solution.

area, private land ownership was crucial to realizing specific nature management objectives, 10 local landowners took the initiative to start a Life+ project with other stakeholders. For doing so they created a private association (OVML vzw) assuming a common partnership in the Life+ project as an associated beneficiary of the project. Private contracts were signed between OVML vzw and each of the 10 landowners for the further implementation of the LIFE+ project, also through an integrated nature management plan.” An advantage of such bottom-up approach is that the needs of the farmers are particularly taken into account right from the start, which can result in a high level of commitment and trust. The BE1 example has received a NATURA 2000 award for its good involvement of the partners. Another example is the CSFF of UK1. Here the network was initially set up by a farm advisor who had good contacts with farmers, local authorities, and other large landowners.

#### **Reason for success #4: Characteristics of the group/collective and a shared vision**

In several of the case studies, it is described as advantageous if the group joining into a collective is rather homogeneous and has similar characteristics, while homogeneity can mean similarity in terms of farm size, orientation, farming practices, and attitudes to environmental issues of the farm. Furthermore, it is beneficial if the persons in the group pursue the same goals. For example, as one strength of the CSFF in UK1 it is mentioned the “Cohesion of the group as members have common goals which are easier to achieve as part of a group”. Also in UK2, as well as in UK4, the homogeneous farming practices (sheep) with common interests in natural flood management is named as a strength. Weaknesses mentioned (UK2) are the differences between the farm sizes of the CSFF members, which result in the network members having different focuses, interest and priorities, which makes the facilitation and coordination of the CSFF difficult. A diverse group was also identified as a risk in UK3: „This group is big and covers a large geographical area. Members of the group can be different in terms of what they want to focus on. It has been a challenge focusing on such a diverse group with differing interests and has meant holding meetings that capture everyone’s interest can be difficult. Most members are upland farmers whose businesses rely on Basic Payment Scheme (BPS) and Agri-Environmental Scheme (AES) support. BPS is being phased out and AES is changing causing concerns about payments suddenly stopping. Farmer retirement and the subsequent splitting up and incorporation of some farms into neighbouring farms creating a large variability between small and large holdings amplifies the differences in farming methods and focus which can impact upon participation in AES.” Furthermore, for UK3 one weakness of the contract solution is noted to be the large number of members with very diverse farm practices and interests with farm holdings located across a large geographical area, to build up a relationship took therefore longer. UK5 also highlighted group identity as a favourable factor. The group identity leads to securing additional income for environmental management, stewardship, and training. Within the group, there should also be an awareness of the problem, which should be tackled collectively (e.g. poor water quality). If this is not the case in the group, some effort should be made to raise awareness.

#### **Reason for success #5: Regular Meetings**

Regular meetings are an important element within contract solutions, in which the main focus is on group bonding and networking, and where knowledge exchange among the participants is crucial. In the UK1 CSFF, meetings are organised monthly while it is reported that attendance increases from month to month. More than 30 meetings have taken place covering topics ranging from climate emergency to the marketing of rare breed mutton. In the UK1 case study, the formation of the network (and the regular meetings?) is perceived as an opportunity for members to exchange knowledge and ideas about novel farm products and services and taking them towards commercialisation. In UK2, the CSFF network and the meetings are also seen as an opportunity to bring people together, allowing easier comparison between owners and tenants, and highlighting the different pressures they are under. Also in the UK3 CSFF regular meetings take place and for the UK4 CSFF it was expressed that: “The 17 farmers involved at the outset wanted



to engage with natural flood management measures and had expressed particular interest in soil management, flood water infiltration and planting of trees and hedges; all these are issues that are addressed in the monthly meetings to build up knowledge of different practices.“ Also in DE4 regular exchanges are key to initiate a bottom-up process in view of agroecological transformation.

#### **Reason for success #6: Stakeholder involvement**

In FR5 it is mentioned as a strength that a network of stakeholders favours sustainable cooperation and innovative solutions (European experts, National Action Plan, programme LIFE Alister). In UK3, the “partnership involving the farmer members plus Yorkshire Dales National Park Authority (YDNPA), Yorkshire Dales Rivers Trust (YDRT) and Dales Farmer Network (DFN), all sit[ting in] the steering group” is reported as a strength of the network.

#### **Reason for success #7: Reduced (transaction) costs**

For the case of FR5 it was expressed that this type of AECM (collective) is beneficial because it diminishes the transaction costs of the public authorities (instead of interacting with 140 farmers, the institution only deals with one intermediary). In NL1 it is mentioned as an advantage for the Province, that there is an easier subsidy allocation because of dealing with fewer partners. Some of the burden and costs are also transferred from the farmers to the coordination agent (FR5). In BE2 there is a cost reduction, due to the reduced fees for collective sale of timber. Collective measures can lead to a cost reduction for public authorities, while for land managers involvement in collective contract solutions requires time, in particular during their setting up, thus competing with labour time. In some cases, however, costs for coordination have been mentioned, but assessments of these costs are still missing (IT6).

#### **Reason for success and failure #1: Risk**

The risk in collective contracts is shared with the group (FR5), which can be an advantage for farmers. However, there may also be an increased risk, for example, if the payment is linked to the achievement of collective objectives (BE1). This discrepancy is well described in the IT6 case study, where the dependency on individual parties and the associated higher risk are discussed: “Since the core of the territorial agreement is the final realization of the ITP, which depends on at least 2/3 of the investments made by participants, the main risk is the failure of the entire project due to the fault of one or some participants. In this case, the project must be re-evaluated by the Region. So the main benefit, as well as the main risks, are related to the strong interdependence between participants”.

#### **Reason for success and failure #2: Complexity**

The complexity in collective agreements can be viewed from two sides. On the one hand, there may be a reduced complexity for the individual farmer. The administrative burden is reduced and the coordination agent takes over some of the administrative work. For the Dutch collectives (NL1), it was stated that “the collective implementation takes away administrative burden” and for the case of BE2, it was reported that the collective implementation can help “reducing the elements that remove motivation: administration”. On the other hand, the complexity of the contract solution itself is sometimes high. For IT2, which is classified as a failure, it is reported that the planning itself was too complex and this is one reason for failure. Also IT6 cites as a weakness of the collective contract the extreme complexity of the contract and the long and complicated management. The Dutch example also mentions that the bureaucracy has not yet been solved (NL1) and in DE6 the complex planning and related costs are mentioned also as a weakness.

#### **Reason for failure #1: Dependence on public funds**

Almost all collective contract solutions depend on government financial resources, and except for three contract solutions, in all contract solutions EU funds are included. In the evaluation of the



strengths and weaknesses of the contract solutions, this dependence on public funding is often seen as a threat (BE4; FR5; NL1; UK2; UK3; UK4).

### **Reason for failure #2: Competition:**

It may be that farmers see themselves as competitors in the contract solution and that therefore a joint contract solution and cooperation is hampered. In the successful case studies in CONSOLE this was not the case anywhere, it was only mentioned in the case study UK1 that: “There is a possibility that fellow farmers are viewed as competitors and not as collaborators”.

### **3.2.2.3 Conclusions**

- Contract solutions putting forward collective implementation or cooperative elements, often address a territorial/landscape level of AECPG provision and therefore mostly target a broader bundle of AECPGs. Beyond that, it becomes evident that such solutions are particularly applied to AECPGs being delivered “across field borders”, meaning AECPGs which can hardly be improved by measures on singular fields and plots.
- Both in the EU case studies (and in the case studies from outside the EU), the involvement of an intermediary was clearly defined as a success factor. In many cases beyond the CONSOLE EU case studies the existence or ad-hoc creation of an intermediary was a necessary condition for ensuring the implementation of more articulated and effective contracts. In EU-collective agreements, a person or organisation acting as an intermediary and coordinator with the task of organising meetings and managing communication, ensuring compliance, and coordinating and specifying operations was stated also as crucial.
- The requirements to be met by farmers and the measures they should or should not take are often clearly defined and negotiated in successful collective agreements. Therefore, a clear structuring of roles can contribute significantly to the success of collective contract solutions.
- Fostering bottom-up approaches and involving regional key actors as coordinating units enhances commitment and motivation in collective approaches.
- In several of the EU case studies, it is described as advantageous if the group has similar characteristics and is therefore homogeneous in terms of size, orientation, farming practices, and attitudes to environmental issues of the farm. Furthermore, it is beneficial if the persons in the group pursue the same goals and develop a group identity. Therefore, the group should be small, manageable, and homogenous, with a common problem awareness and a shared vision.
- Joint meetings and working together for the delivery of AECPGs can lead to the development of social capital within the groups, resulting in increased social interaction and a “feeling of belonging”. Furthermore, it can lead to an increased willingness for advice and mutual support.
- High dependence on public funding can be seen as a threat to collective contracts because of the need to respect detailed rules for payment calculation, controls, etc.

### **3.2.3 Value chain-based contract solutions**

#### **3.2.3.1 Contract description and specifications**

A number of CONSOLE case studies consider the production of AECPGs in connection with the production of private goods. The contractual solutions for improved AECPG production represented by the CONSOLE case studies are in parts directly pushed forward by the value chain members, having an interest in the documentation of environmental benefits of supplying farms as part of the food companies’/retailers’ marketing strategies and therefore providing support

through finance and appropriate contracts. Here, mostly certain environmental requirements have to be met by the producers in the production of the private good (e.g. reduced use of nitrogen, higher animal welfare standards, preservation of biodiversity, etc.). Value chain related contracts might lead to sales guarantees for the producers, price premiums and/or the use and marketing of products under specific brands. Moreover, some value-chain related contractual solution case studies are examples of a way of better supporting and marketing organic production and to activate the carbon market.

In sum, 13 of the 60 case studies are assigned to value chain related contract solutions. DE2 and FR2 are allocated to RB, while also including VC contractual features.

Ctry	ID	Contract	Title	In-depth
AT	AT1	VC	ALMO - Alpine oxen meat from Austria	
BG	BG2	VC	Organic honey from Stara Planina mountain sites	
BG	BG3	VC	"The Wild Farm" organic farmers	yes
DE	DE5	VC	Water protection bread	yes
ES	ES1	VC	Cooperative rice production in coastal wetlands in Southern Spain	
ES	ES2	VC	Organic wine in Rueda, Spain (Rueda)	yes
ES	ES4	VC	Integrated production in the olive groves	yes
FI	FI3	VC-CO- RO	Carbon Market – a marketplace for the restoration of ditched peatlands	yes
FR	FR3	VC	Esprit Parc National - Food and services in the national park of Guadeloupe	
IT	IT4	VC	"Carta del Mulino" – Barilla	yes
NL	NL2	VC- CO	Green Deal Dutch Soy	
PL	PL3	VC	Program "Flowering meadows" - contracts for protection of biodiversity and water resources by regular mowing of meadows	
PL	PL4	VC	Bio-Babalscy - organic pasta chain preserving old varieties of cereals	Yes
DE	DE2	RB-VC	Organic farming for biodiversity	
FR	FR2	RB-VC	Terres de Sources - Public food order in Brittany, France	

*Table 7: Overview table about case studies assigned to the contract type value chain, information about country, ID, contract, title and whether the case study was additionally analysed as an in-depth study.*

*(case studies described in grey indicate cases where value chain integration is solely an element among other (more dominant) contract features)*

In the following, the case studies based on value-chain contract solutions are shortly described:

- AT1: In the ALMO project a meat production plant, a foundation for animal welfare and 400 farmers managing regional alpine pastures work together to produce and market alpine oxen with higher animal welfare standards.
- BG2: Farmers producing organic honey in a natural reserve joined forces in an organization of producers in 2013. The organization has a contract with one of the biggest producers, distributors, and retailers of organic food in the country. In the contract, the retailer buys the processed honey from the organization paying a premium price and distributes it as a trademark for organic honey with biodiversity features under a famous Bulgarian brand for organic products.



- BG3: The Wild farm is a collective initiative of 4 organic farmers implementing specific animal welfare standards and agri-environmental measures during beef production. Wild farm covers the whole value chain from animal husbandry to meat processing and marketing of the products in a small store in Sofia. Moreover, a contract exists with a distributor for organic/natural/eco-friendly foods.
- DE5: In the water protection bread initiative, actors along the value chain, from wheat-producing farmers, to mills, bakeries and the consumers are engaging to protect ground- and drinking water. Farmers renounce late fertilization of their wheat fields for avoiding nitrate inputs into the groundwater while bakeries commit to process this wheat.
- ES1: 'Cooperative rice production in coastal wetlands' represents a value-chain related contract solution, where rice with higher standards is produced (integrated production of selected varieties). In the case study, rice producers are associated and work together to produce rice in partial and full organic production of high standards.
- ES2: The initiative 'Organic wine in Rueda' targets to expand organic wine production in an emblematic area. The winery Riscal guarantees the purchase of organic grapes, and markets the wine under specific labels, advertised to the domestic and export markets.
- ES4: The 'integrated production' program provides the farmer with a sustainable brand that is usually linked to a better market price. The contract can be made directly with the administration or through cooperatives that manage various farms. As an added value, the use of earth observation techniques allows the monitoring of Soil Organic Carbon (SOC) under different crop management, increasing the soil quality and the mitigation of climate change impacts."
- FI3: 'Carbon Market' (Hiilipörssi) is an online donation service designed to reduce carbon emissions and increase carbon storage by restoring ditched peatlands. It is targeted to consumers and companies who want to decrease their carbon footprint. Landowners offer the ditched peatland to be restored to its natural state as carbon stock. Investments, actually donations, from private persons and enterprises provide capital that enables restoration actions. The landowner commits to leave the peatland untouched and transform it into private protection before the restoration begins.
- FR3: "Esprit de Parc" is a brand promoted, delivered, and granted by the French Biodiversity Agency. The label is granted to farmers and tourism enterprises adopting production practices for nature protection (close to organic farming) in the vicinity of the core natural reserves in National Parks. In Guadeloupe, this might be an opportunity for agroforestry farmers to get better prices.
- PL3: The program 'Flowering meadows' has been introduced in 2011 by the Żywiec Zdrój S.A. company (one of the largest in Poland producers of bottled water and other soft drinks) within their Corporate Social Responsibility policy. Under the program, farmers/landowners in the communes of Jelesnia, Węgierska Górka, Radziechowy-Wieprz regularly mow meadows respecting certain rules to protect biodiversity and water resources used by the company.
- PL4: The Bio-Babalscy Organic Pasta company is a family business, which together with about 90 supplying farmers preserve rare varieties of wheat, cultivated to produce seeds and grains for processing to various cereal products. Farmers delivering to BioBabalsky are guaranteed fair prices as well as knowledge transfer and management recommendations.
- IT4: 'Carta del Mulino' is an initiative proposed by Barilla to enhance the sustainable future path of its production. The *Carta del Mulino* program has particular focus on the improvement of farmland biodiversity, but also water quality, by the implementation of 10 rules of production defined in the ISCC Plus program which have to be met by partaking farmers.
- NL2: The Green Deal Dutch Soy represents a contract solution between national government, regional governments, a soy processor/feed producer, and farmers. The common aim was to establish a viable production chain for soy in the Netherlands, by identifying the most suitable varieties and ensuring a solid soy production volume that allows a viable chain, with fair prices for soy farmers.



In terms of implementation mechanisms, AT1, BG2, BG3, ES1, ES2, ES4, and IT4 follow a similar format, namely the production of a private good in compliance with certain environmental requirements. In PL3 no direct product is involved, the company puts the case study into practice because of the image and also because water springs of the company are located in the case study region. PL3 is led by a water bottle company benefitting from good water quality. FI3 represents a different approach, directly addressing the carbon market. Here the product is GHG emission reduction, while payments are devoted to peatland restoration measures which – in the future – will lead to carbon sequestration. Looking at the acceptance of the contract solution, DE5 and PL4 are particularly interesting cases: The contractual solutions appear to be particularly highly accepted on the farmers' side as for the sustainably produced raw material (in both cases wheat) fair prices are guaranteed.

#### Farm/forestry types/systems:

Table 8 gives an overview of the farm/forestry types/systems addressed by the value chain contract solutions. It reveals that value chain contract solutions particularly involve farming types specialised on the production of a specific, marketable product (e.g. rice, olives, honey, meat, etc.). Only in four contract solutions no specific production or farming types are addressed.

ID	Contract	Title	Farm types addressed
AT1	VC	ALMO	Grassland / meat
BG2	VC	Organic honey	Semi natural habitat / honey
BG3	VC	"The Wild Farm"	Grassland / meat
DE5	VC	Water protection bread	Arable farming / grain
ES1	VC	Cooperative rice production	Rice
ES2	VC	Organic wine in Rueda	Permanent / wine
ES4	VC	Olive integrated production	Permanent / olive
FI3	VC – CO - RO	Carbon Market	Forestry / peatland
FR3	VC	Esprit Parc National	Semi natural habitat
IT4	VC	"Carta del Mulino" – Barilla	Arable farming / grain
NL2	VC - CO	Green Deal Dutch Soy	Arable farming / soy
PL3	VC	Program "Flowering meadows"	Grassland
PL4	VC	Bio-Babalscy	Arable farming / grain
DE2	RB - VC	Organic farming for species diversity	Mixed / organic
FR2	RB - VC	Terres de Sources	Mixed / water catchment areas

*Table 8: Farm/forestry types/systems addressed by the contract solutions*

#### Reasons for initiating value chain contracts:

A major reason for the introduction of value-chain based contracts is the aim to meet consumers demand for more environmentally friendly products (e.g. IT4; PL4; BG2; DE2). Often this demand triggers the interest of retailers/companies, to introduce contract solutions themselves (IT4; NL2; PL3; PL4). An example is the pasta producer Barilla, which has implemented the IT4 contract solution to deal with consumers' reorientation towards more environmentally friendly products, higher safety, and traceability. In some cases, value chain based contract solutions are also initiated by farmers, to better market their products (AT1; BG2; BG4), such as the example of AT1, where 45 oxen farmers joined forces to establish a brand and produce high-quality alpine oxen meat with higher animal welfare standards. AT1 is also a good example for cases in which value-chain based solutions particularly promote certain products from less favoured regions, in order to better place them on the market (AT1; ES2; FR3).

In other cases, the pressure on specific AECPGs can be in the foreground, as AECPG provision is a prerequisite for the product. In the CONSOLE example (PL3), the company Żywiec Zdrój S.A. (one of the largest producers of bottled water and other soft drinks in Poland) is the initiator

of the contract solution by having started the program “Flowering meadows” (PL3) to protect biodiversity, but also to guarantee the water resources used by the company.

Value chain based contract solutions can also be stimulated by players from the public sector or the civil society, in order to improve the provision of a specific AECPG (FI3; FR3; DE5). The Carbon Market (FI3) for example was initiated by the Finnish Association for Nature Conservation and the brand “Esprit Parc National” (FR3) comes from the public organisation ‘French Biodiversity Agency’. Only one case study was initiated directly by the local government, namely the “water protection bread” case (DE5). Here, the government of Lower Franconia has started the initiative to respond to groundwater quality problems.

Last but not least, value chain solutions can be implemented in a bottom-up, solid, quick and robust way (NL2).

#### Controls/monitoring:

The sample of CONSOLE value chain contracts reveals a wide range of different systems to control and monitor compliance with the contracts requirements: There are control systems in which a third party is commissioned to undertake the control and carries it out on an annual basis (AT1; IT4). In such system, normally a certain percentage of farms are inspected (e.g. 30% of total farmers tested in IT4). In PL3 the program controls are carried out by the National Foundation of Environmental Protection Centrum UNEP/GRID-Warsaw. UNEP/GRID is the foundation that manages the program on behalf of the company and its control covers the implementation of the required activities, as well as the environmental monitoring of mowed plots. In some examples, controls are carried out by the processors/retailers themselves, with emphasis on quality control of the final product rather than environmental requirements (NL2; PL4). In PL4 for example, the control covers parameters such as variety, taste, smell, presence of diseases, moisture of grains, and grain contamination.

In cases, where value-chain contracts mainly foster the marketing of organic products, monitoring is conducted in line with AES monitoring. In the cases of BG2 and BG3 for example, this monitoring is conducted by an independent certification organization for organic farming.

In the case of DE5, monitoring is carried out by the local water supplier, and/or by the involved research institute. Here, the annual controls do not only involve the participating farmers, but also all other actors in the value chain such as the participating mills and bakeries.

Finally, in the case of FI3, experts of the initiative “carbon market” conduct monitoring themselves. Here monitoring is rather irregular and depends on resources available, monitoring objective is mainly of the success of the restoration measures for example by checking the condition of the dams.

The CONSOLE value chain case studies have shown that the rules can be set by different actors. In the Austrian example (AT1) the primary rules were set by the farmers themselves. In the flowering meadows program (PL3), they were defined by a nature conservation organization and in the Barilla case study (IT4) the company (Barilla) determined the requirements.

**Communication strategy – Marketing - online shops and brands:** The motivation for companies (retailers, distributors, processors) to enter into contractual solutions linked to the provision of public goods often has the objective to improve the companies’ image. For this reason, value chain based contract solutions are often accompanied by marketing measures and strategies (IT4, DE5, AT1). Furthermore, by communicating the environmental advantages of the products and the – potentially – higher quality, it is sought to achieve a higher price with the consumers to compensate for the additional expenditure. In DE5 there is an accompanying



communication strategy, for example through the slogan ‘Drinking water protection through reduced fertilizer use’. Selling products online is also of increasing interest. In the case studies AT1, ES1, and ES2 an online shop is set up.

Examples of the marketing strategy and internet pages of the involved brands in the value chain contract solutions:

- IT4: <https://youtu.be/njH-FdkmwwQ>
- PL3 <http://www.kwietnelaki.karpatylacza.pl/o-projekcie/o-zywiec-zdroj-s-a>
- PL4: <https://biobabalscy.pl>
- FR3: <https://www.espritparcnational.com>
- ES1 <https://arrozua.com/>
- AT1: <https://www.almowelt.at/>

**BRAND involved** (examples for brands in the value chain contracts)



In value chain contract solutions, products are often marketed under a specific brand, intended to highlight the higher environmental standards, origin, and quality. In the CONSOLE sample of value chain based contract solutions, most cases already have a special brand, while some are still in the process of brand development. In BG2 for example it was stated “In the long run they foresee to invest in their collective processing plant and to distribute the honey products with their own environmental brand – organic honey from natural reserves”. The name of the brand can directly refer to the environmental aspect (DE5 ‘Water protection bread’ and AT1 ‘ALMO - Alpine oxen meat’). In DE2 it is stated as a reason for success, that the project logo on the products enables consumers to recognize the products with nature protection benefits. Also, to promote the products of a specific region (ES1; AT1) or national park, the creation of a brand can be a valid strategy (FR3).

- FR3: “Esprit Parc National” is a collective brand registered by National Parks of France and it is implemented in each of the 10 French National Parks. The brand is exclusively granted to products or services from economic activities that preserve the biodiversity and the heritages. Through this brand, the National parks contribute to the preservation of the cultural heritage and the valorization of activities compatible with nature protection. The brand is promoted nationally, but still not well known because there are few participants and low volumes of branded products (may not attract as many consumers as expected). This brand also concerns agroforestry productions in the French outermost region Guadeloupe, in particular undergrowth crops such as vanilla, coffee, or cocoa.
- ES1: The Arrozua program covers almost the entire value chain, from the rice farmers to the storage, the processing plant, the sale to the end customers. Everything is organized



under the Arrozua brands (i.e., the Doña Ana and El Ruedo labels) and the white labels that are commercialized by Spain high-value retailers (e.g., El Corte Inglés).

- AT1: The brand continues to develop and responds to the animal welfare requirements of the population and to the desire for online trading.

### 3.2.3.2 Reasons for success and failure

Through the joint analysis of the value chain contracts, 10 reasons for success, and 1 reason for failure were identified.<sup>11</sup>

#### **Reason for success #1: Market-driven approaches**

Most value based chain contract solutions represent market-driven approaches (FI3, BG3, BG2, PL3, AT1, ES1, ES2, ES4, IT4, FR3, and PL4), for which no public funding is needed. The independence from public funding can be seen as a strength of value chain based contract solutions. The payment mechanism often consists in a higher product price achieved on the market. Consumers are willing to pay this price premium because of e.g. the higher quality, the environmental standards, the regionality. In DE2 “Efforts rewarded by the market” have been identified as a strength of the solution. In FR3 it is explained: “Payments are coming from the consumers. The Payment for Environmental Services (PES) corresponds to the monopolistic competition mark-up (positive price difference due to the discrimination of the product), if any, associated with the branded product compared with a standard product. A strictly positive mark means that some consumers voluntarily contribute to the environmental objectives of the brand while buying the branded product”. Only in the DE5 case study there is a dependency on funding which is mentioned as a threat: “project funds (are) essential for project success at the current stage”.

**Reason for success #2: Trust and good communication within the value chain:** Trust between the different actors along the value chain is an important factor for success and acceptance (IT4, DE5, PL4, PL3). For example, DE5 and PL4 report a particularly high acceptance among the participating farmers, while highlighting the high level of trust and good communication as the basis for success. In DE5, trust is created by meetings and the mutual visiting of all actors of the value chain. “The visits of a water utility, a farm, a bakery, and a mill were important for the team spirit and contributed to strengthen the sense of community”. In PL4 it is said, that the cooperation within the chain is largely based on mutual trust and friendly relations between farmers (grains suppliers) and the processor. The farmers and the processor meet twice a year and agree on deliveries. If there is a lack of trust, good cooperation between the actors along the value chain is unlikely. PL3 mentioned as a weakness in the contract solution: “Some plots are small and unreachable by the program due to distrust, reluctance or passive attitude of landowners to cooperation”.

**Reason for success #3: Profitability and price premium:** Profitability and price premium for the farmers are important success factors in value chain contracts. In the majority of the value chain contract solutions, a higher price or higher profitability for farmers was specifically mentioned. In PL4, where the acceptance among farmers is particularly high it is said that “Farmers get a good price for the cereals. The indicators of the economic performance show that price premium for organic pasta/wheat production is high at both, farm and processing levels. ”Also in the cases ES2, ES4, DE2 and AT1 the farmers receive a higher price for their products. In IT4 the connection between the provision of AECPGs and the higher price is mentioned: “the contract that is linked to the provision of AECPGs also stabilises the income of farmers and gives them a premium on the product price”. In FR3 it was stated as a risk for the contract solution if

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<sup>11</sup> Something is considered a reason for success if there is an indication of a benefitting influence in the contract solutions and this benefitting influence is found in more than one contract solution.

the price, even if higher than usual, was not sufficient to cover the cost of environmental efforts, the fee, and other transaction costs.

#### **Reason for success #4: Focus on regional and short value chains**

Strong regional focus of the value chain, with a special involvement of local partners, is supportive (DE5, AT1; ES1; FR3). On the one hand, the direct benefit for the region is visible, and on the other hand, the relationship between the partners can be built up more easily due to personal contacts. This connection to the region is particularly visible in AT1 and DE5. A specific brand can also become an economic factor for the whole region. This is notably illustrated in AT1 “ALMO-brand” and ES1 “Arrozua-brand”: “The Arrozua brand is an economic factor for the whole region. It also influences the tourism sector, because rice is very important in the local gastronomy”. In FR3 the short value chains are named: “Short value chains are promoted to create more local value and social links with the National Parks and to make National Parks an asset and an opportunity for neighbours rather than a source of environmental constraints hampering the economic development”. Furthermore, in DE2 the regional value chain with focus on organic management and species diversity is seen as a strength.

#### **Reason for success #5: Communication strategy – Marketing - online shops and brands:**

A sound marketing, clever branding and a thought through communication strategy are important success factors of value-chain based contract solutions. Multiple CONSOLE case studies reveal, that by communicating the environmental advantages and the potentially higher quality of the products, higher consumer prices can be charged to compensate for the additional expenditure.

**Reason for success #6: Use of existing long-term relationships as a basis for a value chain approach:** In some cases, the value chain based contract solutions, especially if they implement a regional approach, can be based on, existing relationships. For example, this is the case in PL4 and DE5 both building upon longstanding contractual relationships. In PL4 it is reported that “The cooperation lasts for many years already (with some farmers even since 1993)”, while simultaneously the high level of long standing mutual trust is highlighted.

**Reason for success #7: Perceived fairness along the whole value chain:** To ensure fairness, it is particularly important to create transparency along the value chain, especially concerning pricing. In DE5 it is expressed that: “There is no pronounced competitive situation as all participating mills offer comparable pricing conditions to the participating farmers, the quantities are negotiated individually in contracts. Between the bakeries and the mills, the pricing is fully left to the market”. Also in PL3, a fair financial remuneration for the farmers for maintenance and mowing the meadows increases the perceived fairness. Perceived fairness can also be fostered by equal bargaining power. This is specifically described in PL4: “That is why the relationship between farmers [...] and the processor [...] may be described as a close partnership rather than a typical buyer-seller connection. One may say, thus, that both parties have almost an equal bargaining power due to the fact that all partners in the chain are aware of their mutual interests. Farmers appreciate assured payments and good prices offered by the processor, but also the possibilities of sales of large quantities of produce. Farmers declare that they “simply” like to sell their grains to Mr. Babalski”.

**Reason for success #8: Product purchase guarantees:** There is less risk and a higher acceptance on the farmers’ side, if the contracting party guarantees to purchase the products from the farmers when the farmers meet the requirements (DE5, AT1; DE2; IT4). In IT4 it is said: “For the farmers, the risks are the usual ones of agricultural productions. If the quality of the product is not high enough for the Barilla processing, the price premium is granted in any case to cover the higher costs incurred by the farmers.”



**Reason for success#9: Collective characteristics:** Farmers in a value chain contract solution can act as a collective and join together. In many of the contract solutions, farmers join together, particularly to bundle their bargaining weight in the value chain. This merging can take place in the form of an association, organization of producers, or cooperation. Following are some examples from the CONSOLE case study sample on how the collective characteristics can be implemented.

- BG3: A collective initiative of four farmers applies animal welfare standards, organic standards, agri-environmental measures for the production of beef.
- BG2: Farmers organize themselves in the organization of producers for organic honey. Each farmer sells his production to the organization of producers of the farmer, that represents the first collective effort among organic beekeepers in Bulgaria.
- PL4: Over 90 farmers delivering to Bio-Babalscy, most of them being members of the EKOLAN association - Association of Organic Producers in Cuiavia and Pomerania.
- ES1: An association of 1100 farmers created in 2005 (Arrozua) provides a foundation for the producers to produce and market rice with higher quality. The farmers collectively fund the cooperative. Cooperatives are organizations managed under the principle of collective ownership and the democratic control of members, as well as the tracking of adherence to common values and cooperative principles.
- ES4: Sometimes, cooperatives are involved in the contracting parties and they provide to the farmers a better price for their product.
- AT1: The farmers are organized in an association (ALMO-Verein) founded in 1988. The association consists of 500 members (mostly farmers). The farmers deliver their oxen to the Schirnhof company. Schirnhof is a meat-producing plant. They organize the slaughtering, processing, and selling of the oxen.

**Reason for success#10: Quality and originality play an important role:** Quality and originality are often regarded as important sales arguments (AT1; BG2; ES1; PL4). In BG2 for example it is stated: “A Bulgarian product with high quality from the natural reserve can reach the Bulgarian market and consumers, whose demand for Bulgarian eco-friendly foods is rising in recent years. The quality of the honey is very high due to the characteristics of the region”. Often, product requirements for farmers shall ensure a higher quality: “In terms of products quality, the farmers are required to be part of a process to enhance their production: enrolment in a process to identify the quality and origin of their production or be labelled in organic agriculture or proposing direct sale, short circuit or be registered in a collective approach product valuation (territorial brand...) or value their production through a transformation activity (FR3).”

**Reason for success and failure#1: Production rules and requirements for farmers:** The right scale for setting requirements for farmers in value-chain based solutions is a balancing act. On the one hand, production rules and requirements must be transparent, strict and controlled enough to maintain consumers’ trust. On the other hand, the implementation of rules and requirements need to be feasible for the producers. In FR3 it was mentioned that: “Stringent requirements [...] restrict the number of potential participants”.

**Reason for failure#1: Dependence on distributor/contractor:** The dependence on a single distributor or processor is stated as a weakness in several case studies. BG3 named as the main weakness, that at the moment the contract for distribution is only with one contractor. The dependence on one contractor is also confirmed in AT1, where all meat is delivered to only one buyer. The dependence on retailer for the premium price was reported in the DE2 case study.

### 3.2.3.3 Conclusions

- Most of the value chain contracts are market-driven approaches, no public funding is needed. The independence from public funding can be seen as a strength of value chain contract solutions. The payment mechanism is often a higher product price achieved on



the market. Consumers are willing to pay this price premium because of e.g. the higher quality, the environmental standards, or the regionality.

- Successful implementation of a value chain contract requires a price that covers the cost for the provision of the AECPGs (e.g. opportunity costs, management costs, costs for fees, transaction costs). The higher quality and the environmental benefits of the products in the value chain needs be financially compensated.
- The motivation for companies (retailers, distributors, processors) to enter into contractual solutions linked to the provision of public goods is often also to improve their image. For this reason, value chain contract solutions are often accompanied by marketing measures and strategies.
- Farmers should not become too dependent on a single contractual party (processor, distributor, retailer).
- Guaranteeing good levels of equity and fairness, as well as high level of trust and good communication enhances acceptance particularly in value-chain based solutions.

### 3.2.4 Land tenure-based contract solutions

#### 3.2.4.1 Contract description and specifications

10 of the 60 CONSOLE EU case studies represent contract solutions characterized by land-tenure (LT) arrangements with environmental clauses. The functioning of these contract solutions is mainly that landowners (private or public) lease their land to farmers, foresters under certain conditions to achieve some form of ecological improvement.

Ctry	ID	Contract	Title	In-depth
BG	BG4	LT	Conservation and restoration of grasslands in Strandzha and Sakar mountains for restoring local biodiversity and endangered bird species	yes
DE	DE3	LT	Collaboration for sustainability between institutional land owners and tenant farmers	
FI	FI1	LT	Forest Bank - a forest conservation program in Indiana and Virginia, US	
FI	FI4	LT	Pasture bank – a platform for pasture leasing	
FI	FI5	LT-VC-CO	Green jointly owned forest - TUOHI	yes
FR	FR1	LT	Eco-grazing - Grazing for ecological grasslands maintenance in the green areas of Brest Metropole	yes
LV	LV2	LT	DVIETE LIFE	yes
PL	PL1	LT – CO	Natural Grazing in Podkarpackie Region	yes
PL	PL2	LT - CO	Program “Sheep Plus” - Provincial Program of Economic Activation and Preservation of the Cultural Heritage of the Beskids and Kraków-Częstochowa Upland	
IT	IT3	LT	Rewilding of detention basin in Massa Lombarda	

*Table 9: Overview table about case studies assigned to the contract type land tenure, information about country, ID, contract, title and whether the case study was additionally analysed as an in-depth study.*

In the following, the case studies representing land tenure contract solutions are shortly described:

- BG4: Under a project financed in parts by the LIFE + program, the Bulgarian Society for Protection of Birds purchased and leased out over 600 ha land to farmers with requirements to restore and maintain the pastures in an environmentally friendly way.
- DE3: Institutional landowners lease their land to tenant farmers requiring a sustainable agricultural land use protecting environment and nature.

- FI1: Private forest owners convey both land development and timber rights to a quasi-financial institution, the Forest Bank, in exchange for guaranteed annual payments, the value of which is based on the landowner's standing timber.
- FI4: Pasture bank is a platform through which landowners and domestic animal herders can connect with each other and agree on a land-tenure contract for leasing pastures or grazing animals. Either the animal herder pays for wild pastures, or the landowner who leases grazing animals pays for the herder.
- FI5: In TUOHI, the contract solution includes private investments in the jointly owned forest in form of invested money or forest property. Monetary investments are spent for acquisition of forest land. All shareholders of TUOHI have agreed on the management regime based on continuous cover (uneven-aged) forestry.
- FR1: The Head of Green Spaces of Brest Metropole has chosen to entrust the management of the mowing of some of their green spaces to an eco-grazing service proposed by a breeder with a part of his flock of Scottish Black Face-bred sheep.
- LV2: In the LIFE+ project DVIETE, grassland restoration contracts have been concluded between the Latvian Fund for Nature (LFN) and the landowners who carried out and got reimbursed for grassland restoration. The contracts included the requirement to maintain the restored areas. In the after LIFE program, land lease agreements or agreements on "grazing of biologically valuable grasslands" have been concluded between the Dviete Valley Parish Association and the landowners for grazing management.
- PL1: The Natural Grazing in Podkarpackie program was introduced to preserve, protect, and restore the biodiversity of invaluable natural areas. Therefore, an open call is organized each year in which non-profit organizations (e.g. foundations, associations, NGO cooperatives) and other eligible parties present their offer to arrange grazing on specific areas of land by subcontracted farmers, who provide animals (cattle, horses, sheep, goats, and deer) and plots of land for grazing.
- PL2: Each year an open call is organized in which non-profit organizations (e.g. foundations, associations, NGO cooperatives) and other eligible parties present offers to arrange grazing on specific areas of land by subcontracted farmers, who provide animals (sheep and goats) and plots of land for grazing.
- IT3: Purchase of private land by a public association for environmental and natural hazard management.

The land-tenure cases PL1, FR1, BG4, FI4, and PL2 are all devoted to grassland systems and grazing management, often targeting grazing of sheep. FI4, PL1, and PL2 are thereby quite similar, with contracts concluded on a yearly basis. FR1 and BG4 represent longer contracts (6 and 7 years). In IT3 and BG4, land is first purchased by public authorities or associations and is then leased back to farmers with environmental clauses. In the cases of the Forest Bank (FI1) and TUOHI (FI5), the mechanism works the other way round: Here, forest owners provide their land to an organisation for cultivation. LV2, where land tenure agreements are introduced in the aftermath of a LIFE+ project, demonstrates that land tenure contracts are also suitable to maintain previously implemented measures in the long term; the protection of public goods is thus guaranteed even after the end of a restoration measure. In DE3, land tenure contracts with sustainability clauses are replacing classic tenure contracts with the rental price as key decision criterion.

From the EU case study sample of land-tenure contract solutions it becomes obvious that often they represent "follow-ups" to different programs and projects, and are often introduced by public or civil society organizations. The program "Podkarpacki Naturalny Wypas" (PL1) as well as "Owca Plus" (PL2) were established as a public initiative. In FR1 the Brest Metropole issued a call for tender. In the cases of LV2 and BG4 LIFE+ projects have been the basis. FI4, pasture bank, is a platform initiated by Rural Women's Advisory Organisation together with ProAgria. In FI5 no specific project is involved, the TUOHI jointly owned forest is a juridical private entity.

DE3 was first a private initiative, while after the ending of the project tenants and land owners founded an association. Finally, the forest bank (FI1) is a private scheme set up by the nature conservancy.

#### Farm/forestry types/systems:

Table 11 gives an overview of the farm/forestry types/systems addressed by land tenure based contract solutions. 50% of the land tenure contract solutions are devoted to 'grassland systems. Two cases address forestry, additional two are designed for farms that are located within water basins or flood plains and one is mainly focussing on arable farming.

ID	Contract	Title	Farm types addressed
BG4	LT	Conservation and restoration of grasslands in Strandzha and Sakar mountains	Grassland
DE3	LT	Collaboration for sustainability between institutional land owners and tenant farmers	Arable farming (grassland)
FI1	LT	Forest Bank	Forestry
FI4	LT	Pasture bank	Grassland
FI5	LT	Green jointly owned forest	Forestry
FR1	LT	Eco-grazing	Grassland
LV2	LT	DVIETE LIFE	Flood plain
PL1	LT – CO	Natural Grazing in Podkarpackie Region	Grassland
PL2	LT - CO	Program "Sheep Plus"	Grassland
IT3	LT	Rewilding of detention basin in Massa Lombarda	Water basin

*Table 10: farm/forestry types/systems addressed by the land tenure contract solutions*

Reasons for land tenure contracts: Land tenure based contract solutions often target extensification of area, with a strong focus on maintenance. As already described, such agreements are particularly often used in order to maintain and restore high-value pastures/grassland (PL1; FR1; BG4; FI4; PL2). The land tenure contract solution in LV2 was created to maintain the environmental improvements from a LIFE+ project and the FI1 - Forest Bank attempts to blend economic and ecological objectives by protecting valuable habitats and watersheds and executing ecologically sound forest management that yields reasonable financial return to landowners. In DE3 in contrast, an agricultural system dominated by large-scale fields and an intensive agricultural production with a high share of rented land is targeted. Here, under the contract solution, land can be only leased if farm individual lending criteria, connected to ecological (and social) aspects are planned and carried out.

#### The initiator of the contract solution:

The CONSOLE sample of land tenure contract solutions reveals two main initiating groups/actors. The first group are private and civil society organisations, such as NGOs, various organizations or associations. The pasture bank platform (FI4), for example, was initiated by Rural Women's Advisory Organisation together with ProAgria which is a Finnish expert organization. The second initiating actor is the local government, such as in the cases of PL1, PL2, and FR1.

#### Controls/monitoring:

In contrast to the other three types of contract solutions, at least in the EU sample of land-tenure based case studies controls seem to play a subordinate role. Five of the ten land tenure cases report no or no systematic control system (DE3; FI4; FI5; FR1 and IT3). In the cases of LV2 and BG4 monitoring is taking place: in the DVIETE project (LV2), habitats, plants as well as hydrological



monitoring are performed and in BG4 monitoring of the conservational management on the pastures is executed by the Bulgarian Society for Protection of Birds. In PL1 and PL2, more comprehensive controls are conducted. These controls assess the status of task implementation, effectiveness, reliability, and quality of implementation, the correctness of spending public funds, and properness of record keeping. In PL1, at least 10% of beneficiaries are controlled.

### 3.2.4.2 Reasons for success and failure

Through the joint analysis of the land tenure contracts, 6 reasons for success were identified.<sup>12</sup>

**Reason for success #1: Focus on a specific area:** Land tenure contracts are usually related to a specific, well-defined area. Examples from the case studies are valuable grasslands to be protected (PL1, PL2, LV2, FI4), specific habitats, e.g. bird breeding areas (BG4), specific forest areas (FI1, FI5), a district (DE3), or a water basin (IT3). The areas are often priority ecological and environmental areas, which are adjacent to or directly in national, state forests or parks, or other existing conservation and recreational areas (FI1, BG4, PL1, PL2, LV2).

It is clear that land tenure contracts strongly relate to ownership. Beside private landowners land can be owned and leased by one organisation/public authority (e.g. FR1 – Brest Metropole), or by several institutional land owners including the church and municipalities (DE3). For a successful implementation of land tenure contracts, it is essential that the location of area for AECPG provision is paired with a suited ownership structure, and that finally the agricultural system in the region, or at least the farming system of some farms is suited to integrate the land tenure system into the farming concept (PL1, BG4, and FR1). If implementation is possible, land-tenure based solutions can provide a territorial or landscape approach, which offers advantages in terms of AECPG provision. In the case of DE3 for example, it was mentioned that “The landscape-oriented approach puts the land ownership and the land management into a spatial context going beyond the borders of the agricultural holding and the property, enabling more demanding measures” and in FI1: “The collection of land is managed by one entity, the Forest Bank, which operates at the scale of landscapes and watersheds and thus can greatly expand biodiversity and other conservation effectiveness”.

**Reason for success (and failure) #2: Contract design.** The case studies showed that land-tenure based agreements can offer long term solutions, giving the parties planning security and confidence (FR1, BG4). For example, the grazing contract in FR1 has a duration of 6-years, in order to guarantee a long-term vision for the tenant. In the Finnish example FI5, the contracts are even permanent and in FI1 the length of participation can be fixed-term (30 years) or permanent (99 years). Nevertheless, this permanent or long-term aspect of the contracts can also be a reason for failure as in the FI1 case study it was stated: “Many forest owners are not willing to give up timber and land development rights for 30 years or permanently”. In IT3 the duration of the commitment is 20 years. In the case of grazing contracts, the contract periods are shorter and also one-year contracts exist (PL1, PL2, and FI4). If also funding is provided on an annual basis, the risk for the tenant gets higher, particularly if adaptations in the farm management are necessary to join into the contract.

Besides aspects of contract duration, it also became obvious that land-tenure based contracts should be addressed directly to the land managers, while subcontracting should be avoided (see PL1).

Last but not least, it became clear that the lower profitability and the increased management efforts needs to be reflected in the lease price. In BG4 for example, farmers can rent the land

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<sup>12</sup> Something is considered a reason for success if there is an indication of a benefitting influence in the contract solutions and this benefitting influence is found in more than one contract solution.

under protection for free, while being in parallel eligible for governmental support for maintaining the pastures in conservational manner (practice-based subsidy).

**Reason for success #3: Compatibility with land managers' objectives and regional specifics.**

As already indicated above, land tenure based contract solutions need to fit to the participating farms and regions. FI1, for example, incorporates private landowner preferences related to the environment, income, and risk in the contract solution, in order to reach a higher acceptance. PL1 and PL2 emphasised the importance of compatibility with the region: Programs which fit well to the needs, traditions and culture of the region are better evaluated by the beneficiaries and involved parties and in the end, more successful (PL1, PL2).

**Reason for success #4: A shared vision of environment and high trust between the contracting parties.**

A common understanding between the contracting parties about where they want to go (in terms of environment, land management and economic aspects) and a basis of trust, are aspects often raised in the context of successful land tenure contract solutions. A shared vision is especially emphasized in the BG4 case study: "All the partners in the contract share a common vision that agriculture must go hand in hand with nature conservation and biodiversity protection" and confirmed by the FR1 case study naming as a major strength of the solution "Goodwill and shared trust/vision between contractors". In FI5 it is said that "They [the participants] also share a vision that uneven-aged forest management results in bigger overall benefits than traditional even-aged forest management." FR1 reports high trust between the partners, also compromises are made by both parties. DE3 named as a threat, the unequal power relation (landlords, tenants).

**Reason for success #5: The contract solution provides multiple benefits.**

The EU case studies revealed that it contributes to the success of the contract solution if multiple benefits can be derived from it. In addition to the benefit for the environment, there can also be economic, social, and cultural benefits. In FR1 social co-benefits (social link, urban agriculture) are reported: "Eco-grazing has been successful with the population, (...) more animal-friendly". In PL2 it is said: "The program brings measurable environmental, cultural and economic benefits. The outcomes of the environmental monitoring showed significant improvement of biodiversity in natural habitats. In the economic aspect, the tourist infrastructure was modernized and expanded to improve the accessibility and attractiveness of the areas included in the program". PL1 stated: "Farmers and contracted organizations can obtain some economic benefits while preserving, protecting and restoring the biodiversity on valuable natural areas".

**Reason for success #6: Advantages for tourism (especially eco-tourism).**

BG4, PL1, PL2, IT3, and LV2 mentioned the benefits from tourism and for tourism in relation to the land tenure contracts. Tourism can have a twofold influence on the contractual solution, on the one hand it can be a strength of the contractual solution if it increases the attractiveness of the landscape, which in turn is beneficial to tourism. Also, it can be advantageous for the success of the contractual solution if nature conservation is given a higher priority through the additional income generated by ecotourism. For example, the rewilding of the detention basin in Massa Lombarda opened the doors for tourism (IT3). In the PL1 case study it was stated: "The presence of animals on pastures increases the aesthetic value of the landscape, which contributes to increasing the tourist attractiveness of the region". Also PL2 reported that, touristic attractiveness of the region favoured the implementation of the program. In BG4 it is considered a weakness that there is no possibility to include ecotourism in the region.

### 3.2.4.3 Conclusions

- For a successful implementation of land tenure contracts, it is essential that the location of area for AECPG provision is paired with a suited ownership structure, and that finally



the agricultural system in the region, or at least the farming system of some farms is suited to integrate the land tenure system into the farming concept (PL1, BG4, and FR1).

- Direct and longer-term contracts, which offer the farmer planning security, are an advantage. However, it is most important that the length of the contract matches the subject matter of the contract. In the case of grazing contracts, for example, the contract periods are shorter and there are also one-year contracts. For contracts that address forest, the contract periods are rather long.
- Land tenure contracts often report mutual benefits. In addition to the benefit of the environment, there can also be economic, social, and cultural benefits. Often the contracts can also make a positive contribution to ecotourism in the region.

## 4 Lessons learned from contract solutions from outside the EU/cases beyond the CONSOLE EU case studies

This section distils the lessons learned from cases and solutions developed beyond the CONSOLE EU case study sample, aiming at an improved delivery of AECPGs. The range of different agri-environmental contracts reported in this section have been reviewed in the task 2.3 “Analysis of successful experiences outside Europe”: the objective of that task is the building of a catalogue of experiences from different contexts that could add new and interesting perspectives for application in the EU and to feed into WP2 and the CONSOLE project a wider range of opportunities for contract design.

To optimise the relevance for the CONSOLE project, the task 2.3 will build a living document to support the activities of the project with a particular attention on grey literature to scan potential solutions able to overcome the hurdles for the implementation of new contract solutions.

In table 11, the current review of cases is outlined. 113 documents have been collected and screened. Among these, 65 cases have been reviewed. In addition, the data base includes 8 reviews of cases aimed at finding limitations and/or reasons for success of several cases worldwide, and 2 documents focusing on potential solutions that are proposed but not applied in the real world. As described in section 3 for the EU cases, many cases belong to more than one contract type as shown in the following table.

		Secondary approach type			
		Result based	Collective	Value chain	Land tenure
Primary approach type	Result based	30	6		
	Collective	3	8		
	Value chain		1	1	
	Land tenure	3	5	1	5

*Table 11: Number of cases per contract type reviewed from outside the EU. The table outlines the number of cases where a mixed approach involving more than one solution type was proposed.*

In the review of cases beyond the CONSOLE EU case studies, result-based contracts are the most commonly found. Moreover, collective agreements are the contract type more commonly mixed with other forms of contract solutions. Currently, value chain contracts are the least represented solution. The search of that kind of contracts will be more specifically focused in the future efforts regarding the task 2.3.

It should be noticed that the reviewed cases are developed in socioeconomic and environmental contexts that are different from the EU. In addition, the policy context is usually not embedded in a wider policy framework as the CAP. That can reduce the transferability of the lessons learned



to the EU. On the other hand, in many cases the tradition of e.g. result-based solutions is longer than in the EU and that will give interesting real-world examples to develop this kind of solutions in the EU.

The improved solutions that have been reviewed are developed to improve the delivery of AECPGs and tackle a range of limitations of more traditional contracts. A range of limitations of traditional forms of contracts can be summarized in: general difficulties in building of collectives, technical/economic complexity of monitoring results, reduced uptake due to high risks, administrative burden, spatial mismatch between provision of services and benefits in case of “global” AECPGs (e.g. carbon stock).

In the review cases, the contract arrangements outlining interesting solutions for CONSOLE are organized in three main streams as follows:

- *New arrangements of the actors involved in the contract.* A widespread problem of agri-environmental schemes is to strike a balance between measures that are easy to uptake for the farmers and at the same time sufficiently fine-tuned to improve the environment. Thus, the intermediary is in practice a catalyst for the success of more environmental-effective types of contracts. A range of solutions proposes the implementation of more articulated schemes facilitated by the introduction of intermediaries. The objective of the intermediary is the reduction of transaction costs (e.g. administration and organisation costs reduced by means of a third party) or to shift the risks from land managers to private or public investors (e.g. the risk of not achieving results in result-based solutions). Examples of these solutions are e.g. the Environmental Impact Bond (EIB), the Forest Bank Program in USA (also included in the EU cases as FI1), or a range of local watershed trusts developed in Latin America. In the EIB, the intermediary is a hub between land managers (up-taking the measure), investors (buying green bonds) and public payer (granting interests to the investor if the result is achieved).

- *Improved solutions for direct/indirect monitoring of the results.* Various approaches try to “circumvent” one of the most important hurdles in result-based schemes: monitoring of results. Several examples and studies propose to collect a mix of direct and indirect information through different tools (e.g. auctions mixed with modelled results<sup>13</sup>), remote sensing combined with models, self-monitoring solutions, new “futuristic” options like the DNA barcoding. In this category, we also include the “joint liability” contract which combines collective and result-based solutions. The joint liability features a collective agreement where the payment is gauged on AECPGs results. The monitoring of results is however not based on a statistical sampling procedure that would not be feasible in terms of costs and efforts. Indeed, peculiar aspect of the collective agreement is to consider the result measured in one (or few) of the members of the collective as a direct proxy for the result of the whole collective.

- *Payment setting.* E.g. conditional credits. In this category, we include solutions that leverage on more attractive payment types that in some cases can achieve higher acceptability among farmers. These examples are more common in developing countries or, more in general, in areas featuring high environmental stakes (e.g. Amazonia) under threats of agricultural expansion. In general, the incentive regards loans or better credit conditions linked to environmental commitments or result achievement. These approaches leverage on reducing the credit costs for land managers that in some cases could be more attractive than incentives and facilitate the uptake of the environmental

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<sup>13</sup> Auctions are coupled with result-based approaches so to prioritise the areas that are less expensive (better auctions from farmers) but also more effective in potential result (assessed by an ecological model). This solution is in theory very effective (best match between costs and effectiveness) but not based on direct monitoring of results. As the other solutions based or mixed with models, these solutions are not “pure” result-based.

measure. In some cases, it could be considered an anticipated payment as the credit is granted based on the commitment, whereas the result achievement is verified afterwards.

This typology of contract improvement could help the categorization of new solutions. Indeed, the three streams could target different socio-economic contexts or even “farmers types”. For instance, the first solution type could be effective in cases of weak governance settings or when it is difficult to build-up a collective. The second group is useful when result-based solutions are considered acceptable by the farmers but the operational application of payments by result is complicate. Finally, the third solution type could stimulate the uptake of environmental schemes in specific contexts.

#### 4.1 Reasons for success

On the base of the analysis, here following are listed the main reasons for success or failure of the cases beyond the CONSOLE EU case studies that are considered most interesting for the improvement of EU contract solutions. The reasons for success are based on a qualitative analysis of the case descriptions and are not presented in order of importance<sup>14</sup>.

**Reason for success 1: reducing risks linked to results.** Focusing on variables that farmers perceive not under their control led to higher risk, pressure and “disutility” for farmers. For instance, the complexity to control and monitor results drove to a shift from result- to action-based schemes in the Florida Everglades Water scheme. On the contrary, focusing on long-term range of measurements (e.g. in a slot of several years in the Swiss pastures) ensured to limit the effect of adverse events on results. In the Environmental Impact Bond, the risk for farmers is shifted on private investors following a green bond scheme. That solution could be useful when farmers’ interest for result-based payments is low and privates’ interest for environmental results is high. However, in the Environmental Impact Bond the land manager essentially agrees to uptake an action-based scheme and all the awareness/education added values acknowledged to result-based solutions are no more relevant<sup>15</sup>.

**Reason for success 2: reduced costs for monitoring results.** In two cases, a high cost of monitoring was the reason that limited the scheme survival. On the contrary, in other cases relying on lower level information provided by farmers or volunteers resulted in higher efficacy. In a further example (joint liability), the cost of the information is reduced by reducing the sampling intensity. That could be particularly useful for “landscape level” species such as birds for instance that depend on landscape level practices and less on local on-farm practices.

**Reason for success 3: farmers’ interest and social revenue.** In a pilot scheme in UK the high interest of farmers in the target variable (earthworms) helped to involve and engage them in the measurement and payment by result schemes. In the *Prairies Fleuries* in France, the possibility for farmers to show their capacity to their peers was considered a reason for success (including the prize ceremony at the national agriculture show).

**Reason for success 4: resources.** Obviously, sufficient availability of funding is necessary. Successful examples include cases where available funds were present. For instance the Vittel Water scheme in France where the private water investor was able to offer high payments and even the purchase of land in the watershed. However, it is relevant to notice that the availability

<sup>14</sup> NB it is relevant to define the assessment of “reason for success”. In many cases, a solution was considered successful because the uptake by landholders was good or simply because the contract survived the setting up phase and was active after several years. In some cases, the implementation of the scheme was only in a pilot phase and the success is therefore potential. Success in terms of measured environmental result are very scarce also in the case of result-based solutions.

<sup>15</sup> The intermediary in the EIB is nonetheless appointed to manage and adapt the scheme to improve the effectiveness of land managers’ actions.



of resources alone is not sufficient. Resources are effective when employed to facilitate a shift towards more environment-friendly practices.

**Reason for success 5: additionality.** In some land tenure cases, the additionality was not a necessary condition. For instance, the biodiversity easements or the land fire abatement were granted for areas even though these were not probably objective of developments or agricultural expansion. These schemes are more similar to protection/preservation schemes.

**Reason for success 6: relying on existing collectives.** The possibility to rely on a well-established collective ensures better results. On the other hand, the building *ex-novo* of a collective is usually complicate. It is the case of the carnivore payment scheme for predators' cubs in Sweden. The payment was calculated on the expected disservice for the local Sami populations derived from the reindeer attacks of lynxes and wolverines. The Sami are traditionally organized in collectives (villages) and that eased the implementation of the scheme, monitoring of results and in general lower transaction costs.

**Reason for success 7: communication.** In the Florida Everglades, the scheme started as result based, but payer and farmers agreed to shift to action based solutions after the first years. The monitoring was considered too complicate and stochastic both by the farmers involved and the public agency. Even though shifting from result-based to action-based schemes can be considered a failure, without mutual communication and willingness from both parties the scheme would have been stopped. In this example, we stress how communication and ability to adapt to constraints is relevant for the implementation of successful schemes.

**Reason for success 8: payment setting.** In some cases, cost reduction is more attractive than higher revenues. That is the case of reducing interest rates or tax reductions conditional to some agreed environmental result. The cases following that approach are common in Latin America where credit access is sometimes a limitation. Therefore, the potential of this approach in EU needs to be considered carefully.

**Reason for success 9: the intermediary.** In many cases, the existence or ad-hoc creation of an intermediary was a necessary condition for ensuring the implementation of more articulated and effective contracts. That is the case of many watershed trusts charged for organizing and distributing the payments for improving water quality. That is also the case for the Environment Impact Bond where the intermediary is the pivot of the whole scheme.

## 5 Inspirations/Recommendations for improved contract solutions

CONSOLE analysed 58 contract solution case studies from within the EU. Of these 58 EU case studies, 26 were analysed in-depth. Moreover, 2 case studies came from outside the EU. A further 65 contract solutions beyond the set of CONSOLE EU case studies have been analysed via literature review. This chapter combines findings of the analysis of the EU case studies including the findings of the in-depth analysis and the review of contract solutions beyond case studies. General recommendations are provided, as well as recommendations concerning the specific types of contracts considered in CONSOLE.

The EU CONSOLE case study sample consist of 22 cases with collective implementation, 21 result-based, 15 value-chain and 10 land tenure contract solutions. The CONSOLE case studies revealed that these 4 contract types often occur in combinations: 1/3<sup>rd</sup> of the case studies combine elements of different contract types. Hereby, the combination of collective implementation with result-based features is the most frequent 'hybrid' in the sample, occurring 8 times. That was



confirmed in the literature review of cases beyond the case study sample. Collective agreements in particular were the most common found in combination with other scheme types.

CONSOLE considers 14 different AECPGs. All 14 AECPGs were directly addressed in at least one EU case study. The public good “(Farmland) biodiversity/habitats” is most frequently addressed (46 times). Following, though with a considerable gap, is “Landscape and scenery” and “Water quality”.

Noteworthy is the fact that almost  $\frac{3}{4}$  of the CONSOLE case studies are directed to a specific area. Regarding the contract relationships in the EU case studies, 5 relationships can be distinguished: Nearly half of the case study contracts analysed (46%) are public-private partnerships, more than  $\frac{1}{3}$ <sup>rd</sup> of the contracts are private-private partnerships (36%). 12% of the contract solutions represent three-way relationships between public-private-civil society, 4% represent relationships between civil society (NGO) and private sector and 2% (one case study) is established between two public parties. In 41% of the EU case studies, the financing party is the government with EU-funding (whereby two-thirds are part of the EU countries’ rural development programmes (RDPs)). Public money without EU funds is the source of funding in 19% of the contract solutions. Private funds account for 40% of the contract solutions, with market sector-oriented schemes contributing 37% and consumer-oriented schemes 3%. The incentive payments are the most commonly used payment mechanism (28) in the EU-case studies, followed by product price (19).

The review of cases beyond the EU case studies aimed at finding cases and solutions proposing alternative solutions and ideas for the Project. As noted above, the socioeconomic context is however different for the EU cases. In many cases, the government is not the financing party. International bodies like the World Bank are however commonly reported especially in payments for ecosystem services schemes in developing countries. Government-based schemes are typical in the cases from USA, Australia and China. Finally, a well-represented share of cases is implemented by NGOs including a range of examples where institutions financed by private citizens are developed (e.g. water trusts).

### **Targeting the contract solution to a specific region**

The EU case studies indicate that regional targeting can benefit the success of the contract solutions: in regional solutions the land managers/owners are aware of the region-specific environmental criticalities and problems. These environmental problems can be reflected either in economic losses or in perceivable changes to the landscape and can result in the land managers’/owners’ will to become active. The specific regional problem awareness might initiate processes where land managers/owners become active themselves (bottom-up approach) or where some regional actors initiate new solutions. Regional problem awareness can also lead to higher acceptance of contract solution already offered by the local or national government, as farmers/foresters/land managers/land owners understand their meaningfulness. *Lesson learned: Targeting the contracts to specific regions addresses regional criticalities and enhances the farmers’ and foresters’ interest and understanding of measures.*

### **Targeting the contracts to specific AECPGs**

Particularly the results of the in-depth studies showed that targeting measures to specific AECPGs improves the success of the contract solutions. AECPG targeting is particularly important in result-based approaches. In RB/RP solutions, excellent targeting can be reached, when conservation objectives are farm- and plot-individually elaborated. Additionality can be achieved by integrating tiered payment levels, providing financial incentives to the farmers to deliver the highest quality environmental product in their particular farm setting. In other contract types, excellent targeting is achieved by setting clear sets of objectives and measures, guaranteeing a high degree of relation between management measures and AECPG improvement. *Lesson*

*learned: Defining and setting clear AECPG targets, and designing management measures with high relation to AECPG improvement, enhances effectiveness.*

### **Integrating farmers' interests and knowledge**

It is beneficial to consider farmers' and foresters' knowledge, interests and priorities from the outset. The involvement of farmers/foresters can lead to a higher compatibility of the contractual measure with the business design of the land manager/landowner. Furthermore, early integration of the land managers/landowners can result in a higher acceptance of the contract solution and the management measures, as it enhances the feeling of equity and fairness (right to a say, co-construction, perceived fairness). In cases where joint elaboration of the contractual measures is not possible, it is important to ensure that the measures are targeted to the specificities of the prevalent agricultural/forestry system. *Lesson learned: Involving land-managers in target-setting and measure development leads to higher equity, compatibility with their businesses and can create win-win situations.*

### **Keeping it simple**

On the one hand, complex and cumbersome contract solutions are a barrier to farmers' participation. On the other hand, solutions which are easy to uptake for the farmers might at the same time not be sufficiently fine-tuned to improve the environment. Therefore, measures and results of the contract solutions should be clearly communicated. The link between the measures and their impact on the AECPG should be obvious and understandable. Farmers/foresters should feel able and skilled to implement the contractual requirements and measures, where suitable receiving specific advice or integrating intermediaries. A limited administrative burden for land managers/landowners is also mentioned as an advantage. *Lesson learned: A simple and clear design of the contract solution and a good comprehensibility can enhance participation.*

### **Striving for economic feasibility and attractiveness**

Successful contract solutions should be economically attractive for the land managers/-owners (win-win-situations). The payments should cover the costs for the provision of the AECPGs (e.g. opportunity costs, management costs, costs for fees, transaction costs). Most important, however, is that farmers perceive the payment to be fair. The literature review of extra-EU contract solutions revealed that more attractive payment settings and payment types can be a reason for success. For example, cost reduction or investment support might be more attractive than higher revenue. That is the case of reducing interest rates conditional to some agreed environmental result or tax reductions. *Lesson learned: Fair payment levels, win-win-situations and payment settings beyond subsidies are leverages for increased acceptance and demand of contracts.*

### **Enhancing social and cultural capital.**

In successful contract solutions the building of social and cultural capital is mentioned as a success factor in supplement to the economic aspect (especially in RB/RO and CO/COOP contracts). From the in-depth studies it became obvious, that enhancing social and cultural capital positively contributes particularly to the longevity of contract solutions and AECPG provision. A variety of measures and influences can have a positive effect in this respect, e.g. by creating a group identity through regular meetings, by education and training measures aimed at building up knowledge and awareness, as well as by supporting the self-perception of acting AECPG. *Lesson learned: Setting measures suited to enhance social and cultural capital can support the longevity of measures and AECPG provision.*



### **Fostering a shared vision, knowledge exchange and communication**

The EU case studies showed that a shared vision, targeted communication, meetings and cooperation between the contract parties and within the groups of involved actors/land managers, resulting in increased social interaction and a “feeling of belonging”, can lead to the development of social capital and trust. A case study from outside the EU showed that communication in contract solutions is also of particular relevance when a measure does not work as intended; in this case mutual communication and the will to adapt the contract solution helped to find a good way to continue the contract. *Lesson learned: Fostering communication and creating a common understanding and vision between the contracting parties about where they want to go (in terms of the environment, management and economic aspects) enhanced engagement and motivation.*

### **Ensuring equity and fairness**

High levels of equity and fairness are first and foremost achieved, if producers are involved in the discussion of contract arrangements, or if close and long-standing relationships exist between the contracting partners, e.g. between producers and retailers. Beneficial for perceived equity and fairness are reasonable, clear and acceptable contract conditions, and the same rules and basic prices for all partaking producers. In contractual solutions based on collective implementation or cooperation, a key aspect for equity and fairness is contribution to and equity of decision making, which can be implemented via steering groups or other institutional arrangements. *Lesson learned: Guaranteeing good levels of equity and fairness enhances acceptance, particularly in value-chain based solutions*

### **Using of familiar structures and existing relationships**

The possibility to rely on a well-established structures and relationships ensures better results, since it can ease the implementation of a contract solution, the monitoring of results and in general lower transaction costs. *Lesson learned: Building on already existing structures and relationships when designing contract solutions leads to easier implementation and cost reduction.*

### **Collective components positively impact on effectiveness of in the contract solutions.**

The integration of components of collaboration/collective implementation, or the full combination with collective agreements can be a condition for the success of other contract solution types. In some contract solutions it has been reported that they have been designed collectively after either the preliminary contract has failed or the desired environmental success has not been achieved. Collective elements can e.g. be supportive, if environmental objectives are addressed by result-based solutions, but can only be achieved on landscape level, so good results can only be reached if land managers cooperate. Also, in the case of monitoring of results, collective approaches such as a “joint liability”, can be interesting. The joint liability features a collective agreement where the payment is gauged on AECPGs results. The monitoring of results is however not based on a statistical sampling procedure which would not be feasible in terms of costs and efforts. Indeed, peculiar aspect of the collective agreement is to consider the result measured in one (or few) of the members of the collective as a direct proxy for the result of the whole collective. In value chain contracts, a collective component often takes the form of an association of farmers; this association increases the farmers’ negotiating power and can improve their position in the contract. *Lesson learned: Including components of collective agreements into contract solutions can enhance the success in terms of reaching AECPG objectives on level beyond farm/field/plot scale and in terms of generating social control and mutual motivation e.g. through joint liability.*

### **Ensuring financial resources to maintain the long-term success of the contract solutions**

In several case studies, the lack of future funding was mentioned as a threat for the contractual measure, especially in contract solutions which are based on subsidies and depend on public

funding. One option for ensuring longer-term funding and obtaining planning security is to consider a future incorporation of pilot contract solutions into e.g. the national agri-environment program. That means the integrability is already taken account of in the design process. In other case studies, the possibilities of generating private funds are examined. The involvement of private investors/companies is particularly an option if they are interested in the protection of a specific AECPG (water bottle manufacturers want to achieve high water quality in a certain area) or want to improve their image. It is also a good option if the contractual measure enables products to be sold with an environmental added value, thus enabling additional private funds to be attracted via the value chain. *Lesson learned: To activate market mechanisms (e.g. carbon market, value chain) can avoid the risk of expiring public funding.*

### **Adapting the complexity of contract solutions to the national/regional context and experience**

The review of extra EU and the analysis of the EU cases, revealed that different regions have different settings, levels of knowledge and experiences. Also it becomes obvious, that the different contract solutions types as well as their combination represent different levels of complexity. Enforcing highly complex contract solutions in areas where preconditions are not suited as regards e.g. knowledge, awareness, education, networks, etc, might not be effective. It seems that particularly collectives and result-based only work in “special” socioeconomic contexts where the conditions for these contracts to succeed exist: result-based solutions are in parts very sophisticated and complex, also in the development of the right indicators and in their measurement while collectives are hard to build where people are not used to work in collectives. Value chain contract solutions in contrast are effective mainly if consumers’ awareness is high, etc. As soon as the regional setting is not suited for the introduction of complex contract solutions, “easy” action driven solutions might be more effective. In these cases, a possible solution to implement more articulated and “complex” initiatives to improve the scheme environmental effectiveness is the development of intermediaries as described in the section 4. *Lesson learned: It becomes clear that result-based and collective solutions don’t fit in all socioeconomic and cultural contexts, as they often demand high levels of knowledge and collaborative skills. Value chain approaches are often only suited if consumers’ awareness is high.*

## **6 Outlook on further use of Deliverable 2.4 for scientific analyses and for practice**

### **Further scientific exploitation**

Operationally, Deliverable D2.4 will support task 1.2 and 1.3 towards the development of the operational framework to be developed in the CONSOLE project and tested with practitioners. Furthermore, the results of the scientific analyses from deliverable D2.4 inform particularly WP3 in the development of farmers and stakeholder survey on the feasibility of new contract solutions in tasks T3.2 and T3.3.

### **Use of the in-depth diagnosis for practitioners**

Agricultural and forest management has a strong influence on the provision of agri-environmental-climate public goods (AECPGs). Support provided under Europe’s Common Agricultural Policy (CAP) for more environment-friendly approaches in agriculture (but also for forestry) is increasingly discussed, as current agri-environmental measures are often unsatisfactory in terms of longevity, effectiveness and efficiency, and the deterioration of



ecosystem services and public good provision in Europe is ongoing (Pe'er et al., 2019<sup>16</sup>). Reacting on strong societal pressures, under the premise of the legislative proposal for the next CAP programming period and the recently published European Green Deal, it is therefore foreseen to pursue the path towards the provision of public goods in rural areas far stronger. Improvements may come from a flexible mix of promising new contract types, such as result-based payments or collective approaches, as well as by novel value chain strategies and land tenure contracts with environmental clauses.

The presented contract specifications and reasons for success and failure of ca. 120 case studies in and outside the EU details the knowledge of successful contract solutions. The diagnosis provides practitioners and programmers with information about the contract design and specifications in which promising and innovative contract solutions for the effective and lasting delivery of AECPG by agriculture and forestry can be set. The diagnosis serves as a knowledge basis for the development and design of future contract solutions to foster the provision of AECPGs by agriculture and forestry in the European Union and beyond.

### Dissemination

Deliverable D2.4 will be published on the webpage of the CONSOLE project ([www.console-project.eu](http://www.console-project.eu)) in the category “Resources”.

## 7 Acknowledgment

We thank all CONSOLE partners for carrying out the tasks of WP2 and delivering the data necessary to compose the report on WP2 lessons learned. Moreover, we thank all partners for reviewing the deliverable and supporting us with comments and amendments. Last but not least we thank all external experts and stakeholders for providing time and information and supporting the data collection process.



<sup>16</sup> Pe'er, G., Zinngrebe, Y., Moreira, F., Sirami, C., Schindler, S., Müller, R., ... Lakner, S. (2019). A greener path for the EU Common Agricultural Policy. Science, 365(6452), 449–451. doi: 440 <https://doi.org/10.1126/science.aax3146>.

## 8 Appendix

ID	Contract types*						AECPGs**													
	RB	RO	CO	COOP	VC	LT	Landscape and scenery	Recreational access/Health	Biodiversity / Habitats	Air quality	Soil quality	Carbon sequestration	Mitigation of GHG-emissions	Resilience to natural hazards	Rural viability and vitality	Cultural heritage	Quality/security of products	Animal health and welfare	Water quality	Water quantity
AT3	X																			
AT2		X																		
IT5		X																		
IRL2	X																			
DE1		X		X																
DE2	X				X															
DE4		X		X																
FI6		X																		
FI2		X	X			X														
FR2	X				X															
AT4	X																			
NL3	X				X	X														
NL4	X				X	X														
FR4	X				X															
IRL3	X		X																	
IRL1	X		X																	
BE3	X		X																	
BE4		X	X																	
LV3		X																		
FI3		X	X		X															
IT1			X																	
IT2			X																	
IT6			X																	
UK1			X																	
UK2			X																	
UK3			X																	
UK4			X																	
UK5			X																	
NL1			X																	
FR5	X		X																	
LV1			X																	
BE1		X	X																	
BE2				X																
DE6				X																



ID	Contract types*						AECPGs**													
	RB	RO	CO	COOP	VC	LT	Landscape and scenery	Recreational access/Health	Biodiversity / Habitats	Air quality	Soil quality	Carbon sequestration	Mitigation of GHG-emissions	Resilience to natural hazards	Rural viability and vitality	Cultural heritage	Quality/security of products	Animal health and welfare	Water quality	Water quantity
LV4				X																
PL1			X			X														
PL2			X			X														
NL2			X		X															
BG2					X															
BG3					X															
FR3					X															
AT1					X															
PL3					X															
PL4					X															
DE5					X															
IT4					X															
ES1					X															
ES2					X															
ES4					X															
BG4						X														
FI1			X		X	X														
FI4					X	X														
FI5			X		X	X														
FR1					X	X														
DE3					X	X														
IT3					X	X														
LV2					X	X														
BG1			OTHERS																	
IRL4			OTHERS																	
ES3			OTHERS																	

\*Contract types: RB: Result-based; RO: result-oriented contracts; CO: Collective implementation; COOP: cooperation; VC: Value chain-based contracts; LT: Land tenure-based contracts; Colour indicates that the contract type is involved as the main type and grey indicates that only one component is involved.

\*\*AECPGs: green box: Main AECPG objectives addressed by contract solution; yellow box: Additional AECPGs considered by the contract solution

Table 12: Case studies allocated to the contract types, and AECPGs