



Stimulating the social and environmental benefits of agriculture and forestry: An EU-based comparative analysis



Karlheinz Knickel^{a,b,c,*}, Anne Maréchal^d

^a Instituto de Ciências Agrárias e Ambientais Mediterrânicas (ICAAM), Universidade de Évora, Portugal

^b Institute for Rural Development Research (IfRLS), Frankfurt/M., Germany

^c RURALIS - Institute for Rural and Regional Research, Trondheim, Norway

^d Institute for European Environmental Policy (IEEP), London, UK

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ABSTRACT

Stimulating an effective provision of public goods and ecosystem services from Europe's farmland and forests is a critical challenge for policy-makers. In this paper we focus on three aspects of this challenge. Firstly, we explore the different drivers that influence the provision of public goods and ecosystem services by farming and forestry. Secondly, we identify the key motivational, institutional and socio-economic factors that can encourage the provision of these benefits. And thirdly, we examine the role of governance arrangements, of new forms of cooperation and of institutional change in enhancing the provision of public goods and ecosystem services.

The paper is based on a comparative analysis of 34 sectoral, multi-sectoral and territorial real-life case studies spread across 10 EU countries which were carried out as part of the EU-funded PEGASUS project. The analysis pays attention to the functional inter- and intra-relationships between farming and/or forestry, and the quantity and quality of public goods and ecosystem services that these activities provide. This analysis allowed us to identify the key factors that enhance the provision of social and environmental benefits. These include involving a wide range of actors in initiatives and actions, the establishment of appropriate governance arrangements in multi-actor partnerships, the key roles of coordination, cooperation and trust, and the importance of finding common interests and creating synergies and win–win situations. In most of the case studies, we found a complex interaction between different drivers, actors, motivations and interests. In general, we found that the provision of public goods and ecosystem services from farmland and forests is stimulated by policy interventions, planning and regulations that encourage, and support, the engagement of the private sector, and of civil society, in joint actions.

1. Introduction

1.1. The provision of public goods and ecosystem services from the EU's farmland and forests

The way farmland and forests in the EU are managed today is influenced by a variety of approaches taken to incentivise the provision of public goods and ecosystem services (Maréchal et al., 2016; Costanza et al., 2017). In terms of policies, one of the most important existing policy measures probably are the agri-environmental schemes under Pillar 2 of the Common Agricultural Policy that provide a financial

incentive to farmers to adopt more sustainable practices or to maintain agro-ecosystems that would otherwise be threatened or lost without such payments. Other less known drivers, mechanisms and initiatives aimed at enhancing the provision of environmental and social benefits.¹ include civil society initiatives or private sector projects and engagements. The focus in this paper is on these other initiatives, projects and actions that are less dependent upon regulations and publicly funded policy measures²

A wide spectrum of drivers and mechanisms often interact—sometimes reinforcing each other in a positive way, but in other cases working against each other or providing conflicting signals to

* Corresponding author at: Instituto de Ciências Agrárias e Ambientais Mediterrânicas (ICAAM), Universidade de Évora, Portugal.

E-mail address: karlheinz.knickel@gmail.com (K. Knickel).

¹ In this paper, we refer to “environmental and social benefits” to improve readability. Environmental and social benefits comprise all agriculture and forestry-related environmental and social public goods and/or ecosystem services which benefit society (Dwyer et al., 2015). Benefits obviously also comprise direct and indirect economic benefits. They are not in the centre of the analysis as they tend to predominate in relevant decision-making and are, as a result, generally not in short supply.

² In this paper, we use public policy in a comprehensive sense, i.e. comprising the different levels of policy frameworks, their interpretation and implementation at national and regional/local levels, including both regulatory and incentive measures, and their interplay.

land managers (Dwyer et al., 2015; Mantino et al., 2016). Generally, individual land management decisions are influenced by a complex and dynamic set of interacting drivers including regulations and policies operating at different levels, different forms of governance and institutional settings, private sector actions and market measures and drivers (Knickel et al., 2016, 2017). Real-life cases therefore provide a rich source of experience that can inform our thinking about how such schemes and initiatives can be made even more effective, multiplied and scaled-up. This in turn will inform and contribute to policy development, leading to more targeted measures and a more effective achievement of social and environmental goals in a cost-efficient way. Particular attention is paid to stimulating civil society action and private sector engagement for the achievement of social and environmental goals.

1.2. Research questions

In this paper, we explore how initiatives and actions, and mechanisms can become more effective, and how they can be multiplied and scaled-up. The underlying assumption is that a better understanding of what motivates, enables, fosters or inhibits initiatives and actions, and what makes actions effective in enhancing the provision of social and environmental benefits, will enable the design of more locally adapted and more effective policy measures.

We therefore focus on three main questions:

- How are the relationships between farming and forestry and the provision of environmental and social benefits being influenced by different drivers in policy and markets?
- What are the key motivational, institutional and socio-economic factors that can foster the provision of environmental and social benefits?
- What is the role of self-governance, of new forms of cooperation and of institutional change in enhancing the provision of environmental and social benefits?

The aim is to identify the main factors and conditions and the interplay between different factors and conditions which can enable or stimulate the formation and development of collective or other innovative action by farmers and foresters in relation to the provision of environmental and social benefits. The related analysis and discussion includes references to the diversity of actors involved, the important question of common interests, the examination of the functioning of multi-level and multi-actor governance frameworks, the responses to different drivers or initiatives in policy, planning, regulation and markets, the interactions with the private sector, the question of creating synergies and fostering win-win situations,³ and the importance of coordination, cooperation and trust.

The general approach taken in this paper is to move beyond the fragmented pieces of information and predominantly descriptive and qualitative data contained in the case study reports. This is done by defining five explanatory variables and four outcome variables that are then further analysed in respect of the possible interrelationships between them (see Section 2.2). The evidence gained from the 34 case studies on interrelationships is presented in the form of three overview tables, five scatter plots with extracts from the case study reports providing examples where necessary. The scatter plots provide a visual representation of the characteristics of the 34 cases and support the identification of patterns and interrelations. They are not intended to provide for an analysis in quantitative or statistical terms.

³ With win-win situations we refer to first, situations where environmental or social benefits are jointly delivered; and second, situations where diverse actors with differing and sometimes conflicting interests benefit from the joint action or initiative.

2. Empirical basis and analytical framework

2.1. Data basis and methodology

A central component of the EU-funded PEGASUS project is a set of carefully selected sectoral, multi-sectoral and territorial case studies. The case studies were carried out in four steps. The rapid appraisals carried out in Steps 1 and 2 aimed at a broader coverage and were carried out in 34 case studies in 10 EU countries. Steps 3 and 4 focussed on more in-depth analyses of a subset of 12 case studies.

All case study reports and further documents are available for download from the project website: <http://pegasus.ieep.eu/> and specifically <http://pegasus.ieep.eu/case-studies/introduction>.

The selection of case studies has focused on initiatives and mechanisms that aim to enhance the provision of environmental and social benefits. Spatial scales range from very local initiatives to countrywide actions. Annex 1 contains an overview table with all 34 case studies.

In the case studies, a transdisciplinary multi-method approach was used. The methodology builds on the concept of social-ecological systems. This approach was chosen because it is holistic and allows an analysis of multiple interrelations and interactions between drivers, actors, management practices and the outcomes delivered. Teams used an adaptation of the social-ecological system approach developed by Ostrom (2005), Folke (2006), Ostrom and Cox (2010) and McGinnis and Ostrom (2014). Attention was paid to understanding the interrelations between different system components (e.g. actors, governance regimes, resources, drivers and action situations).

Throughout the research, an effective interaction with practitioner partners and stakeholders was considered very important. The analyses should be seen as exploratory. Steps 1–2 of the case study analysis encompassed the identification of the key environmental and social benefits, a first appraisal of their appreciation, the different drivers and motivations as well as the conditions for their enhanced provision. The aim of Steps 3–4 was to deepen the analysis in those case studies and thematic fields that seemed particularly interesting. We aspired at further improving our understanding of the mechanisms (and related strategies and/or policies), (collective) actions and governance arrangements that are used to enhance the provision of public goods and ecosystem services. The 12 in-depth case studies included local associations or partnerships, private sector-driven initiatives, mixed public-private arrangements and more traditional agri-environmental schemes.

Common analytical questions and reporting guidelines were provided to ensure a common structure was followed in the approach of the implementation of the case studies and to facilitate comparative analyses. The guidelines encouraged authors of case study reports to, wherever possible, provide empirical evidence to support their narrative and to substantiate all judgements with explicit references to methods and sources of data. The most important sources of information were local, regional or national data sets, and other relevant secondary sources (e.g. scientific studies, policy documents, media and other reporting, etc.) complemented by interviews with key individuals as well as triangulation with local environmental and socio-economic data. Expert and stakeholder interviews, workshops and/or focus groups were used to ascertain findings. Research partners were given sufficient degrees of freedom for an adjustment of the basic methodological framework to the actual situation in each case study, so that actions are acceptable and appropriate to local conditions. Each case study report includes a dedicated section listing all references and data sources.

2.2. Analytical framework

The nine variables included in the analysis comprise five explanatory variables (a.-e.) and four outcome variables (f.-i.):

Table 1

Key drivers that influence farming and forestry and the provision of environmental and social benefits in the PEGASUS case studies.
Source: Own compilation based on case study reports.

Drivers of change in land use and benefits provision	Strategies implemented (case studies)
<ul style="list-style-type: none"> ● Pressure on producer prices and insufficient relative profitability of farming ● Demand for higher product quality including for a higher process quality ● Demand for new goods and services ● Environmental regulation, spatial planning ● Payments for environmental services ● Technological change (incl. ICT, IoT, biotechnology) ● Lack of knowledge and information 	<ul style="list-style-type: none"> ● Establishing higher value-added chain (AT1, DE2, EE1, EE2, IT4, NL1, SI1) ● Diversifying into different goods and services (IT2, UK2, UK3, UK4) ● Improving production systems (IT1, NL4, PT3, UK1) ● Establishing higher value-added chain and strategic reorientation (AT1, DE2, EE1, EE2, FR2, IT4, NL1, NL2, SI1) ● Restructuring of chain and/or entry of new chain actor(s) (DE3, EE2, IT2, NL2, SI1) ● Improving production systems (IT1, NL4) ● Providing new services (UK4) ● Creating complementary offers (AT2, IT3, IT4) ● Adaptation of farming/forestry practices, shifting to another farming/forestry system (AT2, AT3, CZ3, DE1, FR3, IT3, NL3, SI2, SI3, SI4, UK1) ● Diversifying into different goods and services (AT2, DE1) ● Adaptation of farming/forestry practices, shifting to another farming/forestry system (CZ1, CZ2, SI3) ● Enhancing value-chains (EE2, IT1, NL4) ● Diversifying into different goods and services (DE3) ● Improving production systems (IT1, NL4, PT3, UK1) ● Improving information systems (IT1, NL4) ● Fostering collective learning (EE2, NL4, UK1) ● Use of coaching, facilitation, etc. (DE2, NL4, UK1)

- Diversity of actors involved ('multiactor')
- Importance of policy, regulation or the state as an actor
- Importance of the private sector
- Importance of civil society actors or associations
- Degree of formalisation of the initiative/approach
- Effectiveness in enhancing the provision of social and/or environmental benefits
- (Potential) scale of the initiative/approach
- Innovativeness of the initiative/approach
- Effectiveness in creating synergies

Using these nine variables and a Likert-type scale and scoring, a profile for each case was compiled ex-post. The Likert-type scale and scoring included three levels for all variables: 0 (not significant), +1 (somewhat positive/pronounced), and +2 (significantly positive/very pronounced). Only for variable b) "Importance of policy, regulation or the state as an actor" also a fourth score of -1 (negative impact) was possible.

The actual scoring was based on the qualitative and quantitative information presented in each case study report and best professional judgements of the authors of this paper. In addition, each initiative, approach or action was broadly characterized as:

- driven primarily by private sector economic interests; or
- featuring a strong presence of wider societal interests often in combination with civil society initiatives, a diversity of actors and diverse forms of governance; or
- presenting a predominance of policy, institutional or regulatory drivers or features.

Various combinations of these three basic features were found.

Further documents related to the comparative analysis can be downloaded from the project website: <http://pegasus.ieep.eu/resources-list>

3. Analysis and discussion

The analysis and discussion of case study results is structured around the three main research questions referred to before:

- Drivers and motivations affecting the relationships between farming and forestry and the provision of environmental and social benefits.
- The influence of institutional and socio-economic factors on benefits

provision.

- The role of governance arrangements and institutional change in benefits provision.

In a fourth section, we will look across the three themes, identify interdependencies, strategies and the fostering of synergies that seem critically important for the effectiveness of initiatives and actions – also in terms of targeting policy interventions.

3.1. The drivers and motivations that affect the relationships between land use and the provision of benefits

To kick off the analysis and discussion, we want to first ask how the relationships between farming and forestry and the provision of environmental and social benefits are being influenced by different actors, interests and motivations in our case studies.

Key actors always include the land users and/or owners, often the related downstream businesses like processors or retailers, as well as civil society organisations, sometimes administrations, service providers and consumers. The private sector played a significantly positive role in 10 out of the 34 cases (AT1, DE3, EE1, EE2, FR2, IT1, IT2, NL1, NL2 and NL4; see [Annex 1](#)), and a somewhat positive role in another 11 cases. These case studies show that shifting towards more socially and ecologically resilient systems can sometimes be a source of market opportunities. Civil society actors, associations and the related actions predominated in six cases (CZ2, DE2, IT4, PT2, UK2 and UK4), and played a lesser but still significant role in another 15 cases.

Overall, there is overlap and almost always a complex interplay of varied factors within each case study. There is therefore a crucial role in assessing the interrelations of factors and their complementary or conflicting effects. Generally, we find that the triggers for the set-up of initiatives or actions aimed at the provision of environmental and social benefits often can be related to the context-specific expression of market forces, societal trends and demands as well as the particular policy environment. Economic pressures are the most commonly cited drivers for action in the case studies. In many cases, farming and forestry are at risk both from economic rationalisation and intensification. This in turn threatens the character of the particular landscape, levels of biodiversity and sometimes the overall rural vitality of the area where farming is the key employment sector.

Most often the close connections between social, environmental and economic factors proved difficult to disentangle and could not be dealt with separately. [Table 1](#) provides an overview of the key drivers

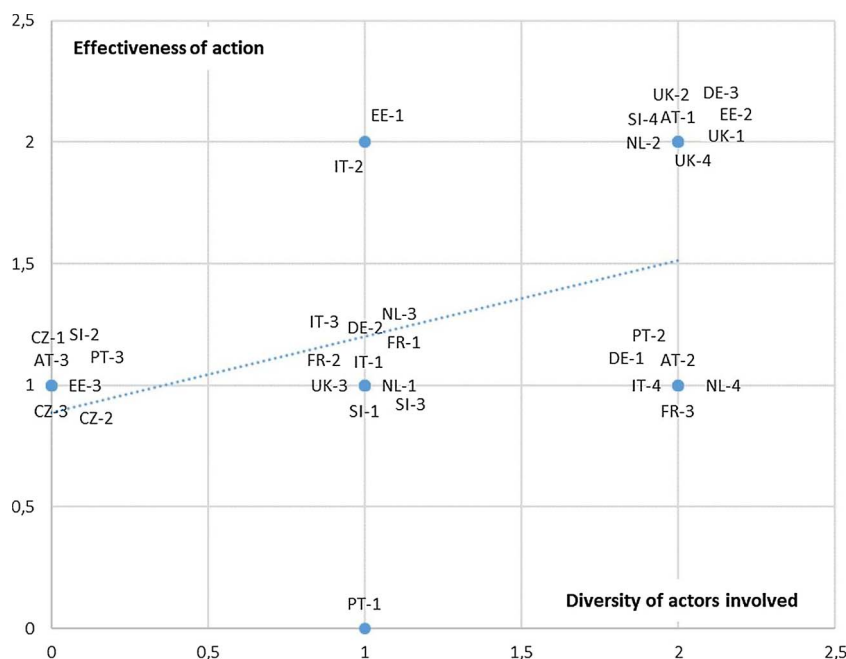


Fig. 1. Relationship between the diversity of actors involved in the studied initiatives and their effectiveness^a.

^aNote: As explained earlier was the scoring of each case based on discrete scores. The partial scores only reflect the standard scatter plot diagrams used for visualisation. This applies also to all subsequent diagrams.

influencing farming and forestry and the provision of the associated environmental and social benefits. Note that in each single case multiple drivers are possible, and that some of the drivers are interrelated.

The information provided in the table shows the main drivers that we could identify. As can be seen, several of them can be related to the direct and indirect influences of changes in markets. Another main influence – both direct and indirect – is policy.

3.2. Other factors which can foster benefits provision

In this section, we identify the key motivational, institutional and socio-economic factors which have fostered benefits provision in our case studies. The different areas discussed are:

- The diversity of actors engaged in an initiative
- The influence that the innovativeness of actors has on the effectiveness of initiatives
- The role of public policy
- The interplay between these different factors

3.2.1. Engaging a wide range of actors in initiatives

A productive interaction of a very diverse range of actors (‘multi-actor’) was found to be a key success factor in 14 cases (AT1, AT2, DE1, DE3, EE2, FR3, IT4, NL2, NL4, PT2, SI4, UK1, UK2 and UK4). In another 13 cases, a certain diversity of actors was found to correlate with the success of the collective initiative. This means that in most cases having a diversity of stakeholders engaged has played a positive role. This may be due to the increased ability to jointly identify and define the issue affecting them and to pursue common interests through joint action.

Fig. 1 provides an analysis of the relationship between the diversity of actors involved in an initiative (in terms of actor composition) and its effectiveness⁴ in enhancing the provision of social and environmental benefits. The data indicate that overall, there is a tendency that more diverse groups and initiatives are more effective. Amongst the PE-GASUS case studies, examples of particularly diverse and particularly

effective initiatives include: the organic farming milk label in the Austrian mountain Murau region (AT1), the Regionalwert AG Freiburg initiative in Germany (DE3), the Estonian initiative to market local organic, artisan and farm food (EE1), the grass-fed organic beef label in Estonia (EE2), the production of niche and organic bergamot products in Calabria (IT2), the farmer, beer and water initiative on sustainable agriculture and sourcing in North-Brabant in the Netherlands (NL2), the nature conservation initiative enabling social security in farming in Središče ob Dravi in Slovenia (SI4) and the WILD river catchment management initiative in the UK (UK1).

We also examined the extent to which the engagement of civil society groups and of the private sector can be mutually reinforcing. Overall, the results showed that initiatives led by either of these groups does *not* depend on the other to be effective. However, civil society-driven initiatives can become more powerful in enhancing benefits provision if they manage to involve the private sector (UK2 and UK4). Similarly, we found that private sector-driven actions can become more effective by engaging with civil society groups (AT1, DE3, EE2 and NL2).

Regarding the role of the private sector, we found that just one third of the 34 initiatives were private sector-driven, and that just over half of those were also very effective in providing environmental and social benefits through agriculture and forestry (AT1, DE3, EE1, EE2, IT2 and NL2). The factors that motivate the engagement of private actors were found in these case studies to be mainly about enhanced profitability but also about improving public image and brand reputation. The two factors are linked as a responsible business image plays a role in obtaining a price premium and maintaining credibility with consumers.

3.2.2. Actors’ innovative capacity positively influences the effectiveness of initiatives

The innovativeness of actors – whether in the private sector, in civil society associations, or administration/institutional bodies – is another important factor that can contribute to effectiveness. From all single factors, innovativeness was the one that had the strongest positive effect. Stimulating the provision of environmental and social benefits from farmland and forests in the EU context which is broadly characterised by increasing economic pressures and reduced public budgets

⁴ See Section 2 for an explanation of the methodology used to measure ‘effectiveness’.

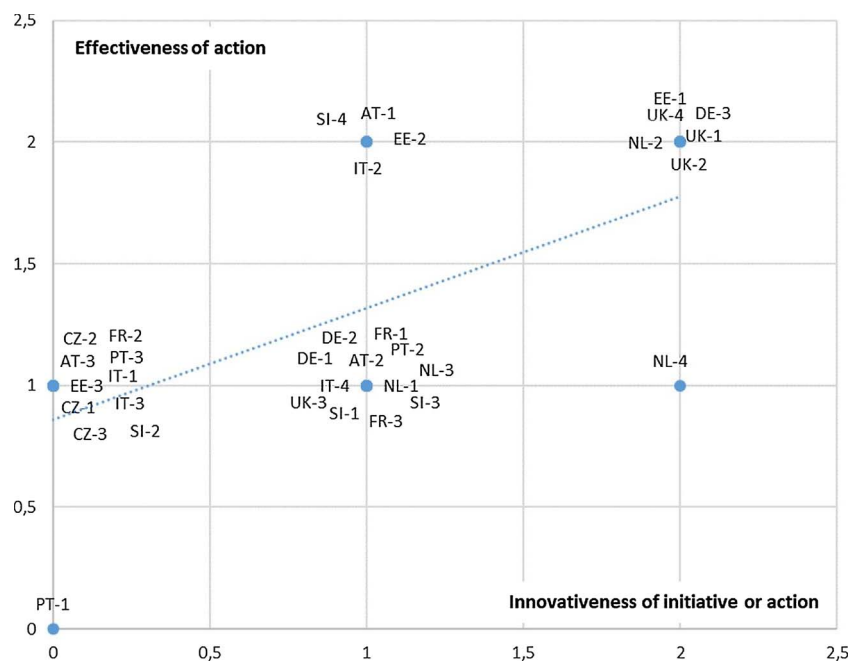


Fig. 2. Relationship between the innovativeness of initiatives and actions, and their effectiveness.

requires actors to be innovative. Yet, designing innovative measures, strategies and mechanisms that are significantly different from those that have already been applied somewhere is a challenge. From our 34 cases, 7 cases, i.e. a fifth, can be described as innovative initiatives. They include the following: *Regionalwert AG* which is a citizen's shareholder corporation facilitating access to shareholders' capital for organic farms and businesses (DE3), the marketing of local organic, artisan and farm food in a shop-in-shop system, partly in large supermarkets (EE1), the "farmer, beer and water" initiative in the Netherlands where a brewery works together with farmers, the water agency and municipalities to promote sustainable agriculture to ensure water quality (NL2), the *Skylark* foundation where a farmers' association promotes sustainable arable farming in innovative associations with knowledge brokers and industry (NL4), the WILD river catchment management initiative in the UK which works with farmers and communities to improve water management (UK1), the "Hope Farm" in the UK where an NGO aims to demonstrate that environmental sustainability can go hand in hand with viable intensive arable farm production (UK2) and finally, the Care farms network which seeks health and social inclusion goals while contributing to rural vitality (UK4). Fig. 2 provides an overview.

The *Regionalwert AG* (DE3) case provides a good illustration of what innovation can be about. Its objectives encompass: (a) the provision of capital to build a regional, organic and sustainable agriculture sector; (b) creating an instrument facilitating farm succession; (c) enabling citizens to actively engage in the regional agriculture sector; (d) the provision of capital as key instrument in the development of sustainable businesses; and (e) adding value to agriculture's social-ecological achievements. The initiative is a citizens' response to what they perceive as insufficient public policies, particularly those focusing on farm succession, modernization (investment) or collaboration, but also to other regulations and policies aiming to reduce negative environmental impacts of farming (Sterly and Mathias, 2016).

3.2.3. Public policy is often not central yet it can provide clear signals and continuity

Regulation is often highlighted as a driver for action, whereas funding instruments are generally used to enable initiatives and actions to develop. Most cases show that policy does not need to lead or provide

a complete financing of actions, and that often it is sufficient to just provide clear signals, continuity and investment support, and finance facilitation, to achieve the desired improvement. This was found to be true in all 34 case studies in PEGASUS. There was none where policy was the single most important driver. In 23 cases, policy played a supportive role, often providing some basic funding for specific land management going in the same direction as what the initiative seeks to protect or use as an opportunity to develop. In six cases, policies tended to be counterproductive, that is working at least partly against the provision of social and/or environmental benefits (FR3, PT1, PT2, PT3, SI1, SI3).

Fig. 3 provides an interesting overview of the interplay between public policies and the private sector in the enhancement of the provision of social and environmental benefits (effectiveness). The main observations from the 34 cases are that: governmental engagement and public policy was never the single most decisive factor (maximum score is 1). In several cases, policy has rather had a detrimental effect. Examples include the three Portuguese cases (PT1, PT2 and PT3), two Slovenian cases (SI1, SI3) and the French *Parc National des Cévennes* case (FR3). In all these cases, some areas of the public policies in place had a negative impact on the provision of environmental and social benefits either by disadvantaging the traditional low-intensity production systems in the case study areas or by fostering complacency for farmers to adapt and develop. The most positive finding is that in nine cases where effectiveness was high, some public policies had an important supportive role (AT1, EE1, EE2, IT2, NL2, SI4, UK1, UK2 and UK4). Only the German *Regionalwert AG* case (DE3) was assessed as being 'very effective' while being largely without government support.

A positive example of the role of public policy is provided in the Austrian case study on an organic haymilk scheme in the mountain Murau region (AT1). Mountain farming has a key role in safeguarding sensitive ecosystems through the preservation of multifunctional landscapes and the general living environment, and is therefore fundamental to the tourism sector and to society at large. The successful implementation of the organic haymilk scheme was very effectively backed through public policy in the form of various measures from the Agri-environmental Programme, the Area of Natural Constraint Scheme as well as the support provided for certification and marketing (Nigmann et al., 2017).

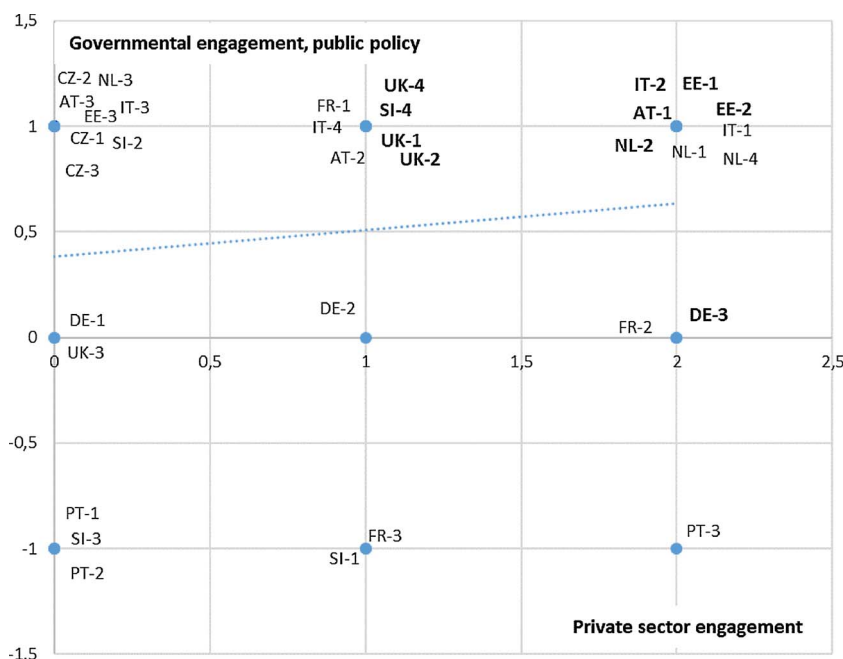


Fig. 3. Relationship between the role of public policies and private sector engagement in the effectiveness of benefits provision (cases that are particularly effective are in bold).

3.2.4. How different factors mutually reinforce each other

In almost all case studies, there are several factors that contribute to effectiveness. Table 2 provides an overview of the single most important factors. Note that the factors listed can reinforce each other, or, as observed in few cases, can also have antagonistic effects. Where several factors reinforce each other, then often the initiatives tend to be particularly active and often effective. The single most important factors fostering benefits provision seemed to be: the creation of synergies, and win–win situations (we will present an in-depth analysis on this in Section 3.4); the implementation of appropriate (trust-based) governance arrangements; the creativity of actors; private sector involvement, profit-seeking; effective communication, and the entrepreneurial spirit of actors (for a more comprehensive discussion of these influences with many concrete examples see in particular Knickel et al., 2016, 2017).

3.3. The role of governance mechanisms and institutional change

In this section, we will explore the role that governance arrangements, new forms of cooperation and institutional change have played

Table 2

Key motivational, institutional and socio-economic factors which have fostered benefits provision.

Source: Own compilation based on case study reports.

Most important factors fostering benefits provision	Typical case studies
(1) Creation of synergies, and win-win	AT1, DE2, EE1, IT2, IT4, NL2, SI4, UK2
(2) Appropriate (trust-based) governance arrangements	DE1, EE2, NL4, UK1, UK3
(3) Creativity of actors	DE3, EE1, EE2, IT4, UK1
(4) Private sector involvement, profit-seeking	EE2, FR2, IT1, NL2, PT3
(5) Effective communication	AT1, DE3, EE1, EE2, UK2
(6) Entrepreneurial spirit of actors	AT1, EE1, NL1, NL2
(7) Common interests	AT2, DE3, UK4
(8) Targeted support and/or regulatory measures	EE1, NL3
(9) External and internal factors mutually reinforcing each other	UK4, and many more

in our case studies in enhancing the provision of environmental and social benefits. Emphasis was on identifying innovative governance arrangements, systems and mechanisms.

Table 3 provides an overview of observed forms of governance, forms of cooperation and their typical strengths and weaknesses. Note that in each single case multiple mechanisms, governance arrangements and institutional settings and factors can be interacting.

We also checked the role that the formalisation of governance arrangements plays. From the 34 cases, we found that in only nine rather formalised arrangements and rules played a more significant role (AT1, AT3, EE2, IT1, IT2, NL1, NL2, NL4 and UK4).

3.4. The interdependencies between these different factors and the fostering of synergies

In this section, we look across the three themes and identify interdependencies that seem critically important, notably in terms of policy signals and interventions.

Multiple benefits and synergies tend to be a common phenomenon in the case studies. Fig. 4 presents the 34 cases in terms of the weight that is given to creating synergies and the effectiveness of the initiative or action.

As expected we found that the fostering and/or achieving of synergies between different activities is a major factor that contributes significantly to benefits provision. Overall, we found that the creation of synergies played a very important and positive role in 15 cases, and a somewhat positive role in another 14 cases. In only five cases, the creation of synergies played a somewhat less central role, i.e. the initiatives focused on providing mainly one specific benefit such as biodiversity (amphibians and birds) on wet meadows in the NGO initiative in Czech Republic (although other benefits derived from this; CZ2) (AT3, CZ2, CZ3, EE3, PT3).

Many case studies which had an intentional focus on synergies creation are also often associated with an effective provision of social and environmental benefits. These include: the organic farming milk label in the Austrian mountain Murau region (AT1), the Regionalwert

Table 3
Observed forms of governance, forms of cooperation and their typical strengths and weaknesses.
Source: Own compilation based on case study reports.

Organisational pattern (case studies)	Strengths and weaknesses
(1) Informal multi-actor networks with relatively little formalisation (EE1, FR1, IT4, PT1, PT2)	+ flexibility and openness + potential for learning and continuous improvement – often limited effectiveness
(2) Initiative or action is directed by a dedicated authority that is responsible for information and fostering networking and mutually beneficial relationships between different activities and actors (AT2, DE1, SI2, UK1)	+ overall responsibility and steering is clearly located – the quality of the work of the organisational body/authority and of processes determine its effectiveness – often not very effective/dynamic
(3) Value-chain driven and governed by processor or retailer (AT1, EE2, FR2, IT1, NL1)	+ entrepreneurial skills of key actors + strong motivation of key actors + potential for learning and continuous improvement – social and environmental goals tend to be secondary
(4) Civil society initiative and/or association, largely non-governmental and self-determined (CZ2, DE2, DE3, IT2, SI4, UK4)	+ social and environmental goals tend to be the main driver + flexibility and openness + potential for learning and continuous improvement – often lack of organisational/management skills of key actors and of an entrepreneurial attitude
(5) Policy- or state-driven action (AT2, CZ1, PT3, EE3)	+ public support measures can be a critical success factor in many initiatives/actions – often lack of targeting and integration with civil society and/or private sector activities – risk of subsidy dependence
(6) Spatial planning, regulation-driven, directed and controlled action (CZ3, FR3, IT3, NL3)	+ good level of goals achievement if implemented well + strong incentive for specific enhancements – limited flexibility and cost-efficiency in reaching goals – often not very effective/dynamic
(7) Land user-managed action in liaison with relevant up- and downstream actors, knowledge brokers, etc. (NL2, NL4, SI1, SI3, UK2)	+ entrepreneurial skills of key actors + potential for learning and continuous improvement – social and environmental goals tend to be secondary

AG Freiburg initiative in Germany (DE3), the Estonian initiative to market local organic, artisan and farm food (EE1), the grass-fed organic beef label in Estonia (EE2), the production of niche and organic bergamot products in Calabria (IT2), the farmer, beer and water initiative on sustainable agriculture and sourcing in North-Brabant in the

Netherlands (NL2), the nature conservation initiative enabling social security in farming in Središče ob Dravi in Slovenia (SI4) and the WILD river catchment management initiative in the UK (UK1).

The Italian case study on the production of niche and organic bergamot products (IT2) provides a good illustrative example of the

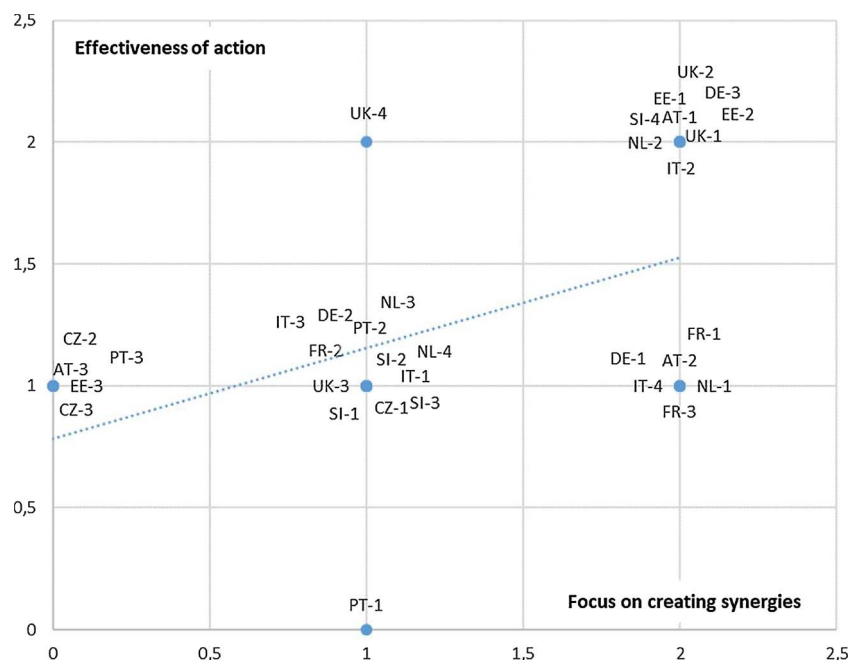


Fig. 4. Relationship between the focus on creating synergies and effectiveness.

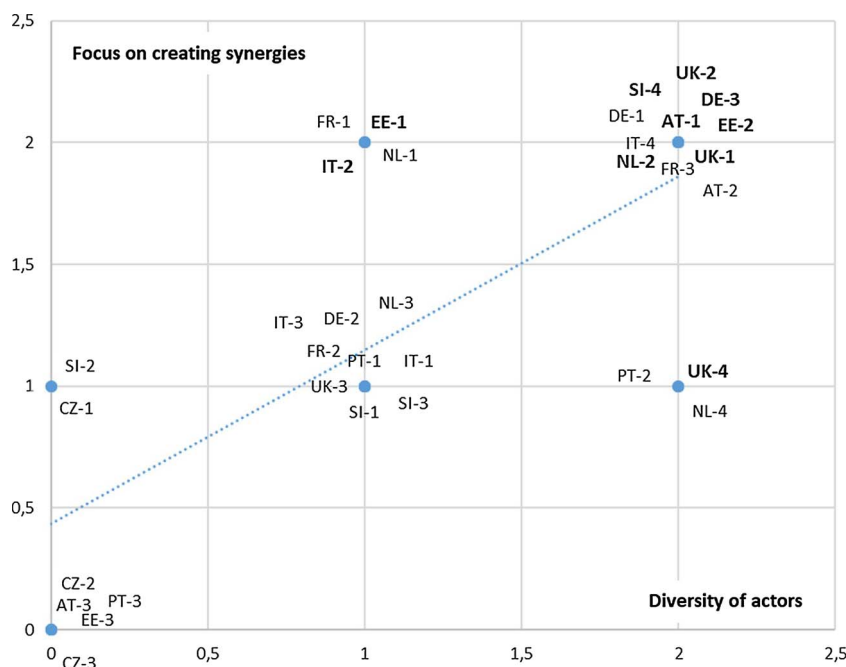


Fig. 5. Relationship between the diversity of initiatives, their focus on creating synergies, and their effectiveness (cases that are particularly effective are in bold).

creation of synergies. Over 90% of the global production of bergamot comes from the Reggio Calabria province in south Italy, which is the study area. Bergamot is a citrus fruit used almost exclusively as a fragrance component or flavour additive and thus is a high-value product. The cultivation was introduced in this area for the first time in 1740 and since then it was rooted in the regional cultural identity of population living in the area. The continuation of bergamot cultivation enables the maintenance of a traditional, cultural landscape, which is part of the image and identity of the area and contributes to biodiversity and rural vitality. The typical landscape is strongly appreciated by tourists and particularly eco-tourism which has developed in the area since the second half of 1990s. Local processing and products provide a further source of income in the local economy (Mantino et al., 2016).

The following Fig. 5 goes further in exploring the combined effect of the diversity of the initiative in actor composition and of an active pursuing of synergies and win-win situations. In particular, the cluster of cases in the upper right corner demonstrates how effective combinations of success factors can be. Most case studies in this cluster also feature a very effective enhancement of the provision of social and environmental benefits. This cluster encompasses seven initiatives: Organic farming label in the mountain Murau region (AT1), *Regionalwert AG* (DE3), Grass-fed organic beef (EE2), Farmer, beer and water in North-Brabant province (NL2), WILD river catchment management initiative (UK1), Hope Farm in the east of England (UK2), and, probably more in terms of potential enhancement, Nature conservation enabling social security in farming in *Središče ob Dravi* (SI4).

EE1, IT2 and UK4 demonstrate that an initiative can be very effective even if not the range of actors involved is not very diverse or if there is no particular focus on creating synergies.

The Estonian case study on grass-fed organic beef (EE2) provides an illustration of the advantages of bringing a mixed group of actors together that pursues a common goal for all involved. The private *Liivimaa Lihaveis* initiative uses a whole chain approach to market high quality organic grass-fed beef, to offer a better price for producers and

to maintain biodiversity-rich semi-natural grasslands. The initiative includes about 3,000 ha of valuable semi-natural habitats located mainly in Natura 2000 areas representing about 10% of the total area of managed semi-natural habitats in Estonia. Around 50% of the produce is currently exported. Part of the success of the initiative is the co-operation with more than 20 recognised Estonian, Latvian and Swedish chefs to boost domestic consumption as well as with nature conservation bodies. The beef producers involved see joint action and co-operation as central in improving the current system of production and processing (Peepson and Mikk, 2017).

4. Conclusions

4.1. Findings related to the three main research questions

Different drivers in policy and markets have a significant influence on the relationships between farming and forestry and the provision of environmental and social benefits.

Generally, policy alone was not sufficient to trigger or sustain actions in most of the cases examined. Policy often has a supporting role, which sometimes is not critical but can still be a central aspect of the initiatives, e.g. where public financial incentives such as agri-environment-climate measures provides the background support necessary to maintain the land management activities on which initiatives depend.

The private sector and civil society associations can play a very important role in enhancing the provision of the social, economic and environmental benefits associated with agriculture and forestry. Private sector and particularly civil society-led initiatives often need simple, frequently already existing, forms of support from public policies but in a way that is accessible and adapted to their needs. This support could be in the form of readily available, easily understandable and target group-oriented information, funding of training, coaching and facilitation services, the provision of financial planning and investment support, the funding of innovation processes and experimentation,

supportive governmental action encouraging initiatives to emerge, e.g. official information campaigns that emphasise the connections between farming systems, food consumption and rural amenities or between forestry practices and ecosystem services provision, and accessible.

The key motivational and institutional factors which have fostered the relationships between farming and forestry and the provision of environmental and social benefits in our case studies include:

- the diversity of the actors engaging in an initiative or action;
- the innovativeness of the actors; and,
- a carefully tailored, supportive role of the state and of public policies.

The main socio-economic factors identified are:

- private sector involvement and profit-seeking,
- the entrepreneurial spirit of actors; and,
- the question of common interests.

The involvement of, and interactions between, a variety of actors with different interests, competences, experiences and positions is more likely to come up with more creative and more sustainable solutions. Multiactor initiatives and actions also tend to be more effective as they unite different interests and motivations. The environmental co-operatives approach that has been used in The Netherlands in particular for many years (see for example [Wiskerke et al., 2003](#); [OECD, 2013](#)) is in line with this finding.

The important role of self-governance, of new forms of cooperation and of institutional change in enhancing the provision of environmental and social benefits is expressed in a number of ways: Ensuring all actors involved develop a sense of ownership in the initiative and actively engage are other important factors of effectiveness. The creation of synergies and fostering of win–win situations also tend to make initiatives and actions more effective. Appropriate governance arrangements and forms of cooperation are another success factor in our case studies in enhancing the provision of environmental and social benefits.

Policy that can be used in a flexible way and be embedded into private sector- or civil society-driven initiatives can be more effective and, presumably, have a more lasting impact. It follows that to effectively target and adapt policies, a very good understanding of private sector and/or civil society initiatives and actions is needed. The aim must be to align policy support with the social, cultural and economic dynamics of territories and supply chains. A precondition to this, however, would be to remove any policy signals and policy-related distortions in markets which go against the societal interest. Incoherent or conflicting signals have in several cases counteracted the provision of environmental and social goods and services. Effective policy interventions are those that motivate, enable and support private sector and/or civil society initiatives.

4.2. Emerging questions for future research and analysis

The exploration of interdependencies presented in this paper only provides an entry point into further analyses. Based on the analyses presented in this paper, we identify some research questions that we think ought to be pursued in further analyses.

- We should still explore in more detail whether less formalised structures and approaches can still be very effective in smaller initiatives. Also scale enlargement and its implications for governance structures and management systems need further analysis. Often during the growth of an initiative, it is necessary to adopt more formalised structures and procedures to remain effective.
- More analysis is still needed on the factors that influence the dynamic interplay between the commercial/private, public and voluntary aspects of the initiatives. How do the institutional and governance arrangements in place influence, help or undermine private, public, voluntary interaction? The success of the interactions depends strongly on local governance structures as well as the role of local actors and their capacity to mobilise different forms of collective action. Understanding what factors enable particular actions to be taken is therefore important.
- In further analyses, we will need to ask how optimal the different approaches that we found are, what we know about alternatives, and whether other approaches have failed. More attention should also be paid to identifying and exploring challenges, costs, conflicts and failings in the different case studies.
- In consideration of a significant number of indications of problematic effects of policies, we need to go further in asking how different policies interact with the initiatives. Related to this we should ask how to trigger and scale-up desirable developments? These analyses should pay attention to the key drivers in current policy debates. The growing acknowledgement of the benefits of programming (see also [Cork 2.0](#)) implies a shift towards a more dominant multi-annual, programmed model for all payments, and this provides an entry point for our findings.

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Annex 1. Overview of all 34 cases⁵

#	Case	Key social and environmental benefits
AT1	Organic farming label in the mountain Murau region	Species and habitats, Landscape character and cultural heritage
AT2	S-E-S in the Biosphere Reserve Lungau (Salzburg region)	Species and habitats, Landscape character and cultural heritage, Rural vitality
AT3	Mountain forestry and ESBO provision in mountain area Pinzgau	Flood protection, Soil protection, Rural vitality
CZ1	Biodiversity rich meadows payment in CZ	Species and habitats
CZ2	Birds and amphibians support on wet meadows	Species and habitats, Educational activities, Landscape character and cultural heritage
CZ3	Forest restoration in the Liberec region: guided succession	Soil protection, Species and habitats, Educational activities
DE1	GrünGürtel Frankfurt (Green Belt Frankfurt)	Outdoor recreation, Water quality, Air quality, Rural vitality
DE2	Traditional orchards supplier premium in Hessen/Baden-Württemberg	Air, Soil, Species and habitats, Pollination, Landscape character and cultural heritage, Outdoor recreation, Educational activity, Rural vitality
DE3	Regionalwert AG Freiburg / Hamburg / Munich	Rural vitality, Soil functionality, Species and habitats, Water quality
EE1	Marketing of local organic, artisan and farm food	Rural vitality, Species and habitats, Pollination, Biological pest control, Soil, Water, Landscape and cultural heritage, Farm animal welfare, Food security
EE2	Grass-fed organic beef and a whole value chain approach	Species and habitats, Landscape character and cultural heritage, Farm animal welfare, Rural vitality, Water quality, Carbon sequestration, Soil functionality
EE3	State Forest Management Centre	Outdoor recreation, Educational activities, Health and social inclusion, Landscape character and cultural heritage, Species and habitats, Rural vitality
FR1	Agriculture and forestry in Pays de Langres, France	Species and habitats, Landscape character and cultural heritage, Water quality, Educational activities
FR2	Volvic water company, management agreements and agri-forestry	Water quality, Water availability, Species and habitats
FR3	Agriculture and forestry in Parc National des Cévennes	Water quality, Water availability, Landscape character and cultural heritage
IT1	Processed tomato supply chain in northern Italy	Water quality, Water availability, Soil functionality, Soil protection, Climate mitigation
IT2	Bergamot, niche and organic products in Calabria	Species and habitats, Landscape character and cultural heritage, Rural vitality
IT3	Valdoso agri-environmental agreement	Water quality, Soil functionality, Food security, Air quality
IT4	Niche products and tourism in Garfagnana	Species and habitats, Landscape character and cultural heritage, Rural vitality
NL1	Payment for grazing systems in dairy production	Landscape character and cultural heritage, Species and habitats, Farm animal welfare, Soil functionality, Soil protection
NL2	Farmer, beer and water – sustainable agriculture and sourcing in North-Brabant province	Water quality and availability, Soil functionality, Soil protection, Landscape character and cultural heritage, Species and habitats, Outdoor recreation
NL3	Nature management and regional planning in Drenthe	Landscape character and cultural heritage
NL4	Skylark foundation: a farmers' association promoting sustainable arable farming	Water quality, Soil functionality
PT1	Montado extensive silvo-pastoral system in Portugal	Species and habitats, Landscape character and cultural heritage, Air quality, GHG emissions, Fire protection, Soil protection, Farm animal welfare
PT2	Small scale farming and peri-urban mosaic in Montemor-o-Novo	Rural vitality, Food security
PT3	Intensive olive production in the Alentejo	Rural vitality
SI1	Agri-forestry in sub-alpine Slovenia (Upper Savinja Valley)	Species and habitats, Landscape character and cultural heritage, Rural vitality
SI2	Recreation in urban forests in Ljubljana, Slovenia	Outdoor recreation, Health and social inclusion, Water availability, Air quality, Carbon sequestration, Soil protection
SI3	Goričko – Agriculture-based development strategies for areas hit by economic crisis	Food security, Species and habitats, Rural vitality
SI4	Nature conservation enabling social security in farming in Središče ob Dravi	Species and habitats, Landscape character and cultural heritage, Rural vitality
UK1	WILD river catchment management initiative	Water quality, Flood protection, Rural vitality, Soil protection, Species and habitats, Landscape character and cultural heritage
UK2	Hope Farm with intensive, sustainable arable farming in the east of England	Species and habitats, Water quality, Water availability, Flood protection, Soil, Carbon sequestration
UK3	North Pennines multi-stakeholder partnership for sustainable uplands	Species and habitats, Landscape character and cultural heritage, Water quality, Water availability, Carbon sequestration
UK4	Care farms	Health and social inclusion, Rural vitality

⁵ The twelve in-depth case studies are shaded.

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⁶ Full case study reports are available at the project website and each report contains a large amount of additional references and links to relevant material that can be accessed online at: <http://pegasus.ieep.eu/resources-list>