



PEGASUS
Public Ecosystem Goods and Services from
land management – Unlocking the Synergies

Deliverable 5.3

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Enhancing public benefits from EU Agriculture and Forestry: Transferable Methods for Success from Local Action



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Abbreviations

BABF	Federal Institute for less-favoured and mountain areas (Bundesanstalt für Bergbauernfragen)
CAP	Common Agricultural Policy
CCRI	Countryside and Community Research Institute
CEET	Centre for Ecological Engineering
CREA	National Council for Research in Agriculture and Agricultural Economic Analysis (Consiglio per la Ricerca in Agricoltura)
DLO	Foundation for Agricultural Research (Stichting Dienst Landbouwkundig Onderzoek)
EU	European Union
FIBL	Research Institute of Organic Agriculture
FÖG	Support Association for Regional Traditional Orchard Cultivation (Födergemeinschaft regionaler Streuobstbau)
IEEP	Institute for European Environmental Policy
IfLS	Institut für Ländliche Strukturforschung
INRA	National Institute of Agronomic Research (Institut National pour la Recherche Agronomique)
IO	Inter-branch Organisation
ISO	International Organisation for Standardisation
JRC	Joint Research Centre
NGOs	Non-Governmental Organisations
PEGASUS	Public Ecosystem Goods and Services: Unlocking the Synergies
ÚZEI	Institute of Agricultural Economics and Information
WFD	Water Framework Directive
WILD project	Water and Integrated Local Delivery project

1 Introduction – purpose and scope of this report

The PEGASUS project aimed to identify how to promote enhanced delivery of environmental and social benefits from farming and forestry, across the EU. After three years of investigation and analysis it has distilled a number of lessons for both policy and practice. Policy recommendations are focused upon national and European policy makers and in particular, consider ways to improve the environmental and social outcomes of the new CAP, beyond 2020. These are the subject of another deliverable from the project (D5.4). This deliverable, D5.3, provides a compendium of lessons for practitioners who are interested in seeking to enhance multiple benefits from farming and forestry, within a territory or along a supply chain. Learning from 34 case study examples around Europe (for a full list, see Table 4 in D5.1), and from validation of the case study findings with multiple stakeholders in national and EU-wide seminars and workshops, this report draws together a set of common principles and supporting methods to help local actors. It summarises the wide range of lessons from the project concerning transferable methods for the successful delivery of ‘Public and Ecosystem Goods And Services from farming and forestry; Unlocking Synergies’. It aims to provide a relatively comprehensive analysis of good practice for successful initiatives. Because it is derived from a very broad range of situations and contrasting types of experience, these lessons should be transferable to a wide variety of contexts in Europe.

The PEGASUS project has demonstrated the key role of social processes in achieving enhanced levels of environmental and social benefits from farming and forestry activities. The involvement of local actors working together, either across a territory or within a supply chain, is key to building the capacity and momentum to deliver these benefits on the ground. PEGASUS has also highlighted the complexity of situations in which stakeholders decide to work together to increase the provision of environmental and social benefits. It is clear that even quite successful initiatives can suffer difficulties or even struggle for survival, if some of the key principles of effective collective action are lacking, weak or poorly implemented. Common examples include a lack of co-ordination or long-term planning among key players, not ensuring reciprocity between actors, compromising their trust in each other, or cases where the actions taken are not well adapted to the local or regional context. This report seeks to help local actors (e.g. farmers, NGOs, supply chain actors including commercial companies, public agencies, technical advisers, community groups) to be aware of these issues and thus increase their chances of establishing and pursuing successful initiatives.

The set of common principles for effective collective action emerges from the theoretical background of the PEGASUS project, itself drawn from a number of previous studies (e.g. Ostrom 1990; Ostrom 1998; Ostrom 2005; Scott, Marshall, 2009; Ostrom and Cox 2010; McGinnis and Ostrom 2014 – see PEGASUS deliverable 1.1). These theoretical insights have complemented and enriched PEGASUS’ analysis of the process by which benefits are generated, within local initiatives. The key concepts informing this body of theory include:

- A systems focus (examining social-ecological systems in which people and nature interact)
- Insights from studies on behaviour change in the domains of business and organisational theory, also institutional economics, psychology, and social science, as well as lessons from the analysis of European and global environmental activism.

Taken together, this body of knowledge highlights the importance of social processes in the pursuit of environmental and societal goals. To achieve beneficial change requires people to be motivated and to act, in co-ordinated and sustained ways. Thus, understanding how social processes can be initiated, facilitated, developed and renewed is central to enabling their diffusion and successful transfer across the diversity of European farming and forestry systems.

The remainder of this report sets out our compendium of good practice, ordered in sequence according to the four common stages of development of initiatives that we have identified. Each stage comprises a number of key principles and some practical advice to aid their design and implementation. Where relevant, the principles are illustrated with examples drawn from selected PEGASUS case studies. The report concludes with a brief reflection on the material presented.

2 Structuring the Social Process: four key stages to design and implement initiatives

Initiatives to stimulate the enhanced provision of environmental and social benefits from farming and forestry in the EU arise in a wide variety of forms, involving a range of different actors and working with many different drivers and motivations. Some are led by farmers and foresters themselves, while others may be stimulated by other actors in a food or forestry supply chain, or by environmental NGOs and/or community groups working with those who manage land. In many cases, government officials or public agencies are also involved – sometimes funding and supporting the action, other times helping with advice or information and in a few cases simply providing the broader framework of market conditions and regulations through which these initiatives identify opportunities for growth and development.

Notwithstanding this great variation in context and form, it is possible to identify a common underlying process through which successful initiatives progress from their earliest conception to maturity. In overview, the process can be divided into a number of distinct ‘stages’ or ‘situations’ which usually follow one another (although at varying speeds and depth), and within which the same kinds of actions, considerations and learning should ideally occur. From the experiences of PEGASUS case studies and participants at PEGASUS workshops, we are able to distinguish four main stages each with a series of key steps, or important elements, within them. The process should not be understood as finished at the end of the last stage but, in order to be sustainable, any initiative should grow via repeated iteration around a cycle of the stages, meaning that its development trajectory looks more like a helix than a straight line or a circle. For example, when periodic reflection among actors generates new insights to improve co-operation between stakeholders, this should stimulate further adjustment via the initiation of new actions, requiring preparation and then operation. By way of example, we can consider the WILD case study in the UK, which began with a relatively narrow focus but has developed many new activities over a period of years (see pages 5 and 21 in this report).

STAGES AND KEY STEPS FOR INITIATIVES TO GENERATE ENVIRONMENTAL AND SOCIAL BENEFITS

STAGE 1	Initiation: when the idea for the initiative is first conceived by one or more actors (as individuals or within organisations), usually at the local level. This involves those people having an idea, maybe discussing it with others, and seeking wider support to implement it.
Key steps:	defining the area/territory or the system within which the initiative will operate; identifying the main features of the challenge(s) that it will address; and understanding the wider context within which these challenges arise.
STAGE 2	Preparation: the process during which an initial idea moves from being just a simple concept to a more concrete plan of action, involving the necessary actors and deciding how it will work – who will be involved and what their respective roles will be. This requires understanding and communication between actors, and a good analysis of the situation.
Key steps:	Understanding actors and their interests; bringing actors together (ensuring an impartial contact); developing trust between them and working in situations to overcome low trust; ensuring balance between actors; overcoming apathy; making connections and building awareness.
STAGE 3	Operation: this is when the initiative begins to put its plans into practice – bringing about changes that help to promote better delivery of benefits by farmers and foresters.
Key steps:	Ensuring reciprocity between actors, agreeing the modus operandi, good communications, establishing appropriate institutions and fostering strong leadership.
STAGE 4	Review and evaluation: this refers to the periodic need, once an initiative is established, to take stock, to adapt to changing external conditions and/or otherwise to refresh and re-validate the aims and methods that the initiative has adopted. Nothing stays the same for long, so ongoing review and continuing adaptation are common features of success.
Key steps:	Keeping up motivation, managing changes in external circumstances, review, collecting evidence of impacts.

It is possible to distil good practice for all the main elements within each of the four stages. Here, we set out the principles of such good practice in a sequence, as provided in the box above. The numbering sequence corresponds to the specific named sections in the PEGASUS on-line Toolkit.

3 The PEGASUS process, in stages

1.1. Stage 1 – Initiation: Defining the area/system, the challenge and the context

This part of any initiative is actually a continually-evolving process. Nonetheless, it is important for actors to think clearly about these issues when an initiative is first conceived. They should be aware that their ideas at this point represent an early ‘sketch’ that will need to be updated regularly, as the initiative develops. The main areas for definition concern the system and its key components (including key actors), the challenge to be addressed, and the wider context.

Principle A1 - Defining the area or the system

An initiative needs to have some limits to its coverage: if it is too small, it may be quite simple to develop but its ultimate impact could be insignificant, but if too large it could be difficult to manage in a way which can succeed in delivering real change. Large and complex systems can be either very difficult to change because of inbuilt momentum (the ‘oil tanker’ effect – difficult to turn around); or they may be subject to much bigger forces for change which could risk destroying a new initiative or rendering it ineffective, for reasons entirely beyond the control of its main actors. In many cases, initiatives begin as quite small and they grow gradually – for instance, by making one simple change which builds the confidence to do more, then planning and implementing other changes over time.

The ‘area’ for which an initiative is relevant could be a defined geographical territory, for example part of a river catchment or a natural feature like a mountain range or other geologically-defined landscape. It might be an administrative territory, for example a local government area or a designated protected landscape, or it might be a clearly-identifiable economic/market system such as a specific food supply chain for a particular product, or mix of products, from a community of producers. It might also be a combination of these things. The key questions for an initiator to ask themselves are:

- ‘What ‘area’, ‘place’ or ‘system’ is considered central to the project or initiative in order for a change to be effective?’
- How many actors are there with a stake in the resources in question, who are they and how do their actions or stakes affect these resources?

In this sense, the area or system can be defined. However, the process can be challenging. There are a number of ways in which different elements in a system (social, economic and environmental) interact; and the more elements you include, the more difficult the task of definition can become. It is important to be flexible when discussing the scope of the initiative with any potential partners, especially when they represent different sectors or interest groups with different ways of looking at or understanding particular areas or systems. Previous studies have shown that the number of stakeholders matters, because this affects the complexity of relationships that must be considered and the potential breadth of outcomes (Ostrom 1998). In general, small groups of actors can be vulnerable to the failure of a few members, but large groups are usually more difficult to coordinate, so a balance needs to be found which is appropriate for the individual case.

PEGASUS case study ‘**Organic farming in the mountain Murau region, Austria**’ concerns an organic haymilk production scheme in Murau, Styria. By connecting the production of quality products to alpine landscapes, the scheme creates synergies between improving the income of mountain farmers and of other parties along the value chain, and the maintenance of typical landscapes with high levels of biodiversity. The association running the initiative has defined additional haymilk regulations and features of (traditional) mountain farming, as well as supporting the horizontal and vertical integration of the entire value chain, to ensure that consumers know they are supporting a whole landscape, when they buy this milk. This is a system defined by both its territory and supply chain. PEGASUS case study ‘**Water and Integrated Local Delivery (WILD) catchment project, United Kingdom**’ is a territorial initiative that grew out of an existing partnership formed to implement the Water Framework Directive (WFD) within the upper reaches of a water catchment in central England. Its initial aim to improve the water and land-based environment also held potential to

deliver a range of other benefits (economic and social as well as environmental) via a common range of practical actions. The initiative was therefore defined as ‘Water and Integrated Local Delivery’, to enable these synergies to be pursued through a multi-actor, territorial approach.

Principle A2: Defining the challenge

When developing an initiative it is helpful to identify the central challenge that it seeks to address, the resource(s) at stake and the services dependent on the resource, as well as the key stakeholders. It is an advantage if the definition of the challenge is founded upon a good understanding of the complex relationship between the resource and the production processes affecting it, also the roles of stakeholders in the appropriation of services/benefits flowing from the resource. The limits of, or threats to, provision and/or appropriation of benefits should also be considered (Ostrom 1990, McGinnis and Ostrom 2014). Asset specificities, uncertainty, periodicity and other characteristics of the resource and its provision are important for the whole process (Hagedorn 2008). All these considerations help to identify the challenge and enable initiators to communicate this clearly.

Once understanding begins to take shape it is important to share it with other trusted actors. As discussions progress, it is very useful for initiators to be aware that potential important partners covering different areas of action or responsibility might take a different perspective. It is important that the challenge makes sense to all key actors. Thus an explicit challenge may sometimes benefit from being defined in quite a general way, e.g. improving water quality and the long-term environmental value of the suggested area. If the definition is too specific, e.g. reducing the level of nitrates in one river, this might be off-putting to some key actors who might feel unduly implied as ‘wrong-doers’, by such a specific focus in defining the initiative. Initiators need to be creative and to find a ‘route in’ which enables a range of partners with different perspectives to identify with the initiative, offering them something that they can each contribute to, or agree, and then begin to see how different factors are linked or depend on each other. Once the challenge is agreed, it is possible to ask what is missing and begin to consider how collective action could provide benefits for all.

In the ‘**Grass-fed beef, Estonia**’ PEGASUS case, the market situation was unfavourable for beef production in Estonia so two farmer-enthusiasts decided that common action, co-operation and initiative was needed in order to become independent from manufacturers’ pricing decisions and provide more value-added to producers. The grass-fed beef initiative unites NGO ‘Liivimaa Lihaveis’ to two closely-related private limited companies processing and distributing beef, and more than 40 organic farms who joined the state-certified organic grass-fed beef quality scheme. The common challenge for these actors is to produce, process and market grass-fed beef, promote its consumption and thereby support the provision of biodiversity, landscape, carbon sequestration /storage, rural vitality and animal welfare, on the High Nature Value meadowland where these cattle are reared. In the PEGASUS case study ‘**Birds and amphibians on meadows, Czech republic**’ farmers lacked any motivation to manage the formerly valuable meadows in one local area. Nature enthusiasts from a Czech NGO initiated collective action for the restoration of wet meadow management, to benefit both birds and amphibians. Stakeholders agreed the management approach and together with a second NGO raised money from public funds (for capital works) and from the general public. Restoration of irrigation and small pools together with careful management by farmers increased the biodiversity significantly. The main challenge was to initiate

collective action involving all key actors, to change property rights (e.g. affecting meadow management by irrigation and adding new rights to access the land) and to create new governance under the leadership of the NGO.

Principle A3: Defining the context

The core characteristics of the area and/or system within which the initiative is set are key to deciding what can be done, and how. These will include:

- social/cultural features (e.g. existing or latent social capital, people's capacity and willingness to cooperate), also the main potential partners (e.g. local communities, local government bodies);
- the environmental assets and the organisations with key responsibilities for them;
- the actual or potential demand for relevant goods/services, and relevant market conditions;
- the institutional/policy environment; and actual or potential pressures from natural/market environment on resource and resource units provision; and
- economic partners from agricultural, forestry, tourism etc.

Understanding how these features and bodies are structured, and how they communicate, is crucial. The success or failure of the action or initiative relies fully on actions being fit for the specific context, and relies on a good level of knowledge of these characteristics of the system, by key actors. Some characteristics are commonly not recognised but very important to collective action – for example, knowledge and motivations. As Ostrom put it: “If there is no information about actor preferences (over reciprocity, cooperation, trustworthiness) for a relatively large population, preferences are predicted to evolve so that only rational egoists¹ survive. But if information about the proportion of a population that are trustworthy is known, and ...there are noisy signals about players' type that it is at least more accurate than a random signal, trustworthy types can survive as a substantial proportion of the population. Noisy signals may result from seeing one another, face-to-face communication, and various mechanisms that humans have designed to monitor each other's behaviour (Ostrom 2000)”. This action of understanding the context of an initiative is a sort of mapping exercise, so it can be good to make this a collective activity. Key actors can be brought together and asked: How do the characteristics of this area/territory/ supply chain relate to levels of, and trends in, particular environmental and social benefits that people would like to see?

In the PEGASUS case study '**Bergamot, Italy**', to protect and enhance demand for essential oils from authentic bergamot orchards in Calabria, farmers created an Association which stabilised supply and quality from this territory, but they were losing market share. A local farmer identified and, with a few neighbours, exploited a niche market for organic production, linking to specific international buyers (Body Shop), which then regained market visibility and opportunity for all producers. Both associations now take care of the local landscape, its cultural values and environmental quality. But it was the initiators' ability to understand the uniqueness of local context and its simple adaptation to organic production, which was key to the success of this initiative. In the **Outdoor dairy cow grazing, Netherlands** case, Dutch dairy production has shifted from grazing outdoors to indoors (by nearly 40%, between 2001-2015) due to economic reasons,

¹ Rational egoists seek intrinsic payoffs since they do not value the social norm of reciprocity.

with increasing concentration of production (herd size growth). But grazing is highly appreciated by consumers and the general public as beneficial for animal welfare, landscape, biodiversity, and the production of high quality cheese. Turning this appreciation into marketable demand required initiators to overcome the high transaction costs of "selling" environmental outcomes through a market. This was achieved by collective action in which key aspects of grazing could be guaranteed and thus a premium secured for these less economically-viable production methods, ensuring future viability.

1.2. Stage 2: Preparation

Once the system, challenge and context are understood, a wide range of planning, knowledge-gathering and building of relationships will help to ensure that initiatives can be successfully set up. Key ingredients of this stage will underpin what follows, so all deserve careful attention.

Principle B1: Understanding the relevant actors and their interests

Key to the success of an initiative is a good understanding of the relevant actors, identifying their interests, their information/access to knowledge, their resources and all other characteristics that will be important for future cooperation (Ostrom 1998). Relations between actors are also crucial: how they inter-relate and how this affects the provision of environmental and social benefits, in their specific situation. These things will influence the choice of the most appropriate approaches to gain stakeholders' involvement and to enable coordination between them. PEGASUS found that generally, the more different the interests of stakeholders, usually the more effort was needed to create trust between them, which is a pre-condition for agreement on how effective cooperation can be organised (also discussed by Ostrom 1990). All the relevant actors in the system need to be identified and some contact made with them. Relevant actors would normally include:

- land managers, farmers and/or foresters (individually or via representative organisations), and other people with responsibility for the land;
- those to whom they supply and/or from whom they obtain supplies or resources; and
- those who enjoy or have some responsibility for the environmental and social benefits that they could provide; including private actors or community members; policy-makers, support services, social or economic institutions, community leaders, and so on.

Taking time to consider and identify relevant actors can be planned as a gradual process, which allows time to reveal and consider the main concerns and needs of different groups, as they are identified. That in turn enables discussion of how these concerns and needs can be addressed or supported, through the initiative. Such a process can help to build a common vision for what it might be possible to achieve, if these groups come together.

In the **Bergamot, Italy** case study, key actors were identified and invited to start a collective action. The first group of farmers engaged in organic production and agreed to collaborate to process and market their product. Once a new market link had been established and other farmers could see that it was possible to differentiate the product from synthetic chemical substitutes, this provided opportunity for the longer-established co-operative of non-organic farmers to adopt a similar marketing strategy. **The Skylark Foundation in the Netherlands** deliberately starts with the

ambitions of the participating farmers themselves. The approach does not prescribe levels of sustainability for farmers to comply with; rather, it has 10 sustainability indicators that need to be addressed within four years. From a list of over 200 management options, each farmer can choose what to do and in what order. The participants are organised in regional groups in which they discuss each other's plans and achievements. Farmers pay to participate, illustrating their dedication to improve.

Principle B2: Bringing actors together

Ideally, actors should be brought together in a variety of ways, so that they can begin to exchange information and opinions concerning their role(s) in respect of provision, and their other priorities and needs. The precise sequence of how actors become involved, and when, will vary according to the local context, but the aim is that all need to be part of the process at some stage. Leaving key actors out of the process is likely to lead to problems as the initiative develops. Without people being in contact, no collective action is really possible. As a general rule, those likely to be influenced by decisions should be included from the start. Face-to-face communication and other appropriate actions to share ideas and understanding are preconditions of successful collective action (Ostrom 2000). Of course, not all discussions will go smoothly, plans might need to be changed in order to resolve disputes or to keep the majority on board. Bringing groups together should be approached carefully and with sensitivity to social dynamics.

The **Grass-fed beef, Estonia** case study started with direct contact between project staff and the beef producers in order to “sell the idea” of creating a farmers’ (beef breeders) NGO to lead the development of the supply chain. Other key stakeholders were identified during the process and information exchanged between them and those already in the farmer-led NGO. Personal contacts were established and maintained across the supply chain with slaughterhouses, a processor, retail chain and restaurant chefs. In **Water and Integrated Local Delivery (WILD), UK** a wide range of approaches was used to bring local people together. To ensure people felt at ease, welcoming venues (pubs or community spaces) were used. Requesting time to present new ideas at regular meetings introduced the project to a range of existing groups, as well as speaking at other local field-based events. Once identified, key people were invited to an initial planning meeting that was facilitated by an external specialist in communication, where issues and tasks were identified.

If key actors have conflicting or opposing interests then ‘mediators’ in some form are likely to be needed. These individuals or groups might be independent of the actors and thus able to play a neutral ‘brokering’ role in discussions. On the other hand, they might be people in one or other of the key groups who, unlike their peers, are more willing to risk listening to an opposing view in order to try to find better outcomes, and can therefore be encouraged to ‘take the first steps’, and later to encourage their more reluctant peers to do the same. Trust may develop best where there is a neutral voice bringing the various actors together. If there is an obvious individual who could act as a ‘bridging’ person – knowing two contrasting groups who don’t generally trust each other – that person can be invaluable for making the first moves to improve communication, and advising on how it might be most simply achieved.

In the **Processed tomato supply chain, northern Italy**, the case study initiative covers four regions and an autonomous province. The supply chain is organised by an Inter-branch Organisation,

comprising producers' organisations and processing companies. This umbrella organisation has the role of mediator of different interests, and was created after the producer organisations had been established, once they could see the benefit of working together to create a distinct quality brand with specific environmental production standards.

Principle B3: Developing trust between actors

Actively developing trust with and between different actors is essential, but this may not happen easily or quickly. It is often critical to understand history – what has happened in the past, which has created the current levels of trust or mistrust between key actors. Collective memories may be very strong/long. Low trust is a major barrier to collective action. Trust is influenced also by how other principles of collective action are pursued: for example; it is supported if the principle of reciprocity is observed and stakeholders can clearly see that actors are making efforts to share costs and benefits of action fairly, and incorporating this into all the rules discussed between actors. Stakeholders also appreciate if they can see the results of their efforts (sharing the results of monitoring success), this can be another way to foster long term trust. The initiator(s) of action should consider the general level of trust in society, because this will determine to some extent the capacity for increasing local/regional trust.

In the **Birds and amphibians support on wet meadows, Czech Republic** case study, the importance of trust was not recognised when planning how to involve the actors (especially farmers) in the initiative. Initiators of the project relied on an open meeting where all stakeholders were invited but farmers did not attend. Appointing a local project manager improved the situation to some extent but not fully. Trust of NGO representatives in farmers was also low and alternative strategies to ensure sustainability of the project were needed, to compensate for lack of trust. In the **Water and Integrated Local Delivery (WILD), United Kingdom** case study, developing trust across the wide range of actors was helped by identifying early projects that required multi-actor engagement, to foster co-operation. Not everyone in the project was keen at the start and some did not want to engage - those decisions were respected, but these actors were still kept up-to-date with the project, so that at a later stage, if they wanted to join this could be facilitated.

Some actors take time to develop commitment towards a project, which might mean a big change of direction for them. If some key actors don't even know each other, some events may be needed just to enable them to meet, in unthreatening circumstances. If they know each other but they are suspicious of others' motives or ability to cause them difficulties, then a specific process may be needed to help overcome suspicions and build understanding. This might require creative thinking to identify the kinds of event that will succeed in attracting the key groups to attend, despite low trust. Sometimes a simple entertainment or social event with local food and drink could be valuable; other times attending pre-established social or sectoral gatherings can provide some opportunities for conversation. Stakeholders need to see that there is a real value from this approach and that they might save time, meet people they can work with, and increase their business or even benefit from others and from the public spirit generated by the initiative. Designing an event around actors' current concerns can be one helpful way to attract participation.

In the **Traditional orchard meadows in Hessen/Baden-Wurtemberg, Germany** case study, the Support Association for Regional Traditional Orchard Cultivation (Föderungemeinschaft regionaler

Streubstbau, FÖG) was set up in the 1980s, but 30 years later the group was suffering from low trust between individuals in the management structure and low interaction between producers, plus a reluctance to work with other (similar) organisations. As these elements of low trust between actors had not been addressed, the future of the initiative was insecure: PEGASUS tried to address this through a process of shared scenario development for the future of FÖG. In the **Grass-fed beef, Estonia** case, many farmers were sceptical at first as it was seen as “yet another project which starts enthusiastically, but will quickly come to a standstill”. But the tangible **results** of the action: better prices for their beef, growth of the supply chain, and growing interest of chefs and consumers; has increased optimism that the initiative is vital and **beneficial** for all actors.

On-site meetings between a range of actors can be a really good way of outlining central issues and providing an opportunity for stakeholders to share their knowledge. If trust is sufficient, meetings between actors or groups can be a useful way to raise awareness about the potential for action to bring benefits for all of them. It is beneficial to be open and transparent about the potential benefits and costs of taking action as early as possible, and to facilitate action to achieve a fair sharing of both costs and benefits between the key actors. If trust between key potential actors is very low (and/or the difference in interests and values between actors is significant), the initiator(s) may need to begin with bilateral meetings between individuals or pre-existing social groups, to explore their understanding and opinions concerning the area and main issues.

Principle B4: Ensuring balance between different actors

In situations where actors are very numerous, it may be necessary to work with a select few individuals or groups rather than everyone. Stakeholders can nominate representatives and have an agreed channel of communication, so all information is shared. However, trying to ensure a balance of different kinds of actor remains very important – if only some interests are represented while others are excluded, the developing agenda for change will be weaker, less balanced and more open to challenge.

In the **Birds and amphibians support on wet meadows, Czech Republic** case study, farmers were not represented sufficiently because most of them refused to join the meetings where key decisions were made. As a result, despite the leading NGO trying to respect their interests, farmers did not trust the final decisions. In the **Bergamot, Italy** case study, one consortium has a lot of members (905 farmers and one processor) and its advantage is power in an oligopolistic market and financial capacity to carry out projects, whereas the other group is small (less than 20 farmers) but its advantage is organic quality which is better managed in a small group. Nevertheless, they each respect their differences and work together for the common aim of sustaining Bergamot production.

Actors should ask themselves if all potential actors are engaged and if the approach is considering all interests in a balanced way. Without sufficient representation of actors there is a danger of exclusion of those with different interests which could lead to low trust and poor participation or engagement. Initiators need to think carefully about any excluded interests, and how to find ways to encourage them to see the initiative as offering something to make their involvement worthwhile.

The **Traditional orchard meadows in Hessen/Baden-Wurttemberg, Germany** Initiative in 2016 was facing apathy, lack of trust between actors and unwillingness to contribute to development of the initiative. It could be a good idea to involve someone from outside as a facilitator, in this case. The PEGASUS research team was able to provide possible scenarios to stimulate challenging discussions, helping to address the issues of apathy or unwillingness to engage, among relevant actors. The **Water and Integrated Local Delivery (WILD), UK** project has learned to accept that membership of the partnership by any actor is fluid, so some will join and others leave. They can always stay in touch, but if circumstances change and they need to adjust their commitments then this is acceptable. Another approach is to have a ‘task and action’ focus, keeping the initiative fresh and constantly changing, involving different actors at different times. Regular monitoring and review also helps to maintain this pattern of behaviour.

Note - Making connections and raising awareness

If key actors have similar interests, getting them to exchange views and information should be relatively simple – someone just needs to make the connections and raise awareness of their potential common aims. Even if trust between actors is low but the interest is the same between them, leadership should seek to bridge trust between groups and build from there.

Key actors` interests in the **Estonian grass-fed beef** case are similar in principle – to give more added value to beef. The role of the initiators was thus to bring stakeholders together, showing the benefits of the action and convincing people to take part in the initiative. For the **Organic farming label in the mountain Murau region, Austria**, the initiative came from a private actor (outside the region), with substantial existing experience and thus an ability to link different interested parties. Also, prior to the creation of the initiative, there were preparatory studies regarding the opportunities for an “organic region Murau”. Although the concept was not put into practice straight away, it was valuable for discussion, awareness-raising and subsequent creation of the initiative.

Actors should discuss and agree what are the main outcomes they want to achieve, for the site or system (e.g. bird species increase, or reduction in known pollutant in the water, or successful market development for a new environmentally-branded product) and then consider how these might be achieved. Even the interest is similar, there must be agreed rules for sharing the costs and benefits, observing agreed rules, conflict resolution mechanisms and other factors supporting trust-building.

Principle C1: Understanding linkages between different actors and their context

Understanding the multiple relationships and interactions between each type of actor and the provision of environmental and social benefits is key to identifying potential for change to improve the situation. Factors to be considered include economic viability, local social factors, cultural heritage and tradition, signals from wider society and natural variables (e.g. climate, disease), as well as appreciation of the benefits by society (is it growing, declining or low?).

In the case of **Outdoor-grazing payments in dairy farming, Netherlands**, interests and actors were quite clear from the very beginning and linkages were quite straightforward. Farmers are members of a cooperative that decided to market cheese with a label based on grazing, therefore all key

linkages were functioning before the initiative started. Also, the role of resource management (grazing) was quite clear, because demand from society for the value of outdoor grazing was publicly known and debated. In the **Traditional orchard meadows in Hessen/Baden-Wurtemberg, Germany case**, the initiative lacked good understanding of social factors that were constraining its activities. It was so concentrated on the established model of pursuing landscape/biodiversity goals supported by a price premium that it was unable to respond to changes in society and within the group with respect to retirement, shifting motivations to do voluntary work, communication between members, and mistrust between key actors.

Initiators should ask themselves whether they have missed any connections between actors and context and if all the important factors have been understood and taken into account. It is also valuable to ask: what is needed in order to establish and strengthen connections between actors?

- **Economic viability** and/or potential returns from different production systems, including requirements for managing relevant resources, is usually an important influence upon structural and technical change in farming and forestry. In most cases the provision of environmental and social benefits is linked to some extent to a market (i.e. those producing these benefits also produce for commercial markets) and therefore the initiative has to consider the economic viability of management as a necessary part of planning and development. The **Organic farming in the mountain Murau region, Austria** initiative is an example of successful growth in the agricultural income of mountain farmers whilst providing environmental and social benefits. Here, economic interests could be considered as fundamentally important and the main driving force for participants.
- **Local social factors** can be an important driver or motivator for change. The need to provide a brighter future for the next generation can stimulate action, as can a feeling that others need our help. In the **Grass-fed beef, Estonia** case, social factors (e.g. rural vitality) were important in order to show the benefits of the initiative to the consumers, policy-makers and others not directly involved in initiation and development of the action. Social factors can be a very important consideration when communicating an initiative to the public.
- **Cultural heritage and tradition** can be a source of pride and energy for positive action – where individuals or communities see value in strengthening and preserving customs and traditions unique to a particular place or landscape; or protecting key features and symbols of regional or local identity. In the **Traditional orchards, Germany case**, these characteristic elements of cultural landscapes are in decline and in poor condition. Awareness for the decline arose among nature conservationists in the 1980s, leading to a number of initiatives of collective action intended to maintain traditional orchards. The protection of the cultural landscape and its environmental value was the most important factor.
- **Signals from wider society** may also be important. Signals from society concerning the pros and cons of collaborative activity and its impact on actors' preferences (e.g. for cooperation, reciprocity, trustworthiness) can be critical. If signals are “loud enough” in society and between stakeholders, this is one of the key prerequisites for actors to recognise and

respect each other's preferences and aptitudes. In addition, it also links to the capacity/willingness of actors to create control mechanisms or systems of penalties and to decide the appropriate level of their implementation. If these signals are hidden, nobody trusts how it is supposed to work, corruption is fostered and apathy or inaction can be a significant result. These signals can support collective action, if communication between actors is supported (Ostrom 2000). With **Grass-fed beef, Estonia**, common to post-soviet countries, there is some scepticism about co-operation and collective action. Although low co-operation is often cited as a generic social phenomenon, real action to change this attitude is missing. Today, there are many good examples of well-functioning co-operatives in Estonia and these examples can be used to encourage actors to build trust and a spirit of cooperation. The **Skylark initiative in the Netherlands** started after a brewery decided to source more sustainably-produced barley, and a number of arable farmers in the local area joined forces to supply this, and then applied similar principles to their other crops and involved other supply chain partners, accordingly.

- **Natural variables (e.g. climate, disease)** can also be important influences or drivers of practices – e.g. where increasing presence of herbicide-resistant weeds in arable crops stimulates farmers to look for alternative husbandry techniques and learn more about soil management for crop health. **In Birds and amphibians support on wet meadows, Czech Republic**, natural value and its potential for restoration was the main driver/motivation of a few enthusiasts for the action taken. The irrigation system was originally created partly to secure supply of grass to horses in a nearby large fortress, long ago. Today, frequent dry periods can be a driving force for crop farmers to increase production security by diversifying into wet meadow management, but this is based on the assumption that demand for grass will grow in future.
- **Technological change and other socio-economic trends or shifts** may also be a critical factor shaping what has happened in the past and what potential options might be for the future. Several case studies are beginning to use online communication methods and social media to keep stakeholders informed and to build support for their actions among a wider constituency. Online marketing of products is now an attractive option, for some.

Principle C2: Understanding the importance of institutions and formal structures

Different institutions² - for example policy instruments, property rights, organisational goals and behaviour of public and private sectors, regulations and requirements, agreements and political and socio-cultural groups and beliefs – will influence land managers and other local actors' behaviour in ways which may be critical for the provision of environmental or social outcomes. Understanding how these elements have affected past and current trends and situations is valuable, increasing other actors' appreciation of their influence and thus being able to identify how

² In this text we use the term 'institutions' in the sense of its meaning within Institutional Economics – this includes all formal and informal structures, norms or groups that shape the ways in which things are organised in societies.

to adjust them in order to favour better outcomes. The creation of new agreements and rules of co-operation between actors is usually essential to ensure successful action (these can be informal or formal).

In the **Bergamot, Italy** case study one farmer initiated the co-operation of several farmers to exploit a niche market. They created a new Association with rules of co-operation, prices and agreed on the methods of production. The farmers used support from the CAP for organic production. Thus they created new institutions – agreements and rules - and used existing policy instruments in order to increase the provision of environmental and social benefits and the economic viability of Association members. In **Birds and amphibians support on wet meadows, Czech Republic**, an NGO initiated restoration of a wet meadow site to increase biodiversity; this was possible only by acting in collaboration with several other stakeholders. The agreement on maintaining the water regime to keep the wet meadows functioning was formalised in an official document, but other agreements between actors were not formalised and some were quite weak. Between the NGO and some farmers, in particular, agreements are fragile because of low trust between the parties. Changes in the project as it has developed have influenced property rights significantly (with the NGO developing growing ownership of land and new access rights in the area). The NGO needs more experience in dealing effectively with institutions, in order to manage the site sustainably – for instance, setting up a new, more formal partnership with farmers so that they feel their views are recognised and important.

The initiators of a project should identify and analyse: what are the institutions in place and which might need to be created, in order to have successful collective action? New initiatives can use existing rules (such as agri-environment contracts with government) and may need to create new institutions such as agreements or formally recognised associations, at appropriate stages as the initiative develops. Having formal structures with clear governance (e.g. ensuring that ‘ownership’ is shared among all those who need to have this responsibility) can also help in raising funds from public, corporate or voluntary sources to support the project. In situations where those leading a project have little prior experience of certain types of institution (e.g. property rights, or rules of association), a professional expert could be hired to provide help with these institutional issues.

Principle C3: Improving knowledge of drivers and constraints

Actors should also spend time to understand the influence of potential drivers of change and recognise that these can be a constraint upon positive developments. For example, an overriding need to maintain incomes or a strong attachment to existing traditions may prevent actors from considering new ways to achieve similar, or better, outcomes. Understanding the balance between different drivers, and how this may have changed over time, can be important for seeing what kind of action is most needed, where. It can also help to clarify what is feasible and realistic for the initiative, and suggest how best to adapt ambitions or tactics to manage or identify the most synergistic relationships with underlying drivers, which could be part of broader social trends and thus not possible to alter (e.g. change in lifestyle preferences and norms). Where actors are unwilling to recognise changes which appear inevitable, a careful process that helps them to understand why these things are happening and to understand the motivations or behaviours of the people driving change, could ‘unblock’ this blind-spot and lead them to re-think their positions.

In the **Processed tomatoes, Northern Italy** case study, actors (e.g. farmers and their associations, processors, local government) realised that climate change effects, placing constraints on natural resource use, would unavoidably influence their economic viability, but they also identified growing consumer demand for healthy food. To meet these drivers for change a large group of actors came together and agreed on the introduction of new knowledge and advanced technology into farm practices, in order to adapt successfully. After more than 20 years of progress, their consumption of natural resources (especially water) has decreased and their production meets demand for food produced in a sensitive way, ensuring that it is low in chemical residues and better for the environment and human health. Without collective action there would have been insufficient impetus to raise the quality threshold of production standards for these two characteristics, to match the pace of change in costs and market preference.

In the case of **Outdoor Grazing in dairy farming, The Netherlands**, competition in markets led to a significant increase in indoor-housed dairy cows. But the general public strongly values the sight of cows grazing outdoors on pastures and meadows. This value was a strong driver for change which was recognised and utilised by actors including cheese-makers and NGOs. They agreed on rules for the certification of 'outdoor grazing' and a premium compensating producers for associated losses, because economically, indoor housing is a cheaper system and this was acting as a constraint on farmers. This collective action created a new institution to overcome the constraint and meet the public demand; as a result, further decline in grazing cow numbers was halted.

Overlooking some drivers or constraints could lead to the collapse of a collective action or at least, great difficulties, when those underlying factors become sufficiently prominent to change economic or social conditions and people's behaviour. It may be important for actors within an initiative to identify others who can help provide appropriate expertise to respond to drivers in the most positive way (e.g. these might be economists or commercial partners with market understanding, or experts in other social disciplines). Such people might be brought within the team of actors steering the initiative, or just hired as needed. Locally-based government officials, advisors and NGOs can sometimes help local groups to identify and make contact with the best sources of expertise to meet their specific needs, through their wider networks.

Principle C4: Seeing how unique features affect what can be done, where

Some environmental and social benefits can be very site or context-specific. It may be important to recognise this, when different potential actions are being considered. Things that might work more generally might not deliver the intended outcomes in this particular situation, for natural, environmental, social, economic or institutional reasons. The way in which the resource is managed should reflect local/regional needs and exactly how the collective action is carried out should reflect for example the level of trust, normal 'rules of play' in a particular region, and the characteristics of the resources being managed (e.g. whether these are affected by particular laws or management practices that are locally-determined).

In the **Birds and amphibians support on wet meadows, Czech Republic** case, the initiative is focused on a specific place, where a rare irrigation system was created in the past and this in turn supported the creation of grassland as a wetland with rich biodiversity. The need for water management requires, in the Czech Republic, an officially approved water management regime. The rules in the regime document have to be agreed between all stakeholders affected by the change in the water regime. The specific social situation in this region required particular attention

to low trust between stakeholders, which was difficult to overcome. Trust was partly improved when a project manager from the local area was hired to oversee the project. In the **Bergamot, Italy** case study, location was key to this whole initiative. In the Calabrian peninsula there is a stretch of land approximately 120 km length that is one of the only places in the world where Bergamot trees can grow this high quality of fruit, rich in desirable essential oils. The management of the citrus production is adjusted to work with the local conditions as well as the particular requirements of oil production.

Key characteristics of environmental and social benefits provision that relate to local or regional specificities should be understood as early as possible, and actors should work together to agree on resource management accordingly. Particular management needs are usually mirrored in the rules agreed by actors, to govern practices and processes. Particular social and institutional features of a specific initiative should also be reflected in the way the collective action is initiated and carried out. For example, if actors already have to come together for regular processing of their product, it makes sense for other aspects of collective action to be linked via the processing groups.

Note: Engaging actors in discussion of drivers

Engaging different actors in a discussion or consideration of the drivers and how they affect environmental and social benefits is likely to be an important part of development. This entails outlining and presenting the system as it currently is, so that all actors can see where their interests fit within the bigger picture, how they can address drivers together and what role(s) they could have, within the initiative. A shared vision and understanding of challenges, as well as a clear idea of how each actor or group of actors can have complementary roles within the initiative, should be the outcomes of this activity. Such discussions provide a strong basis to underpin the next steps when actors are searching for new or improved ways to produce environmental and social benefits.

In the **Processed tomato in Northern Italy** case, there was already long-term cooperation in Northern Italy, in tomato production. However, when the new market drivers (demand for higher quality food) and constraints upon natural resources use became evident, key actors (e.g. producers, processors, regional government, researchers) came together to discuss how to react. That discussion enabled actors to identify a possible response to the drivers and to identify each of their roles within the project to enhance production and improve resource efficiency. In the **Water and Integrated Local Delivery (WILD), United Kingdom** case, the WILD project engaged its stakeholders to discuss the influence of the main identified drivers such as competition (related to farm economics), the CAP and the Water Framework Directive. The project aimed to bring farmers on board through discussion and engagement around these important issues. For example, an increase in winter oilseed rape cultivation in the catchment is of particular concern to Thames Water because it increases the use of slug pellets which, once in the water, are a difficult and expensive pollutant to extract. If market drivers favour rapeseed cultivation, it may be necessary to offer incentives for alternative (e.g. spring-sown) crops or alternative slug control methods, to avoid this pollution.

Once the main drivers are identified, actors need to discuss their implications: What do these drivers mean for my activities and how does this relate to the interests of others? The discussion should generate ideas for necessary changes in current practices, which could be achieved through co-operation or co-ordinated action between different actors.

Principle D1: Making new connections

As discussed already, the system in question (usually with a high level of complexity) will face drivers of change and constraints upon environmental and social benefits provision. In the early days of an initiative, the actors who make changes to the system may act more or less independently, frequently overlooking the complexity of the issues they are dealing with and the knock-on impacts for others. The creation of new connections between these actors and others also affected by the system and how it behaves, can create new capacity for change within the system. For example, some other actors may have skills or access to resources which would increase the capacity of the main ‘change agents’ to respond to drivers in different and more beneficial ways. Creating new connections between these skills and interests is, at the same time, a kind of institutional change; introducing new networks or linkages that are better able to harness the complexity of the system, to overcome specific thresholds in achieving change and to enable more integrated approaches meeting multiple needs.

In the case of **Traditional orchards (Germany)**, the high cost of production and low competitiveness of fruits from traditional orchards led to abandonment of many high nature-value traditional orchards in Germany. Farmers and other orchard owners faced the situation alone, at the beginning. However, when the decline and continuing threat to remaining orchards was recognised by other actors in society and connections were made between them and the orchard owners and producers, it was possible to find a new solution. Actors from producers to processors, including NGOs and local community groups, created a new value chain (specific, labelled juice from traditional orchards), which brought added-value to the economics of production and management, making it once again viable. In the **Organic farming in mountain region, Murau, Austria** case, small farmers and the local community faced economic decline. But because actors created new connections between producers, processors and retailers, they found potential to create a new value chain. Farmers started to produce certified “hay milk” which is processed and distributed by partner actors.

In this process, initiators of the project can ask questions: “What actors have/could have influence on environmental and social benefits provision? How could we connect them to unlock the potential to find solutions?” and “How can we connect actors with the relevant elements in the system”? This should enable initiators to make connections between actors and all key elements of the system so that the system develops a particular purpose.

1.3. Stage 3: Implementation

Once the main planning is well underway, initiators and their community of actors will need to get things moving. There is an unfortunate tendency sometimes for groups to talk too much and keep refining ideas without taking action: when this occurs, the initiative stalls and stakeholders will begin to disengage. Sometimes this happens because initiators believe that there is some crucial precondition they must achieve before they can do anything concrete – for instance, securing external funding, or gaining the approval of local government. The PEGASUS case studies show that this may be a misconception, as many actions can still be possible and valuable even where some ‘key’ conditions are not secured. Getting started – making changes to land management, to supply chains or to public and community involvement – can be possible even when resources are

constrained; indeed, early evidence of action can itself be a stimulus to encouraging others to commit resources. Once an initiative begins to make changes, a number of important principles should be clarified between key actors, such as those driving the changes and those managing the land.

Principle E1: Reciprocity

Reciprocity is an important principle to ensure that projects and initiatives retain the support and involvement of all key partners, as they develop. Basically it means ‘you do something for me and I will do something for you in return’. It is important for all partners to feel that they receive a tangible benefit from their involvement in and contributions to the initiative. So, how have initiatives examined in PEGASUS ensured a sufficient level of reciprocity between the actors? The answers are varied – it is certainly not always clear who gains what, from collective action. The benefits to some parties might be quite subtle – for instance, the provision of new evidence or insights into a new funding regime, for particular actors, e.g. farmers who have previously been unaware of this.

In the case of **Grass-fed beef, Estonia**, reciprocity has been an important principle in bringing farmers and other parts of the supply chain (processors, distributors, consumers) together, and retaining interest. For farmers, this offers them a better price; for chefs it means a better image and a high quality beef product. For consumers it means quality food together with environmental and social benefits: the feeling that buying this beef is not only healthy, but is also helping to preserve biodiversity, landscapes and farming in remote areas. In the **WILD catchment project, UK case**, WILD is built on a principle of reciprocity. It aims to avoid asking actors the direct question: ‘Will **you** ...[do this?]’, and instead asks ‘Do you know **someone who could** ...[do this?]’, which is more effective because it is a less direct challenge. It develops stronger commitment and engagement, as a result. The project has secured over 50 days of voluntary contributions, and over £250,000-worth of ‘in-kind’ (i.e. not traded, but holding equivalent value) contributions from different actors, in the first three years of the project. Farmers received important data about the quality of their soils; and local communities received information about the state of their water environment, and advice about how they can help to improve it.

Principle E2: Agreement on basic operational principles and rules (the modus operandi)

Agreement on the fundamental principles or ways of working will be important for the long-term viability of the initiative and represent a core commitment (also termed “design principles of collective action” (Ostrom 1994)). This might include agreeing:

1. what are the boundaries of the system in hand (who is in, and who out),
2. how appropriation rules (who ‘owns’ the responsibilities and benefits) should recognise local conditions;
3. collective agreements on operational “day-to-day” rules: how actors will share costs and benefits, who will do the resource management activities, who will monitor and report back, etc.;

4. agreement on rules of compliance with the agreed principles and how these might be enforced (e.g. gradual sanctions on those not complying), as well as the agreed approach to conflict resolution between actors;
5. some formal recognition of the initiative in an institutional sense, to avoid the risk of challenge coming from outside or to make it easier to apply for financial or other support. The collective action could be nested in a larger organisation but keep the rights to make its own operational rules (Ostrom 1994).

In principle, rules should be agreed by all those affected by these rules, and agreement on rules and activities is a really fundamental step, because such agreements are the basis for action, so actors thereby receive the mandate, road map and motivation for potentially substantial changes in the system.

In **Tomato production, Italy**, in the main area for tinned tomato production in Northern Italy, the Inter-branch Organisation (IO) does not have direct influence on competitiveness and market stabilisation. It acts as a guarantor of respect of the agreed rules (by producers and processors), monitoring (e.g. using only tomatoes produced in the area), supporting producers and processors to manage the general contract transparently and agree the reference price. It also facilitates implementation and respect of single supply/delivery contracts (e.g. price and terms of payments), exchanging data on the tomato harvest, origin, quality and quantities of tomato produced. Overall, the IO pursues a fair balance between producers and processors and responds also to energy and environment challenges. These principles were agreed by all actors, when creating the IO.

In the case of **Outdoor grazing, Netherlands**, the main partners agreed how to share the premium in the production chain especially to cover the opportunity costs of farmers. Also monitoring was agreed between partners (for example the number of days grazing outdoors a year). Monitoring is undertaken externally by CONO (the processor) and by an independent body (Qlip – a key figure in quality assurance in agriculture). Crucially, the farmers are also required to keep records of grazing days and number of cows, which helps to ensure their commitment to the initiative.

Principle E3: Communication

Communication within partner groups and between different partners is very important. For the leader of an initiative it is important that everyone within the organisation knows and understands what is going on, and who the key contact is, for any particular need. In a large partnership it may not be realistic for one person to have direct contact with all partners, so partners need to develop and agree a mechanism, understood by all, for how information will be filtered down to all those involved and how decisions will be agreed in the organisational structure. As the initiative grows and develops, the issue of communication needs to be regularly reviewed between all the key actors, and updated to ensure it is still working effectively.

In the **WILD project, UK**, which covers a large territory (260km²) there is a need to break project action into a series of smaller manageable activities but also ensure that all activity is undertaken in a transparent and open way. There are steering group meetings where work is communicated across all partners and partnership meetings where all can question or comment on current activity. An email chain of all key stakeholders is maintained so that information can be shared widely. WILD has been very effective at combining the issues of meeting standards of the Water

Framework Directive, agri-environment programmes and flood reduction goals. Managing expectations is important, especially regarding flooding, but communication links between the private water company, the government agency and local communities are increasingly important. Increasing communication between farmers and local communities is also vital: this was strong many years ago but has weakened in recent decades. In the **German orchards case**, communication between key senior individuals within the Association had weakened through conflict over key principles, and increasing suspicion of motives. The initiative was thus having difficulties attracting new volunteers to replace those who left. Also, there was no direct interaction between members (producers), which threatened long-term viability. Through the evaluation support offered by the PEGASUS partners, the Association was able to acknowledge these phenomena and consider changes to overcome them.

Principle E4: Appropriate partner and institutional arrangements

Initiatives change over time as they grow and develop so it is important that appropriate partner and institutional arrangements are designed – sometimes novel institutions - and maintained throughout the lifetime of a project or initiative. Note should be made of any difficulties in getting agreements on the governance of the resource management and provision of multiple benefits. How were these agreements achieved? Which types of arrangements seem to have been the best supported, and promoted active involvement among partners? Bad experiences of initiatives relating to poor management or governance structures, and their results, should also be noted. These arrangements can be particularly important where money is involved, or responsibilities are shared, so that it is clear and transparent to all partners who is responsible for what, in the partnership. It may be unwise for too much responsibility to fall on one partner. Co-ordination of the initiative, maintaining the agreed principles of collective action, are preconditions of sustainability. The initiative's leaders and main actors should collectively plan long-term, to avoid surprises arising due to a lack of foresight.

In the **Italian tomato-processing case**, the creation of the IO represented a major institutional change/arrangement for all its members, putting in place several new rules and enforcement via partial contracts within the Association. A framework contract is signed before each production campaign, setting rules/standards for product valorisation, programming (specifying cultivated areas and yields), production methods, quality (and its assessment), safety, terms of payments, transport and additional services, penalties and compensation and premia. Under the IO it was possible to agree new and more stringent rules of integrated production. The Association made it possible to design decision support schemes to improve water management. Failure to comply with the rules is penalised in line with the seriousness of the breach, ranging from fines to exclusion of actors from the IO. A lower level of contracts is agreed between producers and processors and defines the supply, quality, quantity etc. in more detail. There were no difficulties in the initial stages of IO operation but difficulties have since arisen in situations of overproduction (resulting in penalties to farmers and delays in renewal of contracts, which have serious economic consequences for farmers). The reason was to some extent an unfair power distribution in favour of processors and insufficient rules for dealing with this kind of disagreement: thus new agreements on the sharing of costs and benefits in these situations have become imperative.

In the **Austrian Murau mountain haymilk case**, uniform and transparent terms and conditions of the agreement were a particular strength of the initiative. The connection between all value chain actors in a new organisational form is governed by a common set of rules, requiring the organization of the whole value chain. The core of the new organisational form has been a win-win situation for all participants. **The Skylark regional group** in Midden-Brabant, the Netherlands, wanted to develop an innovative arrangement to exchange the adoption of on-farm practices for improved water quality for the right to crop the land of the water board. In this way, farmers could be compensated for a loss of production due to the creation of broad buffer strips in their fields, without further payment. However, the water board has not agreed the approach.

Principle E5: Leadership

Good leadership of an initiative is vital. Sometimes this relies upon a particular individual, other times it can be a group or alliance of specific individuals or groups. Clearly, each partnership is different and leadership might be something that develops over time, but the issue is key for effective management of the initiative and needs to be an early aspect for discussion and agreement. It is difficult to be prescriptive about what ‘good’ leadership entails. However, if trust between actors is low and the differences between the interest of actors is large, the need for leadership is increased and the risk of failure, also. A strong leader who can build trust, at least between the key partners involved, will help the project develop. One aspect to watch out for is possible ‘burn out’ of leaders who carry too much of the burden of leadership. The easiest way to avoid this is to share this load among a number of partners and individuals – but that in turn requires good trust and open communication between them. In addition, partners need also to think about alternative ways of leading the project and plan who could take over leadership when a change is required, planned or unplanned. A key aspect of good leadership is effective coordination and organisation, because the collective action often involves quite complex systems. Studies of many previous initiatives prove that “without coordination and organisation the resource could be lost or the total benefit could be (even) lower than if all actors act independently” (Ostrom 1998). A minimum level of organisational skill is fundamental, to enable initiation and maintenance of collective action (Futemma at al. 2002). Key actors thinking about how best to support and develop effective leaders is therefore important.

From the **Czech amphibians and birds on wet meadows case**, it was clear that a good leader was someone who could build trust with other actors, know the local situation, be enthusiastic about the subject of the action, and a powerful negotiator. Even though someone was found with many of these qualities, they were not able to overcome differences in actors’ interests plus low trust between key stakeholders, but they were able to build trust with the general public, donors and the public administration, where interests were similar. This was sufficient to achieve some important increase in the provision of benefits, even though not all actors were fully convinced. The Czech National workshop provided deeper insight to the relationship between leadership and social capital in a country/region. Situations with less trust and more different interests between actors require stronger leaders, more capable of building trust, and more socially aware. The role can indeed be so demanding that it can easily exhaust even the most capable individuals.

1.4. Stage 4: Adaptation and review

This ‘final’ distinct phase in the successful performance of initiatives to enhance the provision of environmental and social benefits from farming and forestry recognises the fact that nothing stays constant, in this context. As a result, initiatives can only continue to succeed beyond their initial start-up if they keep abreast of changes, continue refreshing their actions and ways of working and thereby maintain enthusiasm and momentum among actors. Of course this stage is not the end-point, as the outcomes of reflection, adaptation and review will commonly be some changes to ideas, plans and implementation, thereby starting the cycle again. Nevertheless, this stage is vital to ensure sustained enhancements – without it, initiatives are likely to suffer from only ever being short-term by nature; quickly rendered out of date or inappropriate to new and emerging conditions.

Principle E6: Keeping up motivation

Once an initiative is launched, there have to be sufficient types and occurrences of motivating factors to keep everyone engaged and active, over sustained periods. All partners will be different: some will want a greater focus on activities; while others will want to discuss important issues and subjects according to their interests. For this reason it is important to seek and receive feedback when organising events so that the right mix is achieved for each partnership. The mix of undertakings linked to motivation might include activities and events (social, cultural or environmental), also more strategic or reflexive meetings. Systematic feedback from all partners enables those who lead the initiative to plan ahead, so that the initiative can build in motivation as an important factor sustaining actors’ engagement. It is worth disseminating the achievements of any initiative to actors, in order to support ownership and the motivation to continue.

The Skylark Foundation, Netherlands, uses peer-to-peer learning as a major strategy to challenge and motivate farmers to continually improve sustainability. Farmers are organised in small regional groups that meet 6-8 times a year at each other’s farms to discuss their sustainability actions and address their learning priorities. The **WILD, UK** initiative has a project board that considers and reviews progress and feeds back key findings to all partners. Partners are encouraged to generate their own ideas and these are pursued with funders and the information is shared widely so that the impact of the project is clear. Clear lines of communication and leadership, with some local and well connected and others at a higher level, are important but all evaluation responses and project initiatives are co-developed with the local partners and all have something to offer to this process.

Principle E7: Managing changes in external circumstances

This is an area where even successful initiatives may have relatively little influence over change. When external circumstances change, this can increase or decrease a particular partner’s motivations for being involved. It might also require a change in approach or way in which the initiative operates; so assigning one or two partners to keep abreast of external changes and their consequences might be a good idea. It is not possible to ‘stand still’ once an initiative is launched, so you should be prepared for change and look to embrace it, rather than resist it. In most cases this means adaptation. A common aspect of such changes is that the lines of communication or responsibility change and the initiative needs to make sure that key partners, such as those

providing any funding, remain well briefed about the initiative and what it is trying to achieve and why. Because organisation and co-ordination matter for the sustainability of any initiative, it is helpful to have at least an informal strategy and to envisage potential changes in external but also internal situations (e.g. an ageing leader). The key actors driving the initiative need to recognise and prepare this.

With the **Tomato processing example in Italy**, lack of adjustment of supply to meet demand could be seen as a changing external factor which required a response. The delay in meeting this led to over-production, which led to disagreement between producers and processors, and some farmers experienced financial difficulties. The adaptation process of the collective action was painful and relatively long (and is still not finished). Based on contract theory, we can posit that prior agreement on better rules to cover such an event could have reduced the problems that arose, for instance by ensuring a fairer sharing of risk, anticipating these developments and ensuring a more fair power distribution in response. With the **Outdoor dairy initiative, Netherlands**, changing external circumstances have affected the development of this initiative: abolition of milk quotas leading to a more volatile milk price, also the introduction of new phosphate regulations, government support to reduce dairy cow numbers, and the change to require collective applications for agri-environment-climate measures. These are all likely to have encouraged environmental and collective action by farmers. There is no evidence of direct impact on the initiative, but perhaps because the scheme was linked to a market opportunity, the influence of these policies may have been via their indirect influence upon consumer awareness and attitudes.

Principle F1: Review

Undertaking the review of an initiative is essential to help partners to take stock of progress; to highlight areas of success; and to pinpoint remaining or developing areas of weakness. Reviews can be a way to stimulate renewed motivation. It is important for partners to realise the importance of reviews, for example, to track progress against agreed objectives, to maintain motivation towards key outcomes and to set a new agenda. Reviews need to be fit for purpose and their remit and responsibility agreed by the partnership. They should cover how and why the project was initiated, when and who has undertaken work. Sometimes reviews are a requirement for funding received, in which case the rules of the funding partner must be followed. But crucially, any review should be of direct use to the partnership and the long-term future of the initiative. Transparent review of financial matters and corresponding achievements can increase the accountability of the initiators of the action and may be essential to its continuity, especially if public funding is involved. Partners to an initiative should plan and identify resources to enable reviews to take place at key points in their development – ideally, ongoing review by an individual or body who is able to be a ‘critical friend’ to the initiative, independent but well-informed, tracking and reflecting on progress, should be agreed.

The **UK WILD project** includes review meetings and a short summary of the 3 year project (Phase 1) has been co-developed by the partnership. This has been discussed across the whole partnership and collective co-development of a second phase has taken place. The presence of a university partner among the group is crucial for on-going evaluation of the project and the development of a framework for the collection of evidence that can be used to assess the impact of the project. In **the Murau case in Austria**, a third party controls and monitors the project providing a guarantee regarding compliance, contributing to a positive image and establishing consumer trust. The

Research Institute of Organic Agriculture (FiBL) is commissioned to conduct assessments based on a range of different methods (e.g. ISO 14040 and 14044) and results are communicated also to consumers. Monitoring of the initiative is not described in detail but as other retail chains have now established similar schemes, the initiative might be considered as a model of success.

Principle F2: Collecting evidence of impacts

Determining the success of initiatives is important and is often linked to funding: clear evidence of the impact of the initiative assists a continuing flow of resources. However in some circumstances it is difficult to demonstrate causality, especially in multi-objective projects, because there are many possible routes through which change might have occurred. Some types of change can be medium to long term, notably ecological change and adjustments in farming practice and behaviour, so the collection of evidence should focus on demonstrating the direction of travel rather than the ultimate outcomes. In ecological terms this might mean measuring change in a range of species rather than a specific species. It is worth determining at the start of the project what the key types of impact are likely to be, measured both in outputs (e.g. number of farmers involved, km length of ditches managed etc.) and outcomes (e.g. changes in water quality, increase in soil organic matter); so that measurement can be put into place. Information on progress of the project/initiative and its outcomes/results/impacts are vital for encouraging sustainability of the initiative. If well provided, as feedback to actors participating on the initiative, it can maintain or even increase actors' motivation and adds clarity to the purpose of collective action (Slangen et al. 2008), especially for environmental and social benefits which are sometimes difficult for actors to observe directly. Partners should agree how they can build in the collection of evidence, early on in the process of developing the initiative.

The **WILD UK** evaluation framework that was applied within PEGASUS was co-designed with the delivery partners, which ensured that they could supply the information for collective reporting. The **Skylark Foundation in the Netherlands** monitors what its farmers do to improve the sustainability of their farms, but has found that the food chain partners increasingly ask for information on the impact of the approach. Skylark is therefore working now to expand its monitoring scheme.

4 Concluding reflections

This compendium of lessons from PEGASUS case studies and systemic analysis, discussion and validation with a wider group of stakeholders from across Europe highlights the opportunities and challenges for enhanced provision of environmental and social benefits from farming and forestry. It is our aspiration that, by producing and promoting this collection of principles and evidence, the project can encourage greater enthusiasm among actors to identify and develop local initiatives and thereby secure real changes in practice. We also plan to encourage actors to share their experiences and thus to improve the learning potential of the project, for some years beyond the end of PEGASUS, by maintaining the website as an active platform for exchange.

The combined experience of the consortium partners has been strongly positive and motivational, despite including case studies which demonstrate problems and issues, almost as often as those which appear to have been overwhelmingly positive. What emerges from the analysis is that real

enhancement is possible in a wide range of conditions and that at a local territorial or supply-chain level, actors can put aside differences and work together in a mutually beneficial way to promote synergies between private and public motivations and goals. In this way, specific and targeted policies can be understood as part of the elements for successful transition towards sustainability, but by no means the only part that matters. Wider societal norms, framing conditions and regulations, and the enthusiasm, sensitivity and capacity for learning and adaptation among local actors, especially farmers and foresters themselves but also a range of complementary partners, are equally worthy of attention, evaluation and support, in this context.

References

- Futemma, C., Castro, F., Forsberg, M., Ostrom, E. (2002). The emergence and outcomes of collective action: An institutional and exosystem approach. *Ambiente & Sociedade* - Ano V - No 10 - 1o Semestre de 2002. Available at: <http://dlc.dlib.indiana.edu/dlc/handle/10535/6359>. Last accessed: 30 May 2018.
- Hagedorn, K. (2008). Particular requirements of institutional analysis in nature-related sectors. *European Review of Agricultural Economics*. Vol. 35(3), pp. 357-384.
- McGinnis, M. D., and Ostrom E. (2014). Social-ecological system framework: initial changes and continuing challenges. *Ecology and Society* Vol 19 (2). Available at: <http://dx.doi.org/10.5751/ES-06387-190230>. Last accessed: 30 May 2018.
- Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge University Press.
- Ostrom, E. (1994). *Neither Market Nor State: Governance of Common-Pool Resources in the Twenty-first Century*. Lecture presented June 2, 1994, International Food Policy Research Institute Washington, D.C.
- Ostrom, E. (1998). *The institutional analysis and development approach*. In, *Designing the institutions for environmental and resource management* (E.T. Loehmann and D.M. Kilgour (Eds). Edward Elgar, Northampton, MA.
- Ostrom, E. (2000). Collective Action and the Evolution of Social Norms. *Journal of Economic Perspectives*. Vol. 14 (3), Summer 2000, pp. 137-158.
- Ostrom, E. (2005). *Understanding institutional diversity*. Princeton University Press.
- Ostrom, E. and Cox M. (2010). Moving beyond panaceas: a multi- tiered diagnostic approach for socialecological analysis. *Environmental Conservation*, Vol 37(4), pp 451-463. Available at: <http://dx.doi.org/10.1017/S0376892910000834>. Last accessed: 31 May 2018.
- Scott J. and Marshall G. (2009). *Dictionary of Sociology*. (3rd Edition), Oxford University Press.
- Slangen, L.H.G., Loucks, L. and Slangen A. (2008). *Institutional Economics and Economic Organisation Theory*. Wageningen academic publisher. Wageningen.