CASE STUDY

TRADITIONAL ORCHARDS (GERMANY)

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Kerstin Huelemeyer, Christoph Mathias, Simone Sterly
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**Summary**

<table>
<thead>
<tr>
<th>Country</th>
<th>Germany</th>
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<tbody>
<tr>
<td>Region</td>
<td>The initiative operates in the three regions Kraichgau, Bergstraße and Odenwald (border area of Hesse and Baden-Wuerttemberg)</td>
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<tr>
<td>Farming/forestry system</td>
<td>Traditional orchards (agroforestry)</td>
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<tr>
<td>Kind of action/main mechanism</td>
<td>Supplier Premium to producers, who produce apples certified organic which are processed and sold by a press house in the form of organic juice</td>
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| Key ESBOs | Current key ESBOs comprise  
- biodiversity in terms of ecological diversity, genetic diversity and pollination  
- landscape character and related cultural heritage  
- Educational activities  
Other ESBOs might become key in the future as well, e.g. rural vitality. |
| Key drivers of ESBO provision or of initiative/action | Demographic change  
Bad ecological state of half of the trees  
Growing market opportunity for (organic) supplier premia |
| Total no. of land managers (farmers, foresters, etc.) involved | 45 producers |

**Short summary of the case:**
The Support Association for Regional Traditional Orchard Cultivation (FÖG) is one of the oldest supplier premium initiatives in Germany, founded in order to maintain the regionally typical landscape element and related environmental benefits (esp. biodiversity) through a better price for producers and additional collective activities.
1 Introduction: What is the case study about?

This case is about a collective action for traditional orchards (other names are meadow orchards or scattered orchards). This form of cultivation comprises the regular use of single stemmed orchards with high fruit trees (minimum required stem height is not defined but 1.8m is recommended, NABU 2015) as well as the area where they stand, which are in Germany mostly meadows. In Europe, large traditional orchard areas can be found in Northern Spain, France, Luxemburg, Germany, Swiss, Austria and Slovenia. These characteristic elements of cultural landscapes show a decline in quality and quantity since the 1950s. In response, in Germany awareness for the decline arouse among nature conservationists in the 1980s, leading to a number of initiatives which intended to maintain the traditional orchards.

Our case study is about one of the first of these initiatives, the Support Association for Regional Traditional Orchard Cultivation (Fördergemeinschaft regionaler Streuobstbau, FÖG). It operates in parts of the three natural areas Bergstraße, Odenwald and Kraichgau, approximately 2,973 km², covering the southern part of the state Hesse and the North-West of the state Baden-Wuerttemberg (Figure 1).

Figure 1: Area of the FÖG (termed project area)

In 2013, the initiative had 54 producing members who cultivated traditional orchards on 125 ha and additional 35 supporting members who are not producers themselves. These are interested individuals as well as three local groups of the Nature and Biodiversity Conservation Union Germany (Naturschutzbund, NABU), one BUND (Friends of the Earth Germany) group and the city of Mannheim. Currently, there are 45 producers and 36 supporting members left.
but no numbers on the area available as the FÖG lost track on this information. In addition, the FÖG is not able to state clearly how many of the producers are farmers.

ESBOs which are provided through this land use activity comprise sustainable and sufficient production of food, water quality, climate adaptation and mitigation, healthy functioning soils, biodiversity, maintaining and enhancing landscape character, public recreation and education, and rural vitality (see section 2.3 for detailed analysis).

The initiative was founded in 1989 in order to maintain the regionally typical traditional orchards through a supplier premium. FÖG activities comprise inter alia communication with the press house, record-keeping (members, area covered, number of trees), taking care of the certification as organic, funding applications, quality assurance, and training of members. These activities are carried out mainly by members of the executive board. The collaborating press house (*Falter Fruchtsaft*) is involved in organic certification activities and quality assurance. In addition, they are responsible for marketing and sales activities and organise and carry out premium payment to producers. Other actors involve the certification body, two laboratories, an organic tree nursery, and the Nature Park *Neckartal-Odenwald*, in which most of the traditional orchards are located and which in some years supported the planting of young trees.

In the beginning, the initiative carried out marketing and sales of the juice itself, which changed to the press house *Falter Fruchtsaft* in 2002. The FÖG has been certified organic according to the EU organic regulation in 1998. It now funds pruning of the trees, as half of the trees are currently in bad condition (not well maintained due to age structure of producers as well as economic reasons: ‘Price of fruit gives no real incentive for maintaining the trees and some producers are not depending on the income’, FÖG 2015) and they fund planting of young trees. In addition, they offer fruit tree pruning courses open to the public.

The FÖG operates in the border area of the two German states Hesse and Baden-Wuerttemberg. The two states differ substantially in terms of funding and support for orchard maintenance. While in Baden-Wuerttemberg high importance is attributed to this traditional form of land use which still covers a substantial area of land (around 9.2 Mio orchard fruit trees) and funding through different programmes has a history; Hesse with its estimated 0.5 to 1 Mio trees, started funding and support only in the current EAFRD funding period (2014-2020).

Future risks to provision and societal demand of ESBOs (Environmentally and Socially Beneficial Outcomes) provided through orchard meadows concern economic deficits and decreasing knowledge on meadow orchard maintenance. Other than expected (cp. Sterly & Huelemeyer 2016), the upcoming termination of the spirits monopoly in Germany seems not influential – but demographic change. Most of all, however, half of the existing orchards in the area are in bad condition and a considerable amount of the trees has grown old. If no new trees are planted and well maintained ESBO provision through orchards will decline rapidly. In addition, the most important challenge for the initiative itself is to keep up the current organisational structure as association or reorganise to ensure continuity, as there are not enough volunteers for the executive work.
This is where PEGASUS action research connected, as the FÖG had already thought about setting up a project group to explore the future options of the initiative. The IfLS-PEGASUS team led this process, invited to and facilitated four scenario and strategy workshops and prepared the results for future activities. The process and the results were then analysed by the IfLS team to give answers to the main research question: How does an initiative like the FÖG successfully contribute to the provision of ESBOs? For us, the question implies that we look at different ESBOs taking into account their interrelations, and find success factors and barriers for the provision. We trace back the development of the initiative and the related ESBO provision, and explore future possible developments in order to see, what would be strategies to maintain or improve ESBO provision in the area.
2 Definition of the social-ecological system (SES) studied

2.1 Figure of the SES

RESOURCE SYSTEM
125 ha of traditional orchards (agroforestry) managed by the FOG, located in Bergstraße, Odenwald and Kraichgau, which is close to metropolitan area Rhein-Neckar; RS characterised by low productivity; half of the trees in bad condition; single rejuvenation and maintenance efforts

RESOURCE UNITS
Depending on which ESBO we look at: biomass from meadows; water; fruit trees providing shadow, fresh air, stable slope soils due to surface roughness preventing wind erosion, stock of apples, stock of orchards shaping distinct traditional landscape scenery, visitable by school classes, meeting point for people of the village when harvesting, recreation etc.

ACTION SITUATIONS
Little marketing activities but organisation of organic certification and supplier premium → maintaining economic value and existence of RS; (Few remaining) information activities → attribution of societal value to RU, focus is on few environmental outcomes; (small number of) training activities on tree cutting → ESBO provision; Conflict between executive board and managing director → swallows last energy of remaining active members; No identification of producers with product → do not consume FOG juice themselves; No interaction between producers, most don’t know each other → no sense of community and corporate identity, no appreciation or no awareness of social ESBOs; little use of new ICT (operate a basic website) → channels for reaching new and younger members are missing; reluctance to work with other organisations or to set up new actions (lack of workforce and resentments) → no new input or members

GOVERNANCE SYSTEM
Initiative for a supplier premium with networks along the regional production chain; funding through RDPs and state/regional funds + (supra-national) regulations (EU regulation on organic production, EAFRD, WFRD); regional and local control mechanisms

ACTORS
Direct: FOG executive board, 45 FOG producers, 37 supporting members (including three local NABU groups, one BUND group, one community), over aging of members and decrease in number; trustful and long relationship with: Falter Fruchtsaft (press house), ABCert (organic certification body), 2 labs; long but sometimes difficult relationship with organic tree nursery; Indirect: local communities, regional authorities (NUTS3), regional park, state authorities

MACRO ISSUES:
Demographic change, global market and industrialisation of apple cultivation and processing, local initiatives on orchards increase, new markets emerge (e.g. cider in cans), new approaches to social engagement, e.g. campaign- and fun-oriented, web-based

Figure 2: Outline of the main structure of the SES for the basic situation 2016 (adapted from Ostrom and Cox 2010; McGinniss and Ostrom 2014)
2.2 Description of the SES

The relation between traditional orchard cultivation and the provision of ESBOs through this land management activity is quite straightforward (e.g. Lucke et al. 1992, Herzog 1998, 2000, Weller 2006, Plieninger 2011, NABU 2015). The key issue is how to maintain the traditional orchards which is strongly related to the economic subsystem – but as we will show also to the social subsystem.

The FÖG has started working on this topic in 1989, responding to the decline of orchards. The initiative was founded by environmental activists and correspondingly, the main objective was to protect the cultural landscape element and its related environmental value, with a main focus on biodiversity (provision of habitats for endangered species and maintenance of old varieties). Further environmental objectives were added over time, after correlations of orchards and their additional value were published: protection of soil and water bodies, contribution to a better local climate.

There was and still is only limited awareness of socially beneficial outcomes, it is only the educational function of orchard meadows, which is increasingly acknowledged. The FÖG conducts own pruning courses open to the public, which is mainly due to the fact that the director of the board makes part of his living from pruning of orchards but also because half of the orchards are in a bad state and need (better) pruning. In addition, public programmes have set-up a training for orchard pedagogues, who are supposed to specifically work with schools, which has also helped to spread the idea of the educational value of orchards. Other ESBOs like contribution to rural vitality via social inclusion activities (e.g. working on orchards together with migrants), increased communication through common activities, celebrations etc. are not taken into account and addressed by the FÖG.

The main governance mechanism of the FÖG is paying a supplier premium based on the idea of “protection through use” – connecting the objective of nature conservation with market principles. In the beginning, the number of producers joining the FÖG increased rapidly, not for idealistic but economic interest. This is still one of the drawbacks of the system, as the FÖG has failed filling the producers with awareness and pride for the side aspects of their production: the provision of ESBOs.

“Most of the producers make sure their apples get to the press house Falter so that they receive the supplier premium. But they don’t drink the juice themselves. Instead they buy those cheap china apple juice concentrates at discount stores!” (Interview statement FÖG member).

“The FÖG producers don’t appreciate and identify with the product” (Interview statement external).

The FÖG converted to organic production in the mid 90’s, as one of the two press houses they worked with set organic production as a standard requirement for taking FÖG apples. In turn, the other press house, Falter, set up an organic juice product line. While Falter survived and still cooperates with the FÖG, the other press house was subject to industry consolidation processes. Today, the organic juice production line is one of the unique selling points of Falter.
Beside organising the organic certification and holding pruning courses, support of planting of young trees is one of the FÖG activities (around 100 per year are funded, so that producers only have to pay one third of the original costs for organic apple seedlings). In addition, producers are assisted with funding applications within EAFRD and related state programmes (only in the federal state of Baden-Wuerttemberg and with little response of producers, see sections 4.2 and 4.3). Furthermore funding for marketing activities is applied for, while other funding sources, e.g. from the regional Geo-Nature Park, are not taken advantage of, mainly due to administrative burdens and the low capacities in personnel (see sections 4.1-4.3).

The FÖG is rarely connected with other initiatives. Opportunities not taken so far comprise e.g. tourism related activities pushed at NUTS3 level, which are mostly related to high appreciation of the landscape and therewith a strong interest in maintaining this traditional landscape element. Other initiatives now try to use the cultural component of traditional orchards for integration of immigrants (bringing together people at harvesting time, providing a sense of tradition and culture in the states of Hesse and Baden-Wuerttemberg). A LEADER LAG in the region funds orchard meadow related products but the FÖG has not taken up contact. The FÖG also declined the offer of a public authority at NUTS3 level to participate in the creation and production of a new apple mix beverage because of its current lack of volunteers. New initiatives like the orchard savers (Streuobstwiesenretter) focus both on socially and environmentally beneficial outcomes but also connect to market opportunities. Instead of collaborating with them, they are observed by most FÖG members with scepticism and are perceived as competitors (which has changed within the scenario development process initiated by the PEGASUS team, see section 9). The Streuobstwiesenretter perceive the FÖG as stolid, which might be related to the aging of the FÖG or their lack of certain enthusiastic members who are able to devote time for the association’s work. FÖG representatives draw a parallel between the new young initiative and their own success in early years:

“The Streuobstwiesenretter have members who are able to combine the initiative’s work with their daily work as it is related. When the FÖG started, we had these very active people, too. But now there is nobody like that left.” (Interview statement FÖG member).

In general, there is a lot of room for synergies in the region.

2.3 Levels of ESBO provision, trends and determinants

A number of studies has been carried out, reflecting on the topic of traditional orchards and the quantity and quality of ESBOs (e.g. Lucke et al. 1992, Herzog 1998, 2000, Weller 2006, Plieninger 2011, NABU 2015).

The most frequently named and communicated ESBOs provided (e.g. NABU 2015) are

- biodiversity in terms of ecological diversity (up to 5000 animal and plant species may exist on an orchard meadow), genetic diversity (German orchard meadows comprise 3000 varieties of fruit species) and pollination
- landscape character (as orchard meadows have been a characteristic landscape element contributing to the distinctness of the landscape in the last centuries) and related
cultural heritage (preservation of the cultural landscape through managing this traditional farming system)

- Educational activities (pruning courses, information on orchards)

Other ESBOs which can be associated comprise

- Sustainable and sufficient production of food (orchard meadows provide old fruit varieties which are suitable for allergy sufferers; in contrast to plantations the production is more sustainable, no use of pesticides etc.)
- Water quality and supply, soil protection, and climate mitigation (orchard meadows are a permanent culture with no groundwater input, no use of heavy machinery, grass prevents soil erosion, and grassland contributes to carbon sequestration)
- Climate adaptation (orchard meadows improve the local/micro climate)
- Outdoor recreation and experience of nature (either by enjoying the traditional landscape or by managing orchard meadows)
- Rural vitality (Numerous activities and events related to the maintenance of orchard meadows, harvesting as well as communication and information contribute to active and socially resilient rural communities)

All of these ESBOs are provided through traditional orchard cultivation. The FÖG focused in the beginning on biodiversity and landscape management. It started to carry educational activities (see 2.2) in order to improve maintenance of trees and opened these courses up to the broader public. In addition, the FÖG is now aware of the water and soil related positive benefits, promoting them as well on their homepage. The active targeting of ESBOs might change in the course of the future pathway the FÖG might take. The German PEGASUS team developed three scenarios together with the FÖG (see section 9). Especially the third scenario foresees a direct targeting of socially beneficial outcomes, which are not considered by the FÖG but could give the initiative a strong boost (acknowledging and realising its potential contribution to rural vitality would in turn lead to a more vital FÖG as well).

The German PEGASUS team has developed a concept and a list of indicators for assessing the levels of provision and the demand of ESBOs and started to acquire and quality check the relevant data (for more detail see section 9.4). It was not able to test and apply the concept, however, as the FÖG lost track of necessary information and was not able to provide the necessary resources to restore it. Thus, it made no sense to further acquire necessary data and then locate the orchards together with the FÖG in order to have a spatial reference which would have been the basis for applying a GIS based approach.

In general, we need to keep in mind that orchard meadows are a complex ecosystem with multiple interrelations influencing the actual provision of ESBOs of each orchard meadow, which makes a quantification difficult if not impossible. On the example of biodiversity, we would like to illustrate the problem: An orchard meadow may show, e.g. up to 5,000 animal and plant species, which depends on the maintenance of trees, the use of the meadow beneath the tree, etc. It would require field work to analyse the specific contribution of each meadow.
Main determinants of improvements in ESBO provision and key limiting factors

Looking at the related markets, globalisation and industrialisation of apple cultivation has lowered the profitability of conventional orchard growing considerably, while at the same time, a growing market share of organic products can be observed. In 2015, the business volume of organic products increased by 11% (BÖLW 2016). In addition, the demand for regionally produced products as well as for surcharge and fair trade products increases.

Stimulate by the increasing demand for regional and organic products new markets emerge, e.g. cider in cans, regional apple vinegar. The remaining, regional press houses are able to find niches and benefit from this development. On the other hand, a limiting factor might become apple imports, mainly from Poland and China, which have led to considerably low prices for conventional apples. If in China and Poland, e.g., organic apples and processed products are produced cheaper, they might lower the currently high prices for organic apples.

From a policy perspective changes in the organic regulation as well as changes in the seed regulation would have an influence on the SES. The first determines one of the main governance mechanism, organic certification, and the latter might lead to considerably high costs if old varieties would have to be licensed and in the end to further decline of the number of orchard meadows.

A limiting factor for initiatives clearly is demographic change, which means there are more older than young people who can engage potentially, while in addition, young people move to cities for educational and professional reasons. This potential limitation is, however, mitigated through the currently observed tendency of young people to come back to rural areas when starting a family with the intention to provide their children with a sense for nature. In addition, there is a trend towards a “hobby with purpose” and “mindfulness” etc., leading e.g. to a revitalisation of the honey-production sector (and often a related interest on orchards), interest in production of own food, juice, or cider etc. Currently, the FÖG is not able, however, to connect to and profit from this trend as it is not known to the broader public in the regions, neither does it have an active and/or creative image.

In this respect, the use of social media for networking and engaging and the tendency towards new approaches to social engagement, e.g. more campaign- and fun-oriented and web-based will shape future initiatives as well. Initiatives can adapt and use new media as a way of approaching and communicating with (potential) members. If initiatives fail to provide such activities, it will be challenging for them to maintain their membership base.

Knowledge on ecological and biodiversity issues is perceived to have declined, which might become another limiting factor for the work of the initiative and attracting future members:

“Most of the people simply don’t see the connections between orchards and biodiversity anymore. And if you don’t know anything about the rich flora and fauna which is there, you won’t do anything to maintain it.” (Interview statement external).
2.4 Ancillary economic and social benefits provided ‘on the back’ of ESBOs

The initiative does not aim directly at growing in the economic sense and is not creating jobs but helps to preserve jobs at the regional press house. If the FÖG were able to overcome its problems and successfully implemented the developed strategies (see further sections 4.2 and 4.3), it could bring pectin from orchard meadows to product maturity and contribute to smart growth.

3 Shifting societal norms, collective learning and voluntary actions

Shifting societal norms

The well-established structures and processes of the FÖG are challenged by shifting social norms about political activism and new forms of participation. The FÖG was founded in 1989, when the institutionalization of the environmental movement started (cf. Brand 1999: 252). As one of the first supplier premium initiatives, the FÖG established its innovative approach to preserve orchard meadows which was based on the idea “protection through use” (interview statement FÖG founder). It implied long-term collaboration of environmental activists, farmers, and press house(s). The main mechanism was to raise the interest of producers through a supplier premium, and raise consumer awareness through making them pay the surcharge.

For FÖG producers their orchard meadows are often a family heritage they want to preserve and enjoy preserving. The next generation however often lives at a distant place or hardly shows any interest in cultivating orchard meadows for themselves. The attitude towards the family heritage and the cultural or social value of orchard meadows has changed. However, this does not mean there is no interest in orchard meadows in the group of 25 to 35 years old people anymore. But today’s environmental movement is influenced by new forms of activism often connected to new media. Voluntary commitments for non-profit organizations like the FÖG have been changing. Micheletti & McFarlane (2015) refer to swarm-organized collective actions, web blogs and other applications of new media for the purpose of political activism as “creative participation”. While the FÖG still focuses on its supplier premium scheme with products directed at conscious consumers, new and more flexible forms of activism are not applied. The success of another regional initiative for the preservation of orchard meadows, the Streuobstwiesenretter shows that people are generally interested and willing to volunteer in that field. An analysis of activities and participants of the Streuobstwiesenretter shows that the motivation for participation is more than environmental protection of the habitat. Social aspects gain more relevance, like working together in a group and/or having a common family hobby; preserving the traditional landscape; doing something physically challenging outside as contrast to an office job; following “back to nature”, “do-it-yourself” and “mindfulness” concepts, etc. These activities in turn contribute to rural vitality, outdoor recreation and educational activities. Whereas the Streuobstwiesenretter is a quick growing network of mostly younger people, the FÖG is struggling to find members willing to take responsibility.

Even though the young initiative of the Streuobstwiesenretter is admired for their ability to mobilise young people, aging FÖG-producers can hardly imagine to open their orchard meadows for interested people outside their own family (e.g. through organising harvesting
events). Holding on to their ‘family orchards’ prevents the implementation of new approaches. One member of FÖG’s executive board described the FÖG’s attitude towards the new networking approach of the Streuobstwiesenretter very much reserved: “People in the FÖG think ‘well, those young guys sit around and talk but do they really work on the meadows?’”. It appears as if the FÖG did not realize that anything strengthening the Streuobstwiesenretter’s network is beneficial to their cause. Therefore, the networking approach of the Streuobstwiesenretter is not considered “serious enough”, in comparison to the FÖG’s producer oriented approach. Streuobstwiesenretter activities are not accepted as equally important or potentially successful. Nevertheless, their success in attracting young people for preserving orchard meadows is seen as something the FÖG has failed to accomplish.

The case study shows that societal norms have not been shifting within the FÖG initiative as they have in the larger society especially as an issue between generations. The FÖG is struggling with finding a strategy to adapt to the new circumstances. Without active members, the association will not be able to maintain the supplier premium model to preserve orchard meadows. Possible pathways, including the redefinition of norms are elaborated in chapter 5. The case study also shows that other actors like the Streuobstwiesenretter or the press house (see below) have found ways to connect social and ecological aspects to provide attractive leisure time activities and preserve orchard meadows or secure supply of apples from orchard meadows.

**Collective Learning**

Knowledge exchange activities are focused on formal transfer via courses: The FÖG initiative organizes pruning lessons with a focus on orchard meadows. The courses are targeted to members of the initiative and interested non-members, thus also promoted to the general public. Teaching activity increases the preservation service of the initiative beyond its actual membership base, as additional individuals are enabled to prune their trees properly and maintain orchard meadows in accordance with environmental aspects. At the same time, it improves the quality of orchard meadows of its members and contributes to a shared understanding of orchard meadow farming within the initiative. This is beneficial regarding the quality of the harvest, the organic audit and contributes to preservation of orchard meadows and ESBO provision. Key actors for pruning courses were both the director of the board and the executive officer. The first was also the instructor whereas the latter was responsible for organising the pruning courses. The FÖG observes an increased interest in the last years. In 2016, around 100 persons attended FÖG pruning courses.

There is no exchange focused on learning with other actors in the SES like the Press House or the Nature Park. Individual members participate in a LEADER working group with the aim to establish a local brand. The FÖG association is however not included in those talks as this project has not been communicated inside the FÖG.

Within the initiative, hardly any collective learning takes place. The individual supporting member as well as producers is not involved in any activities and the FÖG does not offer events or any other opportunities to interact or facilitate collective learning. Some members are responsible for specific tasks, like applying for grants or preparing the organic audit. But the fact,
that each volunteer is responsible for a different task and the fact, that the volunteers live scattered across three regions prevent collective learning from actually taking place. In addition, producers do not show interest in and recognize the amount of work that is done by the volunteers.

The federal state of Hesse does not offer classes on meadow orchard farming or tree pruning, which makes private activities in the field, like the one of the FÖG, especially valuable for ESBO provision of orchards. In Baden-Wuerttemberg, pruning courses are organised by the regional administration (NUTS3).

Beside pruning courses, other activities would be required to preserve and enhance existing knowledge on maintenance, harvesting, organic certification, apple products or application for funding. This may include setting up networks of exchange with other orchard meadow initiatives. In addition, collecting and systemising information and experiences would be helpful. This might lead to a comprehensive guideline for preserving orchard meadows. Furthermore, regular, periodic interaction of FÖG members would increase knowledge and at the same time facilitate a common understanding of the association and promote its development.

At this stage, however, none of the members, including the executive board and the executive office have taken responsibility for establishing knowledge transfer within the organization. Therefore, it missed to benefit from a systematic improvement of processes, e.g. applying for grants. The lack of awareness as well as structural barriers prevent collective learning.

The association is based on voluntary work. For its continuation, it is important to find enough volunteers to carry out the specific tasks. Interviews show that the focus is on finding a successor, but there are no processes to preserve gathered knowledge on the tasks by the predecessor. The interviewees did not worry about the loss of knowledge and experience - despite the fact that in one case the person was assigned to a task for almost two decades. Geographical conditions contribute to the isolation of the individual members and constitute a spatial barrier for collective learning processes. The individual members are scattered around three regions; therefore, meetings require travelling great distances. Activities to facilitate collective learning are time consuming. The members already volunteering are trying to not spend even more time working for the initiative.

**Changes and processes in the case study**

Activists of the environmental movement established the FÖG initiative as a market based approach to preserve orchard meadows. This is a reaction to policy incentives between the 1950s and 1980s, which had been aimed at intensification of apple production, thus increasing productivity. The founders of the FÖG wanted to preserve orchard meadows, as they knew about the habitat function. In addition, the change of the traditional landscape was another motivation.

First, the initiative coordinated the processing of the apples with a regional press house, concentrated on selling and successfully marketed the produced juice themselves. It later decided to leave sales and marketing to the press house they cooperated with, in order to reduce the
amount of individual private time spent for FÖG related work and transfer the economic risk to the industry.
As there were problems with one press house, an additional one was found which required an organic certification of the meadow orchards. The FÖG therefore started to organise organic certification before any policy incentives were available. Until now it is a very attractive model for small scale farmers and private owners, who are thus able to benefit from the development of the global market (decrease of prices for conventional apples while prices for organic apples increase). Until that time, the first press house did not have an organic product line. Together with the organic certification of the FÖG the press house introduced its organic product line. Today, the press house, which is again the only collaborating press house, is fond of having this product line and will continue with other organic producers in the case the FÖG association will be liquidated.

Nowadays, the RDPs of Hesse and Baden-Wuerttemberg fund activities for the preservation of traditional landscapes and incentivise change to organic farming. Policy approaches reflect a high appreciation of orchard meadows and the ESBOs provided and offer a variety of support mechanisms (see section 4.3). Regarding the FÖG, policies did not have an effect on the above described activities as these were carried out before the programmes were implemented. Funding of marketing activities of press houses is relevant, however, as the market situation of small press houses is difficult.

4 Mechanisms, (collective) actions and governance arrangements to enhance the level of ESBO provision

4.1 Organisational capacities, leadership, networking and communication

The network
By the 1980s orchard meadows were undervalued in society. Lower productivity compared to plantations and policies supporting the cutting of orchard meadows resulted in a rapid loss. In 1989 environmental activists established the FÖG association with the aim to implement a supplier premium scheme for orchard meadow farmers. The higher price should offer farmers an incentive for continuing to manage traditional orchard meadows. Until today the FÖG is organizing the premium scheme in cooperation with a press house. The stakeholders configuring the initiative is reflecting its origin until today:

- Supporting members are individuals interested in the protection of the environment, NGOs from the field of environmental protection (BUND and NABU), but also a few towns and cities. They all support the initiative financially. Individuals additionally contribute through their volunteer work. The decreasing interest of volunteers to work for the FÖG has put the initiative into a deep crisis of leadership.
- The executive board and the executive office: The executive board consists of seven persons. Since 2013 they are supported by an executive office with one woman working part-time. Tensions and conflicts increasingly shape their collaboration.
• Owners of orchard meadows and farmers of orchard meadows: Producers organized in the FÖG benefit from the premium scheme the initiative has established. Nevertheless, nearly none of the producers are willing to volunteer for the initiative. In addition, most of them have grown old and retire from the association as a whole as they lack a successor for their orchards.
• The press house has a contract with the FÖG to buy up the complete harvest of the FÖG producers (allowing producers to keep up to 10% of the harvest for themselves). It processes the apples and sells an apple juice and a juice drink under the company’s name with the add-on “FÖG juice”. The relationship between the initiative and the press house appears to be ambiguous. On the one hand, the members of the FÖG value very much the press house as reliable partner and that the owner herself has been the contact person. On the other hand, the scenario development process showed that there has been lots of miscommunication in the past.

The active players within the initiative are the board and the executive office. A small number of members who are neither on the board nor in the executive office also play an important role, e.g. if they took responsibility for a specific task because they possess specific experiences, like preparing grant applications.

**Leadership**

The FÖG association has established formal structures in accordance with the Law on Associations (Gesetz zur Regelung des öffentlichen Vereinsrechts – Vereinsgesetz), which makes the executive board the governing body. The chairman of the board has a strong influence on the development of the initiative. The executive office is the managing body and responsible for organizing the services of the initiative. It is subject to the authority of the board. To understand the situation the FÖG finds itself in, it is crucial to look at the issue of leadership. In 2009, a new chairman was appointed who tried to bring in new ideas, but found it hard to activate members to bring ideas into life. As he himself makes his living as a professional tree pruner (and sells additionally self-produced apple juice to small health stores), he succeeded in setting up the pruning courses, which bring him additional income as a side-effect. He considers moving to Switzerland for private reasons in the long term, and wants to give up his position as chairman. In order to reduce his work, an executive office was opened up in 2013, with a free-lance journalist working part-time. The person neither experienced working as executive manager, nor in organising organic certification etc. When the long-standing and old deputy chairman resigned, a friend of the chairman joined the FÖG and became his deputy. He was designated as successor and, by profession the owner of a Public Relations Agency, brought in many new ideas and a lot of enthusiasm. The initiative was about to redefine itself. After only one year, he resigned also for private reasons. The chairman became increasingly frustrated, conflicts between him and the executive manager arouse on how to carry out the work and how to continue with the FÖG. His interest is obviously to liquidate the association as no successor can be found - instead other board members indicated they wanted to give up their position as well. The executive manager felt increasingly as fighting alone – and declined good ideas on future projects coming from outside as she felt overburdened (e.g. a LAG who wanted to start an orchard project). She carried out a survey among the members on willingness to work actively in the FÖG - with a low rate of return and nearly no indication of interest to
engage. This led to her idea of setting up a working group on the future of the FÖG with the objectives to define the way to take, resulting in the scenario development process implemented by the PEGASUS case study team.

Both, the chairman of the board and the executive manager are the most influential people in the initiative, which is a contrast to early founding years of the initiative when a huge number of people engaged enthusiastically and actively. Now, the remaining active players are working against each other. They lack a common understanding of development goals and a trustful working relation. Currently, both a motivated and visionary leadership and a skilled, forward-oriented active management are lacking, which are additional challenges to the initiative on top to the decreasing number of active members.

**Work process and communication**

The initiative has established processes where individuals take responsibility to fulfil a task such as organizing the organic certification. If the executive office is not the implementing entity, volunteers are supported with information or contacts. For most of the members, this means no direct interaction with other members. Volunteers with a specific role or task communicate on a regular basis with other volunteers. Especially the board meetings take place on a regular basis but also the executive office is a focal point of interaction.

As mentioned before, the current model of organizing a premium scheme for orchard meadow farmers is not sustainable. The initiative is not able to attract volunteers to replace withdrawing members. At the same time, the communication that takes place between the head of the board and the executive officer is shaped by irreconcilable views and mutual suspicion (see section above).

The case of the FÖG shows that it is crucial to find ways how to keep an institution vivid after the first decade. Currently, a number of new initiatives arise, e.g. the Orchard Savers (see section 3), which has been set up by four young men. As for the FÖG, the challenge for these initiatives will be to organise itself in the long-term, so that it becomes independent from the few founding shoulders and at the same time still profits from motivated and skilled volunteers full of ideas.

**Positions of the different stakeholders in relation to the FÖG**

The press house is the most important cooperating partner. It guarantees to accept the harvest and to pay a premium for it (see section 4.4). It produces apple juice and uses the initiative’s name FÖG to its organic apple juice product line. The apple juice from traditional orchard meadows is a unique selling point that distinguishes the press house’ organic apple juice from the organic apple juice of most competitors. Nevertheless, if the initiative were to be dissolved, the press house would acquire organic apples from former FÖG members or other regional producers – and is already establishing contacts (oral information at one of the meetings).

NGOs such as regional branches of BUND or NABU are members of the initiative. They support the initiative financially. Individuals who are member of the FÖG as well as one of the NGOs have led to a close connection between the associations. Nevertheless, this does not result in a close cooperation between the different platforms for the protection of the environment.
Other stakeholders such as the Nature Park, or the Streuobstwiesenretter initiative have expressed to support the FÖG association and are willing to cooperate with the association in areas of common interests. These stakeholders show a wait-and-see attitude as the FÖG association needs to solve its internal issues and rebuild capacities before it could develop or participate in joint activities.

There is no wider support network that has influenced the development of the initiative in recent years. However, the stakeholder participating in the scenario development process all offered their support and explained how and in what respect they are willing to work with the FÖG association. Cooperation between initiatives with similar objectives have the potential to create win-win-opportunities. The scenario development workshops envisioned a stronger cooperation between members but also with external stakeholders. Two scenarios foresee to establish a wider network of partners. This network should ensure support of the public and from public officials but also reduce resource constraint through cooperation with other stakeholders. Additional informational support might come as well from the NABU national group as they are operating an orchard committee: They intend to stimulate exchange between orchard meadows. A LAG in the Kraichgau region foresees maintenance of orchard meadows as one of the priorities and would be willing to support with a considerable amount of funding if the FÖG applied for it. Furthermore, the two states Hessen and Baden-Wuerttemberg increasingly provide information on funding opportunities, best practices examples for new products, etc. In addition, other initiatives and entities organise apple days and markets etc. Connecting to and profit from these initiatives will depend, however, from the question if the FÖG will continue working.

**Strengths and weaknesses**

Strengths and weaknesses of the FÖG were assessed in detail during the first scenario development workshop. Members of the FÖG and partnering organisations such as the press house and other external experts had diverging views as illustrated in Table 1.

**Table 1: Strengths and weaknesses of the FÖG association**

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Internal view</th>
<th>External view</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>● Production of fruits</td>
<td>● Awareness raising for the preservation of orchard meadows</td>
</tr>
<tr>
<td></td>
<td>● Preservation of old species of trees</td>
<td>● Opportunity for producers to cooperate</td>
</tr>
<tr>
<td></td>
<td>● Conservation of trees/orchards</td>
<td>● Organisation of the organic audit</td>
</tr>
<tr>
<td></td>
<td>● Continues work</td>
<td>● Establishment of an executive office</td>
</tr>
<tr>
<td></td>
<td>● Knowledge and experience</td>
<td>● Reliable partner for producers</td>
</tr>
<tr>
<td></td>
<td>● Implementation according to organic standards</td>
<td>● Known initiative in a circle of experts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● High level of expertise</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● High level of product quality</td>
</tr>
</tbody>
</table>
The focus of managing and improving the premium scheme has led to a strong focus on internal processes of the FÖG. This has resulted in the following limiting factors: The FÖG lacks a public profile and has not managed to create awareness for its cause. Such a profile would, however, improve the initiative’s ability to appeal to new members and help to create a network of organisations interested in orchard meadows. At the same time, the lack of leadership is limiting the ability of the FÖG to adapt to general changes and external challenges. Currently, the FÖG suffers from a lack of trust between the head of the executive board and the executive officer. It has not been able to install a stable management, lacks a vision and engagement for implementing activities to revive the FÖG association. In addition, the workshops with the task-force Future showed that the objective of the initiative is to preserve orchards because of their ecological value or because they are valued due to historic reasons (either as family estate or cultural landscape). Social benefits of orchards are disregarded or undervalued at best. This lack of awareness regarding the benefits of orchards prevents the initiative to reach out to additional target groups.

Possible pathways for overcoming the existing weaknesses were developed during four scenario development workshops:

- **Scenario one “The legacy of the FÖG”**: The initiative fails to overcome its organizational weaknesses. In that case, the strategy aims at preserving the existing knowledge and providing approaches to those who seek to continue actively preserving orchard meadows after the FÖG ended. The actual outcome of the strategy would be a guideline edited by the FÖG initiative (possibly the executive office).

- **Scenario two “The producer’s organization FÖG”**: Establishing regional producer associations with the FÖG as parent organisation with a focus on providing services to them (organic certification and organisation of collaboration with Falter press house).

- **Scenario three “The vital association FÖG”**: Establishing regional branches to facilitate interaction between the members. Appeal to new members with activities also for supporting members, development of new products and events. Networking with other institutions and initiatives.
Scenario two and three include devolvement of responsibilities to the regional level in order to create more ownership and to stimulate exchange and collaboration as basis for new ideas and a vivid initiative. The task-force Future decided to establish three sub-regions, representing the areas Bergstraße, Odenwald, and the Kraichgau (Figure 3). Each sub-region is supposed to act independently from each other. With a decentralization of responsibilities, the members would need to play an active role in the development of their sub-region. This would lead to more frequent interaction of FÖG members, at least within their sub-region.

4.2 Innovative governance arrangements and mechanisms supporting ESBO provision

There are 120 traditional orchard supplier premium initiatives in Germany, which have often been initialised and supported by local conservationist groups like NABU and BUND (NABU 2015). The NABU has introduced a quality label for traditional orchard products, which is coupled to certain maintenance requirements which enhance biodiversity and issued for surcharge initiatives. The FÖG juice is sold under this label.
The set-up of the FÖG is described in section 4.1. The FÖG is an association with an executive board and an executive office run by an executive manager. The executive board is responsible for all strategic decisions, while the executive manager organises the organic certification, planting of young trees, pruning courses, payment of the supplier premium, communication with the press house, applications for funds. She is supported by some individuals in some tasks.

The initiative is still following its founding principles: providing producers with a premium marketing model to preserve orchard meadows which had been considerably declining because of lack of societal appreciation and corresponding policy incentives like grubbing-up premia (cf. section 1 and section 4.1). The supplier premium is an arrangement with the press house. The press house guarantees a fixed price for a negotiated number of tons of apples (cf. section 4.4).

Paying a supplier premium was highly innovative when it was established in 1989. The organic certification started in the mid-90s and was, at that time in the region, again innovative. It was a requirement for the collaboration with one press house – which forced in return the other press house, which is Falter, the current and only press house, to introduce an organic apple juice. The other press house was sold as a consequence of centralisation processes of press houses. The change to organic payed-off, as the certification gives a better credit of environmentally friendly production and at the same time allows to generate higher revenues compared to non-organic products – Falter would therefore keep up the organic juice product line, even if the FÖG gave up.

Key actors never considered an alternative to the supplier premium. The advantage of the approach is that it is based on the principle that the use of orchard meadows contributes to their preservation. In that sense, it is not only a traditional cultural landscape or specific habitat that is preserved, but also a form of production which provides a high amount of ESBOs (see section 2). Consumers can actively choose to support the preservation of orchard meadows and thus the provided ESBOs. Such a premium scheme can be implemented everywhere as long as a market for sustainably or regionally produced products exists. However, consumer awareness and appreciation is volatile, which is the biggest disadvantage of the approach.

**Figure 4:** Quality label of the NABU, it says “Recommend by NABU because (made) from traditional orchards.”
Communication of the correlation is thus a prerequisite for success of the applied model. Another disadvantage is, that producers do not have to identify with the initiative’s objectives: They can simply choose to produce organic and receive a higher price for the apples – but do not necessarily have to have an interest in ESBO provision or even simply consuming the juice themselves. This is currently the case with most of the FÖG producers. In order to cure the lack of ownership and identification, communication of ESBO provision needs to raise awareness internally as well. This may relate to the need to reorganise the current structural set-up, because of the lack of volunteers (cf. section 3). One of the scenarios developed by the Task Force Future (cf. section 9) foresees changing the FÖG to a parental organisation for three to be constituted producer associations. Another scenario was reviving the association, actively work with and bring together producers and boost their appreciation and awareness of ESBO provision through orchard meadows.

Another advantageous mechanism is organic certification, which sets standardised criteria for sustainable production. The annual audit enforces this standard and ensures sustainable production methods. Organic production and certification is of course transferable to other regions. The FÖG initiative uses a third-party certification service based on the EU organic regulation. Similar services are available all over Europe. The certification process is perceived as “[…] laborious. It requires a lot of work and knowledge. This is why our chairman doesn’t even want to have producers with only a few trees. He says it is too costly to do the certification for them.” (Interview statement managing director)

While it would be favourable to integrate even the smallest producers in order to increase preservation and maintenance of orchards, and thus ESBO provision, the administrative procedures prevent their participation in the association currently. Traditional orchard meadows generally provide a higher level of ESBOs compared to other cultivation techniques, like plantations – the compliance with organic standards will thus leverage the quality of ESBO provision to a limited extent only. Instead, it increases the prices for orchard apples, which in turn helps to keep up the interest in maintaining orchard meadows and the related ESBO provision.

The arrangements with the press house are based on a long relationship. However, a lack of communication and frequently changing responsibilities on side of the FÖG have led to a number of misunderstandings and lack of communication, which became obvious in the scenario development workshops (cf. section 9). The most important factor is that the FÖG perceives an asymmetric power relation as the press house dictates the prices and the number of tons they take. On the other hand, the press house Falter would be open for such discussions but would want the FÖG to be in general more active, especially in terms of marketing and developing new ideas.

In the region, there is a general support for the approach, as there is an increased demand for regionally produced and organic products. The FÖG juice, however, would need to be marketed better and more clearly to reach more of the potential customers. In terms of volunteer workers, the FÖG lacks support, although at the same time other initiatives and interest groups have been set-up working on the issue. The initiative failed to establish and maintain relationships to interested individuals or other organisations, because of multiple reasons like a lack of knowledge and information on potential partners, little ICT skills, lack of time and
capacities, ignorance towards certain groups or organisations. Potential partners would be e.g. the Orchard Savers (Streuobstwiesenretter), the regional LOGL association (association for orcharding, gardening and landscape management), the LAG Neckartal-Odenwald (which even foresees the preservation of orchard meadows as a project selection criterion) or the LAG Kraichgau, where traditional orchard meadows are a priority topic.

Further enhancement of ESBO provision is discussed in section 5.

4.3 The role and impact of policy in ESBO provision

The premium supplier initiative is a market-based approach and has been set-up without policy funding. Today, financial provisions through public policies are offered (Table 2).

Table 2: Funding for traditional orchards and related activities in Hesse and Baden-Wuerttemberg (based on Sterly & Hülemeyer 2015, adjusted).

<table>
<thead>
<tr>
<th>Name of measure</th>
<th>Type of support</th>
<th>Beneficiaries</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HESSE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>agri-environment measure E2: Conservation of traditional orchards</td>
<td>6 €/tree for maintenance (cutting)</td>
<td>Organic farmers or farmers in a designated “traditional orchard meadow area”</td>
</tr>
<tr>
<td><strong>BADEN-WUERTTEMBER</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agri-environment measure (EAFRD): MEPL III (FAKT): C1</td>
<td>2.50 €/tree for maintenance (cutting)</td>
<td>farmers</td>
</tr>
<tr>
<td>Directive on Countryside Conservation (Landschaftspflegerichtlinie)</td>
<td>different actions in restoration and maintenance of traditional orchards for up to 90% of the total costs – including e.g. the purchase of a mobile juice press</td>
<td>Farmers, associations and distilleries that are managing traditional orchards which are valuable from a nature conservation perspective and which are located in a designated area</td>
</tr>
<tr>
<td>Organic certification (regional funded)</td>
<td>Certification costs with 125 €/ha</td>
<td>Farmers and private individuals who are producing in accordance with the regulation on organic farming</td>
</tr>
<tr>
<td>Marketing (regional funded)</td>
<td>Promotion and marketing activities for products from traditional orchards</td>
<td>associations and press houses</td>
</tr>
<tr>
<td>Diversification (EAFRD)</td>
<td>investments for processing and storing direct juice of up to 25% of costs (minimum eligible expenditure 50,000€)</td>
<td>Press houses</td>
</tr>
<tr>
<td>Land consolidation (regional/national funded)</td>
<td>Improvement of fragmented land to facilitate maintenance</td>
<td>municipalities</td>
</tr>
</tbody>
</table>

For Baden-Wuerttemberg, the FÖG is providing support for application – 8 of 20 producers have taken the opportunity in 2015. Correspondingly, official numbers in Baden-Wuerttemberg show that only 1.67 Mio of the 9.3 Mio of trees on traditional orchards in Baden...
Württemberg have been supported by the agri-environmental programme (MLR 2009). This is due to the fact that most owners of traditional orchards are not farmers and therefore have no interest in administrative burdens of application for funding, while the support does not cover the high costs related to maintenance and care measures.

“I don’t apply for funding, it takes too much time – and is too little money anyway. In my spare time, I want to work on the orchard meadows and not sit behind my desk again” (Interview statement producer).

The FÖG helps farmers and private individuals who have not applied for the organic production measure in the FAKT to apply for refund of organic certification costs (with 125 €/ha). The land Baden-Wuerttemberg offers a funding of marketing activities of supplier premium initiatives. The FÖG applies for funding together with Falter press house, and the money is used for marketing activities of Falter.

There are two LEADER LAGs operating in the area. In both, projects related to traditional orchards are eligible, the LAG in the Kraichgau region even foresees traditional orchards a priority topic. In the current funding period, a total of 2 Mio. € still is available for project ideas. It turned out, that the FÖG only had limited knowledge on LEADER and not tackled an application, and now feels unable to apply anymore.

“We have been thinking of doing something in the frame of LEADER, but were too late at that time – and then lost track of it. And now I think we just don’t have the capacities anymore. It is now more a question of surviving the next year. I even declined the offer to join a project in one region where they wanted to produce a new apple mix drink. Who should do the work?” (Interview statement managing director).

Other orchard initiatives have profited from LEADER funding, e.g. APfEL e.V., an association of horse riders and keepers, farmers and landowners who have set-up a traditional orchard centre and carry out maintenance and education activities.

However, the FÖG itself has set up a funding programme, as they fund the planting of young trees. Around 100 organic apple trees per year are funded. One tree is currently around 40€, producers only have to pay 1/3 of the costs. The rest is funded through the income of the FÖG (member fees, donations). They organise pruning courses in one region, which are well visited. Participants pay 45€, fees are reduced for FÖG members to 39€. These 1-day courses provide a certificate which producers need to apply for funding in the frame of the RDP.

In recent years, the FÖG has also funded pruning of trees for elderly producers, together with the nature park. In the last two years, however, they have not applied for this funding of the nature park anymore, and no cutting was funded. The managing director stated, that no old producer had asked for it, and that the official tree cutter they work with (the chairman of the board) has not initiated tree cutting by himself (this had been the case earlier, when he saw orchards in a poor state and talked to the individual FÖG member).
To sum up, the economic viability of the producing members of the initiative does not depend on a specific set of policies and ESBO provision would probably not be differently if it weren’t for the programmes. However, RDP and other policies are relevant for projects in the field of developing or marketing regional products. If the FÖG decided to develop additional products, these policies would facilitate such a project. As the scenario development process showed, the future of the FÖG also depends on its ability to take full advantage of the existing funding opportunities.

The PEGASUS-team provided a document, listing funding opportunities for the preservation of orchard meadows, product development and marketing as well as for cooperation projects between different actors. This is a direct answer to the obvious policy failure, which is a lack of information about available funding opportunities. Two aspects have to be distinguished regarding the aspect of information about policies: First, the target group of policies needs to know about the available programs. In the case of the FÖG association the area of operation extends covers two Länder. It is a challenge for the volunteers of the initiative to be aware of all of the available programs and eligibility conditions. Second, the initiative relies on a person who is familiar with funding programs and who is willing to invest the time and has the skills to complete applications. To most of the FÖG members grant applications appear too complex and “require an elaborate wording” and are considered as “not worth the effort” (statement of a FÖG member).

In both federal states, the county level provides support at NUTS 3 level for farmers or local initiatives such as the FÖG association. They provide information on policies and funding criteria and assist applicants in the submission process. In the case of the FÖG initiative, however, local institutions were not able to foster the adaptation of these policies. The FÖG tried to contact the responsible person at one county administration, never received a call back and gave up on this potential source of support, feeling unable to deal with the complexity of funding programs alone. However, the employee of a different county told the researcher that she had heard of the FÖG initiative and their work and that she was wondering why no one tried to make contact to take advantage of the existing funding programs. This example clearly shows that there is a lack of communication at this level between the ones responsible for the implementation of policies and the non-professional beneficiaries.

**Policy mix**

Baden-Wuerttemberg, the state in Germany with most remaining orchard meadow stands, presents its policy mix in a comprehensive Orchard Meadow Concept (*Streuobstkonzeption*, MLR 2015), which serves as a synergistic policy guideline for orchard meadow initiatives. EAFRD funds are complemented with own measures and programmes through co-funding from the federal government and state funds to provide coherent policies for the preservation of orchard meadows and the support of initiatives for marketing regionally produced products. The state of Hesse recently started to apply similar approaches and included the preservation of orchard meadows in its latest RDP (2014-2020), but has not come up with an integrated concept like Baden-Wuerttemberg.
In Baden-Wuerttemberg the combination of funding sources creates a comprehensive set of policies which strengthen the ESBO provision of orchard meadows at various levels (e.g. tree regeneration, cutting, marketing of products etc.). A success factor in Baden-Wuerttemberg is the high share of orchard meadows leading to an increased societal interest (perceiving the remaining stands as part of the cultural landscape and heritage). A number of initiatives and individuals, like the FÖG have started more than 30 years ago, working on the issue. This has led in turn to an increased societal interest which is reflected in policies. Innovative policy approaches have been developed, e.g. the creation of Associations for Landscape Maintenance (Landschaftserhaltungsverbände) in Baden-Wuerttemberg, which often employ around 2 fulltime positions and are based at NUTS3 level. They explicitly care about orchard meadows as well. In addition, Orchard Meadow Educators (Streuobstpädagogen) are trained who are supposed to work especially with school classes raising the interest in and appreciation of meadows thus contributing directly to socially beneficial outcomes of orchard meadows. The development and the web-based publication of the Orchard Meadow Concept (Streuobstkonzeption) is a simple but efficient tool to give interested persons a comprehensive introduction into relevant policies.

The highest barrier by far is the administrative burden connected to the use of policies. For the FÖG initiative, which depends on the knowledge and work of volunteers, but also small scale producers the effort regarding the submission process and the documentation of activities is in no relation to the benefits.

4.4 The role of the private sector in ESBO provision and enabling factors

In economic terms, traditional orchards are of low productivity as they are labour intensive, require a lot of knowledge and, so far there is no demand for the fruit as such – which makes them subject to abandonment. The FÖG follows the idea that preservation of traditional orchards requires a continuation of their (sustainable) exploitation. As an incentive for producers, the FÖG offers a supplier premium. In addition, it helps their members to get their orchard meadows certified to organic standards and organizes processing with a partnering press house. The press house guarantees a fixed price for a negotiated number of tons of apples. The FÖG model foresees a top-up which is variable depending on the market price and the supplier premium is 7€ max, which means the higher the market price, the lower the supplier premium. Currently, supplier premium initiatives achieve a prize between 15 and 20€ per 100kg (i.e. per dt) (NABU 2015), in the last 15 years FÖG producers received in average 16.54€ (Table 3).
Table 3: FÖG production between 2003-2015 and supplier premium for the related year

<table>
<thead>
<tr>
<th>year</th>
<th>apple (dt)</th>
<th>€ per 100kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>2205</td>
<td>16.34</td>
</tr>
<tr>
<td>2004</td>
<td>2548</td>
<td>13.64</td>
</tr>
<tr>
<td>2005</td>
<td>336</td>
<td>16.15</td>
</tr>
<tr>
<td>2006</td>
<td>2845</td>
<td>13.64</td>
</tr>
<tr>
<td>2007</td>
<td>833</td>
<td>17.00</td>
</tr>
<tr>
<td>2008</td>
<td>4593</td>
<td>13.64</td>
</tr>
<tr>
<td>2009</td>
<td>514</td>
<td>13.73</td>
</tr>
<tr>
<td>2010</td>
<td>1241</td>
<td>15.88</td>
</tr>
<tr>
<td>2011</td>
<td>2767</td>
<td>15.14</td>
</tr>
<tr>
<td>2012</td>
<td>1379</td>
<td>15.65</td>
</tr>
<tr>
<td>2013</td>
<td>882</td>
<td>15.78</td>
</tr>
<tr>
<td>2014</td>
<td>945</td>
<td>14.50</td>
</tr>
<tr>
<td>2015</td>
<td>1390</td>
<td>17.50</td>
</tr>
</tbody>
</table>

If the FÖG delivers more apples, these will receive the conventional price, which is usually between 5€ and 8€. Producers who are certified organic through the FÖG are obliged to deliver their total harvest except for 10% which can be retained for personal usage. Additional members who are self-certified are allowed to deliver as much or little as they want. The press house brings two different juice products to the market. The FÖG juice is marketed under the NABU traditional orchard label (see section 4.2).

The FÖG applies a private sector scheme and through it contributes to the maintenance of traditional orchards which in turn provide to a number of ESBOs as described in section 2. So we conclude that all of these ESBOs are addressed by this private sector scheme.

**Main motivation and coverage of ESBOs**

The main motivation for the establishment of the FÖG association was of idealistic nature as a direct answer to the considerable decline of the before inherent and formative existent landscape element and a perceived policy failure, e.g. expressed through paying grubbing-up premia and supporting apple plantations instead (see section 3). Protection of the cultural landscape element and its value for the natural environment was the main objective of the initiative. In other words, the FÖG initiative strongly focusses on the ecological outcomes of their work while socially beneficial outcomes are only anchored in the initiative’s consciousness to a limited extent (e.g. carrying out educational activities, but no awareness of possible contribution to rural vitality).

Three regional meetings in the FÖG area, where the scenarios and related strategies were presented (cf. section 9), helped to get a better insight in the motivation of producers. The traditional orchards are considered as family heritage, and harvesting and maintenance traditional activities to be carried out. Even though a profitable orchard cultivation would require 25€ per dt (i.e. per 100kg) (NABU 2015), the money is perceived as nice additional income. In addition, a lot of these producers has experienced food shortages after World War II and
would not want to leave the apples rotting. In contrast, their younger generations tend to show little interest in carrying out the work for the money or for family traditions. Some of them have moved to larger cities and are not available as successors.

On the other hand, there are new orchard meadow activists like the Orchard Meadow Savers. They also show signs of idealistic and opportunity-based motivations for their interest in orchard meadows, but not only with an ecological focus as their motivation is also strongly related to social beneficial outcomes: pursuing a (family) hobby in nature as a contrast to a working week in an office and giving their children the opportunity to work in and experience nature actively; contributing to rural vitality following the idea of a sustainable economy etc.; making orchards to a place to come together and interact with people of various backgrounds (age, gender, ethnicities). Often these are new families in a village interested in working on orchards, who would probably be open to work on the producers’ meadows as well, if these were willing to (cf. section 3).

**Parties in the private sector**

As described in section 3, orchard meadows were not valued by society and abandoned. Environmental activists aiming at preserving the resource system established the FÖG association to implement a premium scheme. This can be seen as idealistic act, whereas the implemented scheme uses market opportunities as incentive. Part-time farmers or private individuals owning orchard meadows can here not necessarily be considered as entrepreneurs. As described above, they do not depend on the income from the orchard meadows and their motivation is not the pursuit of profit (“It is in their family tradition, so they try to maintain it – but not for the money, which is too little anyway for all the work you do”, interview statement FÖG member). Nevertheless, the partnership with the press house and services like the organic certification are an incentive for a sustainable production and the preservation of orchard meadows.

In the context of the case study, the private sector relates to the press house. The press house is buying up the harvest of the initiative’s producers and producing and selling the juice from the orchard meadows. It benefits by the partnership with the FÖG because it enables the small, regional company to occupy a specific market niche (regionally produced organic apple juice) which offers the rather small, family owned press house a great USP to compete with the organic product lines of large scale press houses.

**The main public policy framework influencing market mechanisms** relevant for the FÖG premium scheme is the EU Organic Regulation. The press house is benefitting from EU RDP policies, which support the marketing of the FÖG juice. Besides that, the initiative does not take advantage of most of the available policies mainly due to the administrative burden (see section 4.3).

**The future of the private sector initiative and how CAP could help**

As described above (cf. section 4.1), the FÖG initiative is not robust. A rapid loss of members and the increasing unwillingness to engage as volunteer, leads to problems in filling executive board positions. The lack of leadership has a paralyzing effect: New projects or alliances are
not developed because members are focused on internal problems – reinforcing the vulnerability of the initiative. Assuming the internal problems described above did not exist, the FÖG initiative would have the potential to continue the successful preservation of orchard meadows. The history of nearly 30 successful years and the growing demand for regionally produced organic products translates into a considerable potential for growth (like other initiatives show) or at least into a comfortable position for continuing its work.

The future pathways have been described in three scenarios, which were developed together with the PEGASUS team. While one scenario foresees the liquidation of the FÖG, another would entail changing the FÖG to a parental organisation of three producer associations. The third comprises the revitalisation of the association with a broadening of the focus to not only environmental but also socially beneficial outcomes and the widening of the range of products. All scenarios are possible and achievable.

The two latter scenarios are based on the assumption that organic certification will be continued. This goes along with the related public sector scheme of the organic regulation. The implementing regulation (EC No. 889/2008) sets out the rules for audition and monitoring, which adds to the credibility of the products. Current discussions at EU level on a new seed regulation might entail the requirement of licensing of (old) apple varieties, which would threaten the provision of ESBOs through orchard meadows as these costly processes would reduce the already low productivity of the system and thus contribute to a further decline of orchard meadows.

In general, initiatives like the FÖG can only benefit from policies, if the administrative burden is lowered to a level where the submission of applications and the documentation can be handled by volunteers and other non-professionals. In addition, there is still a lack of knowledge on funding opportunities which needs to be responded to at implementation level. Furthermore, a professionalization in terms of management would be necessary. While current policies support the establishment of premium initiatives and the development of products and marketing channels, there is no support for initiatives finding themselves in a crisis situation like the FÖG: Demographic change of members or the change of social norms and values are challenging for initiatives like the FÖG, and eventually their contribution to an ESBO provision. In summary, CAP could set up schemes for training and professional coaching for existing initiatives, helping them responding to the numerous market and social challenges.

5 Potential pathways towards an enhanced provision of ESBOs

Strategies
The provision of ESBOs can be enhanced in various ways. First, the general conditions for initiatives like the FÖG can be adapted to improve the ESBO provision. Second, the approach that was successfully established by the FÖG could be promoted and multiplied into other regions. And third, the FÖG association could take specific measures to increase the ESBO provision on the orchard meadows it preserves. These approaches involve different actors and have different implications.
Enhancing the general conditions for initiatives such as the FÖG requires especially two things, policy support on various aspects and increased public awareness. Some federal states like Baden-Württemberg support the establishment of premium initiatives and contribute to the multiplication of premium initiatives (see section 4.3). In addition, public policies in different federal states support the development and marketing of products or the collaboration with other initiatives. Those objectives are especially relevant for well-functioning initiatives. Initiatives in a situation like displayed in the case study are strongly affected by a change of membership demographics reducing its ability to act. They already have established products or collaborations. Instead of new products, they need to develop a strategy to deal with challenges they are facing. Complementary to the above-mentioned objectives, initiatives such as the FÖG would tremendously benefit by policies supporting strategy development processes. This would enable strengthen the capacities of initiatives to deal with and adapt to structural challenges such as demographic change or internal issues like lack of leadership. In conclusion, the case study shows that established non-profit initiatives strongly depend on the capacities of its members. Policies could support volunteers by providing the means to develop viable approaches for a continuing development of existing initiatives. In addition, training could be provided to increase the management abilities and help professionalization of initiatives, which would strengthen the ability for self-help.

The familiarity of policies could be increased to reach especially those initiatives which depend on volunteers who are less familiar with specific funding programs and sets of policies. The local administrations could also develop specific events to target initiatives and promote the use of funding programs. In addition, the public administration could offer workshops to assist with applications. Measures to reduce the complexity of funding guidelines and measures to enable beneficiaries to take advantage of funding programs would help to reduce the barriers for initiatives like the FÖG.

Increased public awareness for the ESBOs agriculture as well as forestry provide and how the public can support this, would enhance the general conditions in which initiatives like the FÖG association operate. There are numerous examples for simple and small supporting activities, e.g. public administrations only cater regionally produced food and beverages in meetings, initiative to have regional product shelves in supermarkets, using orchard meadow fruit for school lunch.

The improvement of ESBO provision of the initiative itself requires the effort to improve the conditions of the FÖG’s orchard meadows. In addition, increased awareness for specific ecological benefits and the knowledge to improve them were required as much as the motivation to implement such activities (possible pathways and potentials see below).

**The ESBO Potential**

The FÖG task-force “Future” developed three scenarios with corresponding strategies for continuing the preservation of orchard meadows (see section 4.1). Based on the results, the executive board will ask the members to take a vote on the initiative’s future and decide on a strategy in the mid of 2017. The potential increase or decrease of ESBO provision depends on the strategy the current members of the FÖG choose.
• **Scenario 1** “The Legacy of the FÖG”: The participants of the future scenario development workshops expect that 50% of the orchard meadows will be lost after the liquidation of the FÖG within 5 to 10 years’ time.

• **Scenario 2** “The producer’s organization FÖG”: If all producing members stayed in the FÖG association, the ESBO provision remains at the current level. Regional branches, however, could also decide to expand or cease their production which implicates a corresponding impact on the ESBO provision.

• **Scenario 3** “The vital association FÖG”: This scenario suggests many more activities and the collaboration with other regional initiatives. Therefore, the ESBO provision is expected to grow or is at least to be saved at the current level.

**Limiting and enabling factors**

The potential of ESBO provision is shaped by limiting and enabling factors. Internal enabling factors are the established structures and processes for organic certification of farmers and the working collaboration with the press house (only relevant for scenarios 2 and 3). The support of other initiatives and stakeholders can be considered an external enabling factor (also relevant for scenarios 2 and 3).

Various internal factors like issues regarding leadership, knowledge and capabilities but especially demographic change limit the enhancement of ESBOs (see above). A structural disadvantage is the dispersion of the members within the three regions. The lack of leadership and resources has prevented the FÖG from developing activities to attract the needed new members. Little and unspecific promotional activities have not raised public recognition nor have they conveyed the idea that orchard meadows offer a place to experience and enjoy nature as part of the voluntary work (probably because the focus of current FÖG members is as well rather on the aspect of meadow orchards being “hard graft”, interview statement FÖG member).

**Strategies to overcome the weaknesses**

To involve more of the members in the further development of the FÖG, the board divided in early 2017 the large region into three sub-regions with 15 members on average, and carried out in March a consultation workshop in each sub-region. Members were provided with the opportunity to familiarise with and give a first vote on the scenarios and corresponding strategies of action. The aim of each developed strategy is the preservation of orchard meadows. However, depending on the focus of the scenario the impact is estimated to be considerably different (see section on ESBO potential above):

• **The strategy of action for scenario 1** proposes the liquidation of the FÖG association due to a lack of volunteers. It is not a strategy to overcome the weaknesses but a way to preserve as many orchard meadows as possible. The development of a comprehensive guidebook with information and contacts is the last planned activity of the FÖG. Former members will be equipped with it to support their continuing management of orchards.
The strategy of action for scenario 2 suggests to focus on offering services for producers (mainly organic certification). The responsibility for any other activities, e.g. regarding the marketing or development of products, is downloaded to three regional producer associations, which have to be established. The FÖG will serve as parental association. While producers stay members in the FÖG, supporting members will not be involved any longer.

The strategy of action for scenario 3 advocates an association that is well connected within their three to be established sub-regions. The new sub-regions are responsible for planning and implementing activities that highlight not only ecological benefits of orchard meadows but also social ones. Events and activities attract new members. They secure an independent existence of the association embedded in a wider network of stakeholders and the continuation of the preservation of orchard meadows.

All three workshops showed that almost all producing members will not engage in additional activities beyond their current involvement in the preservation of orchard meadows but have the wish to continue deliver apples and receive a supplier premium. This means scenario 1 will be highly likely as soon as further volunteers withdraw and duties can no longer be performed. In contrast, regional stakeholders (e.g. from LEADER LAGs in the region) mostly argued for focusing resources on maintaining the supplier premium model (scenario 2) or pleaded in favour of scenario 3 to share the load of activities between different actors. After all, the managing board will decide how to continue and discuss the results of the workshops on the annual general meeting with all attending members. In a plenary assembly, mid of 2017, the final decision on the future pathway will be taken.

Alternative approaches
In the area where the FÖG organises the premium scheme other initiatives and actors are also involved in activities contributing to the preservation of orchard meadows. Those actors include two LEADER LAGs, Nature and Geo-Park, the association of horse riders and farmers for the preservation of orchard meadows named APfEL e.V. and the currently most recognized initiative called The Orchard Meadow Savers (Streuobstwiesenretter).

The Streuobstwiesenretter apply a networking approach to preserve orchard meadows. They use their strong public profile to form new alliances and raise the awareness for social and ecological benefits of orchards. They connect various actors from entrepreneurs to volunteers who have ideas for projects or want to participate in activities. They support individuals with the implementation of projects, offer tree sponsorships, organise market and festivities etc. They use a mailing list to inform and invite people to specific activities. They also serve individuals as platform for advice and contacts for specific projects. They are an important platform with an extensive network of people who support or are directly involved in the management or preservation of orchard meadows.

The Streuobstwiesenretter are currently very successful and receive lots of support and media coverage. The founding members are aware that it is necessary to establish structures to distribute tasks and responsibilities among more people than today. For the long-term success,
it is important to reduce the dependence of the Streuobstwiesenretter from its founding activists. If the initiative succeeds in establishing sustainable structures, the Streuobstwiesenretter can be considered a robust association.

6  Suitability of the SES framework and ‘action-orientated approach’ in the analysis of ESBO provision

The SES framework turned out suitable in bringing together the ecological and social aspects within the case study, allowing for a more holistic view. In particular, it was helpful for reflecting the different categories of the SES framework in order to get a broad picture of the prevalent settings, subsystems and actors.

While it is a too complex framework for direct communication with stakeholders it was used in the participatory scenario development process for analysis of the different scenarios. The three future pathways of the initiative were translated into three SES diagrams (see 9.3). It thus allowed to analyse dynamic change of the initiative and related ESBO provision.

In line with Hinkel et al. (2015) we see a special value in the SES framework, as it looks at more characteristics of RU and RS than just subtractability and excludability. Often, the definition of what is a common good and what is a public good is not as straightforward as the non-excludability and non-rivalry criteria suggest. “In practice, each dimension (subtractability, excludability) fluctuates along a continuum. The line between common-pool resources and public goods is a fuzzy one”, (ibid., p. 31). They introduce the term collective goods, which they define as “goods and services that have nontrivial costs of exclusion, irrespective of institutional arrangements” (ibid., p. 32). In addition, certain ESBOs are relevant within the SES, while others reach to other SES and/or ecosystems, which means that the boundaries of the SES are not finite when using it in our context.

To our understanding, a special focus in the application of the SES needs to be on the action situation element, as here the societal valorisation of ESBOs can be reflected. A resource unit becomes an ESBO through the assessment and evaluation by actors: Groundwater level and groundwater quality are mere numbers. The related ESBO “Achieving (or maintaining) good ecological status of surface water and good chemical status of groundwater” depends on the definition of what are good ecological and chemical status, which depends on existing values, experiences, knowledge, possible alternatives etc. In the 1950s, for instance, traditional orchards were still highly valued by local communities because of the fruit they produced, which could be used for own consumption or sold and led to the production of apple juice and apple wine etc., while at the same time the understorey was used for the cattle as grazing land or for fodder production; there was the feeling that the use as traditional orchards was making the best use out of the land. In the 1960s, traditional orchards were considered as unprofitable, better suited for building land due to their location surrounding the villages, or the trees were considered as hampering a more efficient, mechanical use of the grassland. In the 1980s, appreciation changed again and today they are appreciated for a number of ESBOs they provide – which can change again depending on the future pathway taken.
The action-oriented approach in combination with ESBO thinking helped to see that there is a lack of awareness and appreciation of socially beneficial outcomes which in turn increased the desolate situation of the FÖG (overaging of members, lack of new members, reduced engagement of remaining members). In the two scenarios in which the FÖG follows pathways which mean a continuation of the initiative, rural vitality, education, outdoor recreation and cultural heritage play an important role as they are actively targeted and thus contribute in turn to a revitalisation of the initiative.

For the FÖG, our offer to carry out the case study on them and follow an action-orientated approach did not only increase their willingness to participate but also helped them in a situation of imminent change paralyzing them. Through the process of scenario development, they were able to open up their mind for possible future pathways instead of seeing future as the prolongation of the present. The moral downside is, that we were just able to initiate the scenario development but cannot accompany further steps. We conclude that initiatives like the FÖG facing a difficult situation should have the opportunity to consult a coach, which could possibly be funded through CAP (see section 4.4). In addition, professional exchange and network facilitation could help to prevent and better cope with critical situations.

7 Main conclusions derived from the Steps 3-4 analysis

7.1 Key findings on the particular SES and the provision of ESBOs

The SES “FÖG orchard meadows” and the related provision of ESBOs is centred on the FÖG’s supplier premium approach. Orchard meadows contribute to numerous ESBOs (see section 2). The organic production standard, which is mandatory for all members of the initiative, does not leverage quality of ESBO provision (as they are already low/no-input systems) but leads to higher prizes, thus to maintenance of traditional orchards and ESBO provision. The quantity depends on the number of orchard meadows maintained. Most of the FÖG’s members have grown old and retire from the association, producing members are increasingly not able to maintain their trees and often lack a successor for their orchards. The FÖG is not able to attract younger members. If the initiative continues loosing members, the quantity will reduce accordingly.

The strongest driver for establishing the initiative was the preservation of the traditional landscape element and its environmental value with a focus on biodiversity. Further environmental objectives were added over time, like protection of soil and water bodies, contribution to a better local climate. In contrast, socially beneficial outcomes have not been a driver so far. The educational function of orchard meadows is increasingly acknowledged, while other ESBOs like contribution to rural vitality are not considered, though these might help to revitalize the initiative (as is the case in other initiatives like the Orchard Savers who concentrate on networking of people and institutions for maintaining the traditional landscape element, carry out events like Orchard Days, organise common harvest activities etc.).

Provision of ESBOs can be increased through internal measures within the initiative, first of all continuing the initiative’s work, secondly by actively targeting socially beneficial outcomes,
and thirdly by increasing the awareness of members and of the wider public for ESBOs deriving from orchard meadows and using this for better marketing.

General conditions regarding policies as well as market dynamics are increasingly supportive for orchard meadow initiatives. Baden-Wuerttemberg provides a comprehensive policy approach for orchard meadow initiatives from informing about funding programs to support of various activities ranging from production to marketing. The federal state of Hesse has started to follow the example of Baden-Wuerttemberg as similar policies are implemented. Two LAGs offer additional funding opportunities. However, there is still a lack of knowledge on funding opportunities which needs to be responded to at implementation level (see below) and the perceived administrative and “academic” burden of funding applications and proposal-writing requires additional support. Up to now, public policies have not made a real difference for the work of the FÔG, but could be influential if the FÔG starts to revitalise and start new projects. Both the demand for regional and organic products increases steadily, which creates a positive market environment for future activities.

7.2 Key findings on governance arrangements and institutional frameworks

The supplier premium scheme of the FÔG is a marked based approach, which was established without the use of public funds. It allows consumers to actively choose to support the preservation of orchard meadows and thus the provided ESBOs. The related disadvantage is that consumer awareness and appreciation is volatile so that continuous communication of these linkages is important. Up to now the FÔG has not focussed on active communication, only the homepage contains a few words on it. Another disadvantage is, that producers do not have to identify with the initiative’s objectives, and can simply choose to produce organic and receive a higher price for the apples. This is currently the case leading to a lack of ownership and identification, which could be prevented through internal communication of ESBO provision and awareness raising.

Until today, neither the initiative’s activities nor the ESBO provision depends on policies. Nevertheless, the FÔG is using public funds to finance few individual activities. Weaknesses of the available policies are the administrative burden, low level of knowledge on funding opportunities, and a mostly negative perceived cost-benefit relationship. Policies have the potential to support the long-term success of an initiative by not only focusing on the establishment of initiatives or single activities but also assisting initiatives in crises with adaptations processes. In addition, a professionalization in terms of management could be supported. In summary, CAP could set-up schemes for training and professional coaching for existing initiatives, helping them responding to the numerous market and social challenges.

Organic certification sets standardised criteria for sustainable production, but is perceived as labour intensive and requiring knowledge. The FÔG decided to not take up small producers with only a few trees as members. As the higher price would be an incentive for them to continue maintaining their trees, from a societal point of view it would be desirable for ESBO provision to see them certified organic. Currently certification is funded but not the process of going through it – this might as well be an additional target for future funding.
7.3 Other enabling or limiting factors

Initiatives such as the FÖG strongly depend on volunteer’s work. The lack of involved members directly influences the capacities to organise activities enhancing ESBO provision. Limiting factors are a shrinking and aging membership base, a lack of attractive activities for new members, a lack of leadership reducing the capacity to adapt the own strategy to new challenges and so on. Enabling factors could be the awareness of the range of provided ESBOs in the initiative itself as well as in the wider public if communicated better internally and externally. In addition, there is an extensive support network available to which the FÖG could easily connect.

The case of the FÖG initiative shows, that an approach has to be adapted to shifting social norms. While the new idealistic and social benefits-oriented shift potentially provides the ground for an improved ESBO provision, the FÖG’s environmental focus plus a lack of recognition and understanding of these shifts coupled with the limited ability to use required up-to-date communication channels have hampered connection to these developments.

Overall, the low productivity of traditional orchards requires support measures. These may comprise public subsidies, but will only be sustainable through market based appreciation of ESBOs through supplier premium initiatives like the FÖG or similar approaches. In particular the valorization of socially beneficial outcomes will play an important future role, providing ground for social enterprises (cf. Keech 2016).

7.4 Contributions to EU strategic objectives

The initiative does not aim directly at growing in the economic sense. Its aim is to preserve orchard meadows through a supplier premium scheme, which implies the processing and marketing of products. The initiative is not creating jobs (only one part-time position in the executive office, other activities are managed by volunteers). It contributes to the creation and preservation of employment at the regional press house. Currently the FÖG is enhancing sustainability through the provision of organic apples from orchard meadows. In the current state of the FÖG, innovative approaches cannot be identified. If the FÖG were able to overcome its problems and successfully implement the developed strategies, it could bring pectin from orchard meadows to product maturity and contribute to smart growth.

7.5 How about the transferability of the approach/mechanism used?

One has to make a distinction between the transferability of the general approach of the FÖG and its specific problems and developed solutions. A supplier premium scheme is transferable as long as suppliers are interested in implementing specific standards and a consumer demand exists (or can be created through awareness raising activities). Organic certification as a means to receive a higher price for apples from orchard meadows because of its certified sustainable production is of course transferable as well.

Other mature initiatives might also be facing challenges connected with an aging or shrinking membership base. The FÖG case study shows the relevance adapting the own approach to remain attractive for new, younger members. It also shows, that an initiative is very vulnerable
to the loss of members, if only very few are actively involved. Tasks and responsibilities should be distributed in a balanced way to ensure the long-term success of an initiative. The *Streuobstwiesenretter* provide a great example for the importance of a networking approach. Joining forces means more activities with less work for one initiative.
8 References


FÖG (Fördergemeinschaft regionaler Streuobstbau, 2015): NABU research project: Answers of the FÖG; unpublished document provided by FÖG.


9 ANNEX: Reflections on the case study methodology used

9.1 Objectives and activities undertaken with initiative/stakeholders

Several activities were implemented as part of the PEGASUS case study research. Interviews with key individuals like members of the board or regular members were conducted for steps 1 and 2. In addition, relevant information and other material was provided by the FÖG.

The first activity of the PEGASUS team agreed with the FÖG was a funding counselling to explore systematically existing support opportunities for an initiative like the FÖG, resulting in a list with relevant funding programs, handed over to the FÖG association. The second and main activity was to develop a strategy for the future of the FÖG with its members and stakeholders. To reach this objective, the PEGASUS team accompanied the set-up of a task force ‘Future’ with FÖG representatives and external experts, and organised four scenario development workshops.

Figure 5: Impressions from the task force ‘Future’ at work

The objective of the first workshop was to establish a common understanding for the process. The introduction of all participants was important to establish trust and credibility. Later, the status quo of the FÖG association was analysed in detail and discussed how general conditions for initiatives like the FÖG association might change within the next five years. Based on those assumptions, the participants developed three scenarios during the second workshop. The third workshop was used to consolidate the scenarios and assess their impact on the FÖG’s orchard meadows. The last workshop was used to discuss the fully developed scenarios and strategies with additional members of the FÖG and other stakeholders like the Nature Park and explore potential cooperation and networks, next steps and required financial and human resources. Three corresponding strategies were worked out.

The following groups were involved in the scenario development process:

- The FÖG: Members of the board and the executive officer as well as long standing members (final workshop only) representing the initiative.
- Press house: the processing partner and supporting member of the FÖG, interested in continuing its organic product line with FÖG apples.
- NGOs: members of BUND and NABU (at the same time members of the FÖG) representing the interest of environmental NGOs.
• The initiative “The Orchard Savers”: Two founding members and members of the board participated as external experts.

• The regional marketing initiative “BioBande” (opening workshop and final workshop only) participation as partner of the FÖG and external expert for regional marketing initiatives.

9.2 Outcomes and further steps

The outcome of the scenario development process is a paper with three scenarios regarding potential and realistic development pathways as well as corresponding strategies for their implementation. In addition, the workshops contributed to raise awareness among the members of the FÖG about the specific challenges the FÖG is facing. Misconceptions, especially between the initiative and the press house were clarified in the process and contributed to trust-building between some of the involved individuals. Perspectives for potential networks were highlighted. The PEAGSUS team also provided a comprehensive list of relevant funding programs.

In March 2017, the initiative held events in the developed sub-regions with the objective to have a first vote of members on how to continue with the FÖG. The PEAGSUS presented the developed scenarios and strategies during these events to the FÖG members and the interested public and facilitated the opinion-forming discussion process among members. It became clear that the FÖG is perceived as a service provider for producers who are not willing or able to replace withdrawing supporting members to perform their tasks. The executive board will decide further steps in April 2017. It is obvious, that current operations of the FÖG cannot be sustained. Options to be discussed are the liquidation or a transformation focusing on the professionalization of services for producers, while any development in line with scenario 3 has been excluded during the workshops in the sub-regions. As the larger producers are not certified organic through the FÖG but independently, they could continue their operations without the association. The executive office prefers the professionalization option, which will be mostly attractive for small-scale producers. In this group, most of the work is done by the older generation often without clear successorship and low willingness to pay more for the certification. Even if the FÖG succeeds with implementing more professional and lean operations, this approach will not solve the problem of demographic change in regards of membership-base and individuals managing FÖG orchard meadows.

The research team transferred the scenarios into SES diagrams to use them for further analysis (see Figure 6: Outline of the main structure of the SES Scenario 1 (adapted from Ostrom and Cox 2010; McGinniss and Ostrom 2014) Figure 7, Figure 8).

9.3 Judgement on the process

The actors had a variety of expectations regarding the work of the task-force Future and its cooperation with the PEGASUS researcher team. The main hope towards the process was to develop viable solutions for the FÖG’s problems and to take a decision on how to approach the FÖG’s challenges. The anonymous feedback on the process shows that all participants were satisfied or very satisfied with the results. Most participants were highly motivated, except for the director of the executive board who expressed his scepticism. The participatory
approach was valuable at various levels. For the FÖG it was important to start an open future-oriented process. External experts and stakeholders contributed directly with their ideas and comments. This approach lead to the development of realistic and possible solutions together with experts and partners. For the PEGASUS team, it was valuable because the action-orientation led to an increased willingness to participate. In addition, we did not only receive information about the operating conditions, partners or other initiatives but were able to observe the formation of opinion and the influence of personal relationships, interests and sympathies/antipathies on the process.

The approach was very useful to experience the actual interaction within the initiative. However, the PEGASUS team was also very much depending on the cooperation and capacity of the individuals involved. The questioning of decisions or the refrain from forwarding information were not only useful indicator for the problems of the FÖG but also a challenge the researchers had to deal with and hampered e.g. the application of the develop concept for the assessment of ESBO provision. Inherent to scenario thinking is the difficulty for involved persons to think out of the box and fully open the mind for potential future developments. Even after the whole process it was still observed that stakeholders had the tendency to see future as prolongation of the present.
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This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 633814

Figure 7: Outline of the main structure of the SES Scenario 2 (adapted from Ostrom and Cox 2010; McGinniss and Ostrom 2014)
This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 633814
9.4 Supporting data, statistics and initial concept for quantification of ESBOs

The initiative under review, the FÖG, has a territory which spreads over two states, Hessen and Baden-Wuerttemberg. German federalism leads to the situation that different levels of data and data provision may exist – and that in both states the relevant data providing administrative entities have to be contacted. In Baden-Wuerttemberg that is the LUBW, in Hessen the HALNUG.

We started with acquiring data for Hessen and acquired the following data (see example of Birkenau, Figure 9):

- DLM 25 contains traditional orchard meadows (red shaded), and traditional orchard fields
- Biotope mapping contains traditional orchards (green shaded)
- forest with climate protection function (only available for state forests and for forests which are ministered by HessenForst (yellow dotted)
- landscape protection areas (violet shaded) (no data on protected landscape elements)
- Habitats directive area (blue shaded)
- Birds directive area (turquoise shaded)
- Water protection area (shaded blue)

In order to check the usefulness of the available data, we produced a map for the nine communities in Hessen (see the example of Birkenau, Figure 9). Looking at the map it is striking that orchard mapping in the frame of DLM25 and orchard mapping within the biotope mapping of Hessen diverges so much. We expected more overlaps. Not every orchard mapped in DLM25 needs to be necessarily contained in the biotope mapping, as certain minimum criteria exist for declaration as biotopes. We cannot explain however, why a considerable number of orchards mapped as biotope is not contained in the DLM25. This was not checked with the respective authorities, as it turned out that the concept was not applicable at all (see below).
Figure 9: Data availability and check of usefulness on the example of the community of Birkenau (own illustration).

The PEGASUS research team developed a concept for assessment of ESBOs. Indicators for levels of provision and demand were developed (see Table 4). The idea was to further acquire necessary data and then sit down together with the FÖG and locate the orchards in order to have a spatial reference. The FÖG was not able, however, to provide us with the exact location of the FÖG orchards due to a chaotic information management and lack of personnel. Thus, it made no sense to further follow the initial concept.

Table 4: Indicators for levels of provision and demand

<table>
<thead>
<tr>
<th>ESBO</th>
<th>Indicator for levels of provision</th>
<th>Indicators for demand/appreciation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainable and sufficient production of food</td>
<td>Apples produced (in dt), apple juice produced (in l), number of trees? (related to the total area of the FÖG, related to number of producers)</td>
<td>Consumption and sales figures of the press house</td>
</tr>
<tr>
<td>Water quality and supply</td>
<td>difficult to assess, lack of data, water protection areas as approximation?</td>
<td>Water protection areas (the fact that there is a law shows appreciation)</td>
</tr>
<tr>
<td>Climate adaptation</td>
<td>Improvement of the local climate: Fresh air corridors as contained in landscape plans</td>
<td>Landscape plan (the fact that there is a law shows appreciation)</td>
</tr>
<tr>
<td>ESBO</td>
<td>Indicator for levels of provision</td>
<td>Indicators for demand/appreciation</td>
</tr>
<tr>
<td>------</td>
<td>----------------------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td></td>
<td>and forestry plans (for adjacent</td>
<td>no demand – maybe on higher policy</td>
</tr>
<tr>
<td></td>
<td>forests: “forest with climate</td>
<td>levels when reporting at state level:</td>
</tr>
<tr>
<td></td>
<td>protection function”, see map</td>
<td>they could count orchards separately</td>
</tr>
<tr>
<td></td>
<td>in Annex)</td>
<td>as carbon sequestration is higher than</td>
</tr>
<tr>
<td></td>
<td></td>
<td>on grassland but currently they are</td>
</tr>
<tr>
<td></td>
<td></td>
<td>probably added to grassland</td>
</tr>
<tr>
<td>Climate mitigation</td>
<td>Carbon sequestration (cp. Plieninger 2011), hard to assess and differentiate exactly for the territory</td>
<td></td>
</tr>
<tr>
<td>Achieving (or maintaining) good biological and geochmical condition of soils</td>
<td>Low input cultivation (if grazing then low livestock density) and FÖG certified organic</td>
<td>Demand for organic products?</td>
</tr>
<tr>
<td>Soil protection</td>
<td>Avoiding soil erosion (hard to assess if trying to do by counterfactual, because a lot of factors would be relevant like steepness of slopes, type of soils etc.)</td>
<td>no demand but generally a number of regulations show that there is a high interest in preventing soil erosion (e.g. Codes of Good Practice)</td>
</tr>
<tr>
<td>Biodiversity</td>
<td>Existence of protected biotopes and endangered species and red list of threatened species (probably hard to get data on species, biotope data and NATURA2000 data available)</td>
<td>Again the fact that there is a law shows appreciation, in addition it is the most cited fact on traditional orchards (habitat for more than 5000 species), demand for organic products?</td>
</tr>
<tr>
<td>Pollination</td>
<td>number of beekeepers/hives (but Beekeeping Associations refuse to issue the numbers)</td>
<td>Sales figures of beekeepers (but Beekeeping Associations refuse to issue the numbers)</td>
</tr>
<tr>
<td>High genetic diversity</td>
<td>Number of apple varieties</td>
<td>Currently no demand (but could be as there are varieties which would be suitable for allergic people), no availability of fruit in supermarkets, pomologists dying out; maybe number of single-variety products produced/sold?</td>
</tr>
<tr>
<td>maintaining and enhancing landscape character</td>
<td>Protected landscape areas, but not necessarily applied on all where it would have been relevant; carrying out an own visibility analysis would be to laborious but could lead to valuable insights on contribution to distinctiveness of the landscape</td>
<td>Same as outdoor recreation? (see below)</td>
</tr>
<tr>
<td>Outdoor recreation</td>
<td>Recreational forests, designation as area with priority function in regional plans, hiking trails (no data available)</td>
<td>Number of tourists? How to assess one-day visits and local recreation?</td>
</tr>
<tr>
<td>Educational activities</td>
<td>Number of orchard pedagogues</td>
<td>Number of schools in the area which do courses on orchards, number of orchard pedagogue events</td>
</tr>
<tr>
<td>Rural vitality</td>
<td>Traditional orchard events</td>
<td>Traditional orchard events (championships, parties, harvesting events etc.)</td>
</tr>
</tbody>
</table>