

The role of cooperation for sustainability innovations in the agriculture and food sector

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Abstract: *The necessary transitions in the agriculture and food sector require ‘second order’ innovations which often are the result of collaborative networks between heterogeneous partners. The paper is based on the analysis of cooperation in two different German case studies: One case deals with the development of a sustained value chain for ethical poultry production while the other case aims at the combination of different niche innovations for cultural landscape conservation. The analysis is based on a conceptual framework with the central categories ‘goals of the innovation and motives of cooperation’, ‘actors and their resources’, ‘distribution of costs and benefits’, ‘cooperation structure and management’. The comparison reveals similar and different challenges for establishing the two types of innovation which can partly be explained by different niche-regime interactions. Both cases face the challenge that partnerships for funding of the added societal values have to be built up. The establishment of a new value chain is confronted with competitive disadvantages of niche products on the market due to challenging the paradigm of specialisation on different levels of the value chain. The case of cultural landscape preservation is confronted with different perspectives on the aspired qualities of the landscape and the difficulty of establishing partnerships between farmers, as well as actors from nature protection and tourism. Here, regional conflicts, mistrust and a lack of perceived interdependence are main challenges for building up cooperation. Both cases show a high degree of complexity which affords professional cooperation management. Based on the analysis, the paper reflects the potentials and limits of cooperation in sustainable innovation processes.*

Keywords: *sustainability innovations, cooperation, cooperation management, ethical poultry production, organic value chains, cultural landscape conservation, marginal wetlands*

1. Introduction

In the last decades, agriculture and rural areas have undergone rather fundamental changes, shifting from a ‘productivist’ to a ‘post-productivist’ era (Van der Ploeg et al. 2000, Knickel et al. 2004, 2009). The increased recognition of the multi-functionality of agriculture and rural areas goes along with a ‘turn to quality’ and the rise of alternative agro-food networks (Goodman 2003). Knickel et al. argue that the transitions in agriculture and rural areas indicate a ‘second order change’, which is challenging widely shared assumptions by reframing agricultural and rural relations. Innovation or regime developments for more sustainable agro-food systems could for instance include developing new solutions among actors from different domains that link business and biodiversity, re-configure the role of agriculture in relation to nature conservation, develop resilient and diverse landscapes, establish regional and local production or foster multifunctionality of agriculture (Zwartkruis et al. 2016). To be able to deal with this type of change, requires ‘second order’ innovations which often are the result of collaborative networks with exchange of information and learning processes taking place. There are some analyses on cooperation along the added value chain to launch prod-

ucts with a certain quality (e.g. regional origin, specialties) and in the context of regional development. However, so far little has been said regarding the limits of cooperation. Ingram et al. (2015) point out that innovation processes in this sector differ regarding the compatibility of the innovation with the existing dominant regime and the resulting niche-regime interaction. This paper wants to take up these insights and analyse whether the challenges for cooperation differ for different types of innovation and discuss the role, contribution and limitations of cooperation management as an important part of innovation management.

The paper is based on research done in the transdisciplinary research project “ginkoo”¹ that aims at a better understanding of regional innovation processes in the agriculture and food sector and the development of supporting instruments and tools. Our thesis is that cooperation is a central mechanism for the development of sustainability innovations since it a) guarantees that perspectives from heterogeneous actors are considered to create holistic sustainability qualities, and b) may compensate competitive disadvantages that often characterise sustainability innovations by stabilising the market position of the involved actors respectively the funding of sustainability qualities (Nölting & Schäfer 2016). We want to gain explorative evidence regarding these theses via the analysis of two contrasting case studies: One case deals with the development of a sustained value chain for ethical organic poultry production including farmers, processors, a marketing association, a wholesale trader and organic food stores. The other case aims at the combination of different niche innovations for the conservation of a cultural landscape with a high degree of biodiversity and attractiveness for tourism. The central focus of this case is value creation for further cultivation of marginal wetlands. For the analysis we use an analytical framework which was developed based on economic and sociological literature on cooperation, network as well as innovation management (Nölting & Schäfer 2016).

The comparison of cooperation in these different case studies allows to draw conclusions regarding the potentials but also limits of a cooperation management for developing and establishing different sustainability innovations in the agriculture and food sector.

The paper deals with the following research questions:

- Which similarities and differences can be detected regarding the challenges of cooperation in two contrasting cases of sustainability innovation processes in the agro-food sector?
- What are the potentials and limits of cooperation management for the establishment of sustainability innovations? Can limits be explained with the differing compatibility of innovative niches with the dominant regime?

2. Theoretical Background

During the last decades many excellent ideas for sustainable agriculture and food production have emerged which often cannot be established successfully within the dominant structure of food markets, regulations, subsidies and consumption patterns (Knicker et al. 2017). Alternative forms of sustainable production and niche innovations do not diffuse automatically to replace outdated elements of the incumbent agri-food regime (Grin et al., 2010; Ingram et al., 2015; Maye, 2013). Against this background, practitioners as well as researchers advocate cooperation in order to overcome obstacles, and analysis of best practice cases demonstrate its potential (Marsden and Smith, 2005; Schermer et al., 2011; Fichter and Clausen 2013; Anderson et al., 2014; Dyg and Mikkelsen, 2016). Economic literature points out that cooperation allows single enterprises to concentrate on core competences and pool resources resulting in acceleration of innovation cycles, improvement of the market position and increase of economic benefits (Swoboda, 2003). Authors from industrial and network sociology em-

¹ Ginkoo is funded from 2014-2019 by the German Federal Ministry of Research and Education. More information at www.ginkoo-projekt.de

phasise that social relationships of reciprocity and trust are crucial elements of cooperation (Sydow, 2010) and that power structures within networks shape cooperation (Weyer, 2011). Literature on innovation in the agro-food sector places learning at the core of innovation processes and understands innovation as changed patterns of interaction between people, tools and natural resources (Brunori et al., 2013).

Based on a literature review from different disciplinary strands, Nölting and Schäfer (2016, in review) developed a framework for empirical analysis of cooperation, reflecting the specificities of cooperation for establishing sustainability innovations. It highlights the following characteristics: the goals of the innovation and motives for cooperation, selection of actors and distribution of costs and benefits between collaborating partners as well as the role of operational management within cooperation. Along the temporal dimension, four phases of the cooperative process are differentiated: initiation, development, realisation and transformation. We understand cooperation as voluntary collaboration of independent partners who work together for a specific purpose that they can achieve better jointly than individually. Further, we specify *cooperation for sustainability innovations* as horizontal and/or vertical multi-actor collaboration between actors such as enterprises, members of civil-society, public actors or researchers, with the common goal of contributing towards a sustainable agriculture and food sector. A minimum level of organisational and management structures are necessary for successful, stable cooperation, which needs to be based on trust, comprises a reciprocal exchange of resources (e.g. material and financial resources, knowledge, experience), and is characterised by learning and experimenting with new practices.

Ingram et al. (2015) point out that different types of Learning and Innovation Networks for Sustainable Agriculture (LINSAs) differ in their compatibility with the assumptions, practices and rules of the dominant agricultural regime and resulting niche-regime-interactions. They differentiate between compatible, complementary, emergent, divergent or oppositional modes of interaction. This might be a valuable starting point to interpret potentials and limits of setting up partnerships for sustainability innovations.

3. Methods

The empirical basis of our contribution is embedded in the transdisciplinary action research approach of the ginkoo project (Coughlan and Coughlan 2011). The overall research approach follows a constructivist grounded theory approach, starting from the innovation management practices of actors and developing tools to support these practices in order to develop model solutions for sustainable land management. In two case studies actors are accompanied in their ongoing innovation process, supporting the development of new ideas and putting them into practice. The data for our contribution are both derived out of the transdisciplinary process as well as from specific data collection aimed at deepening the empirical insights regarding cooperation aspects in innovation processes. The transdisciplinary approach involved a joint situation analysis of the case studies with workshops and interviews that were carried out by at least two team members using a jointly developed interview guide. Moreover, data from participating observation from transdisciplinary working groups was included. Overall, the timespan of our empirical work presented here covered a period of three out of five project years.

The data used for the analysis of the innovation process and cooperation between the partners are based on the following empirical analyses: In the case of ethical poultry production nine interviews with actors along the value added chain were carried out, in the case of creating value for the cultivation of marginalised wetlands eight interviews were carried out with representatives from relevant regional stakeholder groups such as farmers, nature conservationists, tourist experts, and a political representative during the situation analysis. The semi-structured interviews contained questions regarding the development and the aim of the innovation, the choice of cooperating actors and the structure of the actor constellation, challenges in the innovation process as well as supportive or hindering framework conditions for successful establishment of the innovation. In addition to the interviews, in both cases sev-

eral workshops took place which allowed participant observation. All workshops involved participants either across the value chain in the ethical poultry case study or in the wetland case actors from different sectors such as nature conservation, agriculture and tourism. In both cases, actors had not worked together in a participatory process with each other prior to the project. Within the transdisciplinary research project, the coordinators of the innovation projects in the case studies regularly report about challenges and difficulties of the innovation process and cooperation between the partners. Empirical data (interview transcripts and protocols from workshops) was analysed using the categories of the analytical framework as sensitising concepts.

4. Results

As described in section 2 we used an analytical framework for the analysis of strengths and weaknesses of cooperation for sustainability innovations in the agro-food sector. The framework differentiates different phases of the cooperation and defines central categories for analyzing its qualities. In the following sections cooperation in the two case studies is analysed on the basis of the framework (Nölting and Schäfer 2016, in review).

4.1 Identification of the cooperation phase

4.1.1 Ethical organic poultry production

The project of a dual-purpose breed was initiated as an innovation in organic poultry production in 2011. The ‘normal’ form of chicken husbandry, including the killing of male chicks in egg production, was increasingly taken up critically by the media, damaging especially the image of organic animal husbandry, which is supposed to serve animal welfare. In the accompanied regional initiative half a million eggs, 3000 hens and 3000 broilers per year are produced on seven farms by now, a rather small quantity even in the context of organic farming. Despite its initiation some years ago, the cooperation is still in the **development phase** since the innovation is not established on the market yet and cooperation structure and management still have to be optimised (see section 4.2).

4.1.2 Value creation for cultivation of marginal wetland

The second case study is located in a biosphere reserve in the Northeast of Germany. It is taking up the challenge that wetlands, which are typical for a specific cultural landscape, can no longer be cultivated profitably, resulting in re-forestation and loss of biodiversity. Further on, this cultural landscape is very important for regional identity and of high relevance for the touristic sector. During the last years there have been numerous attempts to ensure further cultivation of these areas (1.500 to 2.000 ha) via diverse funding measures or attempts of value creation. However, up to now no long-term solution could be established which integrates the different interests of land owners, farmers as well as actors from nature conservation and tourism. The regional innovation therefore is still in its **initiation phase**.

4.2 Analysis of the cooperation structure and management

Based on the analytical framework (Nölting & Schäfer 2016), table 1 gives an overview about the central characteristics of cooperation in the two case studies which will be described in more detail in the following sections.

Table 1:

Categories for cooperation analysis	Value added chain innovation: ethical organic poultry production	Regional system innovation: Value creation for cultivation of marginal wetland
Goals	Establishing ethical organic poultry production with a dual purpose breed; small stocks of chicken in mobile stables; cooperation with mixed farms; regional processing	Ensure value creation for cultivation of marginal wetlands and conservation of cultural landscape with high importance for biodiversity, regional identity and tourism by combining

	and marketing	innovative technical, organisational and financial elements
Actors	Value added chain: farmers, slaughterhouse, marketing association, whole sale trader, organic stores and supermarkets	Land owners, farmers, actors from tourism and nature conservation
Costs and Benefits	Little data on 'real costs'; cost coverage for the farmers (but not sufficient profits), financial deficits but image gain for marketing association and wholesale trader	Costs for cultivation of sensitive areas and cultural landscape conservation are not covered. Mix of financial instruments is aimed for; image gains for actors from tourism are possible. Exchange between actors results in learning processes and regional social capital.
Structure of the cooperation	Marketing association as coordinator; few formal agreements and institutionalised structures	Temporary cooperation between part of the actors; no overarching institutionalised, generally accepted cooperation structure
Cooperation management	Unclear distribution of responsibilities and tasks; lack of resources for management and monitoring	No integrative cooperation management; lack of personal and financial resources

4.2.1 Goals of the innovation and motivation for cooperation

The *value added chain innovation* pursues the goal of establishing high quality products (eggs and meat from a dual-purpose breed) which contain additional societal benefits as ecological and ethical production. The product innovation is linked to changes in breeding practices and consumption habits. Farmers still have to gain experiences with breeding dual-purpose chicken (instead of hybrid species) and consumers are confronted with different quality of the meat (longer preparation time) and no all-year-round supply. The actors along the value added chain cooperate because they want to establish this quality product on the market and distinguish themselves as pioneers in this field. Since public attention has been high for the negative aspects of conventional chicken production (killing of male chicklets and other sustainability challenges of animal production), there are good chances for image gains.

The vision for a *regional system innovation* pursues the goal of enabling further cultivation of the endangered wetlands by value creation. To achieve this goal, the combination of several innovative technological, organisational and financial elements is aimed at. One of the options is a better value creation for the farmers by using the harvested grass as a resource for producing heat. However, so far the technical solution to process the harvested material is still in its testing phase. Another complementary option is the establishment of financial instruments as e.g. sponsorships by touristic actors which can be used to finance farmers' efforts for cultivating those sensitive areas. The goal of the cooperation is to overcome the limits of 'small solutions' by working on an integrated strategy which includes all actors who benefit from and rely on the qualities of the cultural landscape.

In both cases the goal(s) of the respective innovation were not clear enough yet. Besides the workshops with the different actors of the value chain, revision of the website and formulation of a cooperation contract had the side effect of agreeing on common goals in the case of ethical poultry production. In the case of the regional system innovation, the process of clarifying and defining common regional goals is still ongoing. So far, actors from agriculture, nature protection and tourism partly have very different visions about which type of cultural landscape should be preserved and which kind of land use should be possible. A common vision for a "desirable cultural landscape" was not formulated explicitly enough so that also the aims of the cooperation for the development of the single approaches were somewhat

unclear in the beginning (König et al., forthcoming). However, even if there is a lacking awareness for mutual interdependency between the actor groups the loss of cultural landscape is widely acknowledged and perceived as a major issue by all parties.

The two cases differ regarding their aim of ‘establishing’ the innovation: while the value added chain innovation mainly follows a market oriented approach, the regional innovation searches for additional possibilities of creating value since the market does not acknowledge the created common goods adequately. In the case of ethical poultry production success can be measured via sales figures and benefits for the partners along the value added chain. In the case of the regional system innovation it is more difficult to measure success with a single indicator since the formulation of aims and definition of products is more difficult due to the diversity of the cultural landscape. The size of endangered wetland areas which can be brought back to cultivation via a successful value creation model is only one possible criterion.

4.2.2 Actors and their resources

Cooperation of actors along the value added chain is necessary for the establishment of the *value added chain innovation* (eggs and meat from ethical organic poultry production). The project was initiated by an organic marketing association and a regional wholesale trader as the core partners of the cooperation. Farmers were contacted via the organic marketing association. In the year 2016 altogether seven rather small mixed farms were partners of the project. However, in 2017 two farms left the cooperation because one was not content with the realised profits and the other farmer retired. Slaughtering of the poultry is carried out by two regional contractors who are not directly integrated as cooperation partners, but act as service providers. Since the organic wholesale trader delivers organic specialised stores only (and no conventional supermarkets), trading is restricted to this market segment. Cooperation analysis in this case made clear that the organic stores, which are addressing the consumers are not adequately integrated in the cooperation and more efforts are needed for communication with the consumers. Since sales, especially of the poultry meat, remained unsatisfactory without further efforts, an organic supermarket chain was won as new cooperation partner. However, this goes along with further partners and new requirements e.g. regarding quality and packaging, since this supermarket chain is dealing with all the meat they sell via another single processor. The high commitment of the initial actors for ethical poultry production is a very positive aspect. However, the constellation remains very fragile because of quality problems and sales numbers for meat that are lower than expected. Handling the innovative products parallel to established logistic and communication routines requires continuous high coordination and communication efforts. If these efforts are not accompanied by rising profits, there is the danger of increasing discontent of the involved partners.

Since the goal of preserving a sensitive *cultural landscape* is linked to certain areas in a specific region, cooperating actors are restricted to this region (‘place based’) and choice is limited. In the studied case this partly leads to the necessity for targeting cooperation between partners who had negative experiences with each other on previous occasions and entrenched positions as well as mistrust. This is especially true for actors from agriculture and nature protection who traditionally view each other rather as opponents than allies. Even though there are great reservations towards each other, the awareness for the problem of an endangered cultural landscape is acknowledged by all stakeholder groups. However, coming to agreements to assure cultivation of sensitive wetlands is difficult, because the land is owned by a multitude of land owners who partially do not live in the region. Cultivation of those small plots is sometimes carried out by agricultural service providers who expect adequate payment. Other plots are still cultivated by farmers who will retire in the near future. This multiple owner and user structure goes along with a loss of identity and responsibility, hindering commitment for a collaborative strategy for the maintenance of the cultural landscape. Regarding actors from tourism, there is only a gradually growing sense of interdependence and shared responsibility for conservation of the cultural landscape and its attractiveness for tourists, partly fueled by the workshops of the ginkoo project. This group is also very heterogeneous including bigger hotels and small guest houses, as well as restaurants,

canoe and bike rentals, regional food stores, cultural institutions and tourism offices. So far, part of the administration of the biosphere reserve and a regional civic trust have been trying to initiate cooperation between the different partners and innovative projects. However, these organisations partly are not viewed as acting as ‘neutral’ moderators.

The comparison shows that it is easier to start a cooperation between partners with similar values and goals in the case of the value chain innovation. However, to establish the innovation at the market, inclusion of further partners might be necessary who do not share the idealistic goals of the pioneering partners to the same extent. In the case of cultural landscape conservation an innovative cooperation model is more dependent on the existing regional actors. Certain institutions (as e.g. tourism associations) have to be included to establish the innovation on a broader scale. Therefore, a common vision and understanding of which kind of cultural landscape is supposed to be preserved and the ecological and economic implications are necessary. To be able to develop this vision some kind of an overarching communication forum and “neutral” moderation is necessary which to some extent could be provided by the research team.

The experiences of the accompanying participatory observation also show that development of an innovation is not a linear process: the entry of new partners is accompanied by irritation which makes iterative processes of adjusting innovation goals necessary.

4.2.3 Distribution of Costs and Benefits

As already mentioned, commitment of the core partners for *ethical poultry production* is high. Efforts are made to cover the costs of the farmers while the organic trading association and the regional wholesale trader so far are bearing the deficits which mainly result from insufficient meat marketing. To calculate the ‘real costs’ is difficult, since farmers are still not experienced with cultivation of this special breed and partly not used to full cost calculation. Price-making for the point of sale is not based on surveys or tests but on estimates ‘what consumers are willing to pay’ and comparisons with similar organic products and practices of standard price differences. So far, one of the farmers has left the network because he was not content with the achieved profits. Since chicken production was meant as a new source of income for mixed farms, this is a demotivating experience which may also influence other interested farmers. The organic marketing association, the wholesale trader and the organic stores are benefitting from image gains connected to the innovative approach. The project has won prizes and is given a lot of attention by the media especially since criticism towards conventional ways of raising poultry is growing. Even if the organic supermarket chain is still selling small quantities (of the meat), it has taken up the issue already several times in its weekly leaflet for customers. So far, costs for cooperation management are covered by the transdisciplinary research project and not part of the price calculation for eggs and meat.

Regarding the *cultivation of marginal wetlands*, the costs are partly covered by farmers whose efforts are not acknowledged adequately. A growing part of those sensitive areas are no longer cultivated since costs are not covered. So far, only a very small part of the areas is cultivated on the basis of innovative cooperation or financial models as e.g. sponsoring or via ‘wetland stocks’ which are sold to touristic actors or tourists. The incoming money is used to pay farmers or agricultural service providers for cultivation of the endangered areas. Those actors who have the highest benefit of the cultural landscape – the actors from tourism and the tourists – are almost not contributing financially to its conservation yet. There is also no governmental compensation for the preservation of biodiversity on these areas on national or European level.² The resulting unintended consequences – loss of biodiversity and of identification with a historical grown landscape - have to be borne by the general public (especially of future generations).

² On the European level there is a compensation for cultivating marginal areas. However, since these areas sometimes cannot be approached with agricultural machines due to high moisture, cultivation cannot be guaranteed for a period of five years which would be necessary to receive compensation. On the regional level, compensation for cultivating this type of soils has been reduced.

The comparison makes clear that compensation of costs for the achieved or aimed for sustainability qualities is a crucial issue which is not solved yet satisfactory in the two cases. Compensation of those costs makes it necessary to cooperate with new actors (as the consumers or touristic actors) which have to be sensitised for the sustainability problem and be convinced of the innovation. Governmental compensation or rules which internalise external costs would be another possibility to confront this challenge, which is, however, not in sight for the two case studies.

4.2.4 Structure and management of the cooperation

In the case of *ethical poultry production*, cooperation was very informal before the start of the transdisciplinary research project, relying on implicit assumptions, that this innovation can be incorporated into existing value chain procedures just as any other. On the one side, these informal structures are a good sign of mutual trust between the partners. On the other side, division of tasks and responsibilities especially between the organic marketing association and the regional wholesale trader were not clear and repeatedly had to be discussed. Our analyses also made clear that none of the partners really felt responsible for intensive communication with the managers of the organic stores and consumers - an essential task considering the special qualities of the products and the higher price. Based on recommendation from the research partners, a contract between the two core partners was signed, specifying rights and duties but also elaborating on the innovation goals. An agreement with the farmers which specifies delivery dates, quantities (eggs and meat) and a documentation of all necessary handling processes along the value chain is in preparation. Cooperation management is located at the organic marketing association as the connecting institution between the farmers on the one side and trade on the other. However, so far the management has a situational character, mostly operating in response to occurring difficulties. Also due to restricted resources, a lack of strategic development can be observed. Being confronted with pressing issues in daily routines, further advancement of the innovation often is of secondary priority. During the transdisciplinary process knowledge gaps and the complex character of this innovation could be specified and communication among value chain actors was supported. The tension between the small size of the project and the need for developing knowledge through cooperation bears a risk, especially in the case of fluctuation of employees (and knowledge).

As mentioned above, there is no generally accepted cooperation management in the case of *value creation for marginalised wetlands* yet. Professionals from the biosphere reserve, who are also active in the regional civic trust, have been trying to initiate cooperation between different partners. Due to embeddedness of the biosphere reserve in specific administrative structures and their daily routines, the effort to overcome these logics and to implement a strong and pro-active project management and monitoring culture remains a challenge. Projects as the 'wetland stocks' or the establishment of an oven for thermal utilisation of the mowed grass are valuable elements of an integrative strategy of value creation for marginalised wetlands. So far, however, cooperation mostly has a radial structure with the biosphere reserve as linking institution in the middle and little contact between the other actors. A generally accepted institutionalised structure for the exchange and coordinated action between actors from agriculture, nature protection, regional development and tourism is still missing. This goes along with a lack of a joint vision about the qualities of the cultural landscape that are worth of being preserved.

In both cases cooperation management is characterised by a lack of resources resulting mostly in situative operational activities instead of strategical development. Both innovations require parallel activities on different levels which makes cooperation management a challenging task which affords comprehensive competences. The transdisciplinary resource project was a chance to increase capacities for cooperation management and to take strategic steps. However, so far both innovative constellations are still fragile and their establishment remains insecure.

5. Discussion and Conclusions

Analysis of the two different cases reveals some similarities and differences in regard of establishing the sustainability innovations. Both cases struggle with the challenge of setting up partnerships which allow adequate acknowledgement – and financial compensation - for the generation of sustainability qualities. While in the case of ethical poultry production products have been introduced to the market, the wetland case is in an earlier stage where actors are looking for cooperation partners to develop and test different approaches for an integrative solution. Even if some groups benefit to a greater extent from these sustainability qualities (e.g. touristic actors in the case of landscape cultivation), they also contribute to the common good which makes attribution of responsibilities difficult. In both cases, potential to improve cooperation management could be detected as clarifying the innovation goals, specifying responsibilities and distribution of tasks, getting a clearer picture of costs and benefits for the different partners (including non-financial benefits) and introducing a more strategic instead of a situational cooperation management. The encountered difficulties also confirm challenges mentioned in innovation literature as shifting criteria linked to the inclusion of new actors (Van den Veen et al., 1999) and the iterative character of establishing (sustainability) innovations. However, even if the initiatives succeed in optimising cooperation management (which is also a question of adequate resources), it remains unclear if the innovations can be stabilised without explicit windows of opportunity and supportive governance structures. Cooperation management in the two studied innovation processes is challenged by the very limited resources contrasting to the “size” of the sustainability challenges the actors want to solve with their approaches. What is more, through the experimentation within the ginkoo project the fragility and somehow amoeboid emerging model solutions, clear cooperation arrangements are not easy to achieve. Rather, the emerging model solutions require a reflexive cooperation management.

Referring to the characterisation of niche-regime-interactions introduced by Ingram et al. (2015), establishment of *ethical poultry production* could be categorised as ‘divergent’ due to assumptions, practices and rules which differ from the mainstream agricultural regime and break with dominant patterns. Introduction of a dual purpose breed questions the dominant paradigm and long term innovation path of specialisation and increase of efficiency and re-integrates the production of eggs and meat which have been optimised separately during the last decades. Re-integration aims at overcoming the negative ecological and ethical effects of industrial poultry production but goes along with less output and significantly higher prices. The products also irritate conventional consumer expectations by not being available all year round, changing qualities (e.g. egg size depends on the age of the herd) and less convenience since the high quality meat affords longer preparation times. To be able to communicate the special qualities – and the higher prices - to the consumers, integrative forms of marketing would be necessary which link the two products and illustrate their interdependency. On the other side, some consumers perceive limited availability, non-homogenous quality etc. as proof of authenticity of the products. Within the ginkoo project, marketing tests are carried out with presenting eggs and poultry meat together in a joint shelf and sponsorship models are designed which address a certain group of ethical aware consumers (“200 eggs go along with a stewing hen and a broiler”). Another, more conventional strategy of marketing the products separately, could be to find actors e.g. from high-end-gastronomy who appreciate the high quality of the meat and are willing to pay adequate prices. The actors value the chance for entrepreneurial experimentation (Bocken et al. 2018) within the ginkoo project, while the effort of coordinating the tests gives the researchers further empirical insights into transition challenges within established value chains.

Interaction in the case of creating value for the cultivation of marginalised wetlands could be categorised as ‘emergent’, describing innovations at the intersection of agriculture with other sectors. Ingram et al. (2015) refer to energy and health in their cases, but nature preservation and tourism could also be sectors which are relevant for this type of interaction. The authors describe these interactions as ‘intermediary regimes’ with altered rules, languages and institutionalised settings, which often are rather vulnerable since they depend on policy instruments as subsidies (ibid.: 67). Marginalised wetlands are areas where the dominant principle of intensification reaches its limits – output is low due to humidity and soil characteris-

tics. However, further extensive cultivation is desirable to be able to preserve biodiversity and a cultural landscape with importance for regional identity and economic activities as tourism. The dominant agricultural regime has introduced funding measures (compensation) for other disadvantaged areas which are difficult to cultivate as e.g. mountain pastures. The extensive cultivation of marginalised wetlands without producing a traditional agricultural product, e.g. cow fodder, but only mixed biomass, however, so far is neither supported by agricultural policies nor by environmental policies. As long as this is not the case, establishing integrative partnerships which allow compensation for the service of cultivating these areas is an appropriate strategy. Besides the challenge of raising awareness of the touristic sector for its interdependency and co-responsibility, a further shift of self-image of farmers is necessary from being a 'producer' to being (also) a 'landscape-carer'. This kind of shift in professional self-understanding in tourism and agriculture as well as overcoming traditional preconceptions between agriculture and nature preservation affords time and might be dependent on new actors entering the scene or policy developments at national or EU level, e.g. a CAP scenario that assigns farmers a role in maintaining agro-biodiversity and the landscape (Zwartkruis et al. 2016).

Ingram et al. (2015:65) also point out that niche-innovations have better chances to offer solutions, if they can link up to tensions in the incumbent conventional regime. In the case of poultry production criticism about mainstream practices is intensifying and policy measures as a ban of chicklet killing are discussed. This might lead to more openness of actors along the value added chain to test innovative products and practices. The other case can link to the ongoing debate about multifunctional agriculture and its role for landscape and biodiversity conservation which is also captured with the term ecosystem-services. Also, the role of wetlands with regard to climate change might result in more favourable conditions. However, the conceptual linkage between societal discourses and cooperation management needs further exploration.

References

- Anderson, C. R., Brushett, L., Gray, T. W. and H. Renting (2014) Working together to build cooperative food systems, *Journal of Agriculture, Food Systems, and Community Development*, 4(3), pp. 3-9. doi:10.5304/jafscd.2014.043.017.
- Bocken, N.M.P.; Schuit, C.S.C.; Kraaijenhagen, C. (2018): Experimenting with a circular business model. Lessons from eight cases. In: *Environmental Innovation and Societal Transitions*. DOI: 10.1016/j.eist.2018.02.001.
- Brunori, G., D. Barjolle, A.-C. Dockes, S. Helmle, J. Ingram, L. Klerkx, H. Moschitz, G. Nemes and T. Tisenkopfs (2013) CAP Reform and Innovation: The Role of Learning and Innovation Networks, *EuroChoices*, 12(2), pp. 27–33. doi:10.1111/1746-692X.12025.
- Coughlan, P., Coughlan, D. (2011): Collaborative Strategic Improvement through Network Action Learning. The Path to Sustainability. Cheltenham, UK, Northampton, USA: Edward Elgar.
- Dyg, P.M. and B. E. Mikkelsen (2016) Cooperation Models, Motivation and Objectives behind Farm–School Collaboration: Case Insights from Denmark, *International Journal of Sociology of Agriculture and Food*, 23(1), pp. 41–62.
- Fichter, K., Clausen, J. (2013): Erfolg und Scheitern "grüner" Innovationen. Warum einige Nachhaltigkeitsinnovationen am Markt erfolgreich sind und andere nicht. Marburg: Metropolis.
- Goodman, D. (2004) Rural Europe redux? Reflections on alternative agro-food networks and paradigm change, *Sociologia Ruralis* 44 (1), pp. 3-16.
- Grin, J., Rotmans, J. and J. Schot (2010) *Transitions to Sustainable Development: New Directions in the Study of Long Term Transformative Change*. New York, London: Routledge.
- Ingram, J., Maye, D., Kirwan, J., Curry, N. and K. Kubinakova (2015) Interactions between Niche and Regime: An Analysis of Learning and Innovation Networks for Sustainable Agriculture across Europe, *The Journal of Agricultural Education and Extension*, 21(1), pp. 55-71.

- Knickel, K., Redman, M., Darnhofer, I., Ashkenazy, A., Calvão Chebach, T., Šūmane, S. et al. (2017): Between aspirations and reality. Making farming, food systems and rural areas more resilient, sustainable and equitable. In: *Journal of Rural Studies*. DOI: 10.1016/j.jrurstud.2017.04.012.
- Knickel, K., Renting, H. and J. D. van der Ploeg (2004) Multifunctionality in European Agriculture, in: F. Brouwer (ed.) *Sustaining Agriculture and the Rural Economy: Governance, Policy and Multifunctionality*. Northampton: Edward Elgar Publishing, pp. 81-103.
- Knickel, K., Brunori, G., Rand, S. and J. Proost (2009) Towards a Better Conceptual Framework for Innovation Processes in Agriculture and Rural Development: From Linear Models to Systemic Approaches, *The Journal of Agricultural Education and Extension*, 15(2), pp. 131–146.
- Marsden, T. and E. Smith. (2005) Ecological entrepreneurship: sustainable development in local communities through quality food production and local branding, *Geoforum*, 36(4), pp. 441–451.
- Maye, D. (2013) Moving Alternative Food Networks beyond the Niche, *International Journal of Sociology of Agriculture and Food*, 20(3), pp. 383–389.
- Moschitz, H., Roep, D., Brunori, G. and T. Tisenkopfs (2015) Learning and Innovation Networks for Sustainable Agriculture: Processes of Co-evolution, Joint Reflection and Facilitation, *The Journal of Agricultural Education and Extension*, 21(1), pp. 1-11.
- Nölting, B. and M. Schäfer (in review) *Framing cooperation as a key element for sustainable agriculture and food production: an analytical framework*.
- Nölting, B. and M. Schäfer (2016) *Cooperation management as a distinct function in innovation processes for alternative food production and consumption - potentials and limitations*. Paper for the 12th European IFSA Symposium, 12th till 15th of July 2016; download: http://ifsa.boku.ac.at/cms/fileadmin/IFSA2016/IFSA2016_WS18_Noelting.pdf
- Schermer, M., Renting, H. and H. Oostindie (2011) Collective farmers' marketing initiatives in Europe: Diversity, contextuality and dynamics, *International Journal of Sociology of Agriculture and Food*, 18(1), pp. 1-11.
- Swoboda, B. (2003) Kooperation: Erklärungsperspektiven grundlegender Theorien, Ansätze und Konzepte im Überblick, in: J. Zentes, B. Swoboda and D. Morschett (eds) *Kooperationen, Allianzen und Netzwerke: Grundlagen – Ansätze – Perspektiven*. Wiesbaden: Gabler, pp. 35-64.
- Sydow, J. (ed.) (2010) *Management von Netzwerkorganisationen*. Wiesbaden: Gabler.
- Van der Ploeg, J.D., Renting, H., Brunori, G., Karlheinz, K., Mannion, J., Marsden, T., De Roest, K., Sevilla Guzman, E. and F. Ventura (2000) Rural Development: From Practices and Policies Towards Theory, *Sociologia Ruralis*, 40(4), pp. 391-408.
- Weyer, J. (2011) Zum Stand der Netzwerkforschung in den Sozialwissenschaften, in: J. Weyer (ed.) *Soziale Netzwerke: Konzepte und Methoden der sozialwissenschaftlichen Netzwerkforschung*. München: Oldenbourg Verlag, pp. 39-69.
- Zwartkuis, Joyce, Kok, Marcel, Westhoek, Henk (2016): D2.5 Country report 11 Socio-technical scenarios Dutch land use_2. Sub-report: The land use domain in the Netherlands. PATHWAYS project, Exploring transition pathways to sustainable, low carbon societies. Download: http://www.pathways-project.eu/sites/default/files/D2.5%20Country%20report%2011%20Socio-technical%20scenarios%20Dutch%20land%20use_2.pdf.