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The relevance of proximities for innovative, sustainability-oriented collaboration in local agri-food supply chains

– empirical findings from Southwest Germany

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Abstract

In recent years, small-scale alternative food networks (AFNs) have emerged at the regional and local level in response to the multi-layered challenges related to today's dominating industrialised agri-food system. AFNs aim to reconnect producers and consumers and to re-embed food production in local contexts, acknowledging the need of a fundamental transformation towards a more resilient and sustainable way of producing and consuming food within planetary boundaries. While research so far has mainly focused on well-established collaborative arrangements, this thesis addresses the early phase of AFN formation. The proximity framework by Boschma (2005) was operationalised to analyse the role of geographical, organisational, institutional, social, and cognitive proximity in the establishment of multi-actor collaboration for local agri-food supply chains, and their associated impacts on contextual proximities. An emphasis was laid on the interface between agricultural producers and local authorities. Based on a qualitative comparative case-study approach, the high interrelatedness of different proximity dimensions becomes evident. The research results confirm that proximity may be a driving factor for AFN formation, while a lack of it can hinder the establishment of AFNs. Although the creation of alternative modes of food production and consumption often takes place within a limited geographical area, other, non-spatial dimensions of proximity, specifically social proximity in combination with a basic degree of cognitive proximity, appear to be the main determinant for the successful establishment of AFNs. By promoting the re-approximation between food producers and consumers, AFNs may have a transformative potential. To make use of this, political and regulatory framework conditions should support civil-society actors in facilitating the establishment of AFNs.

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List of abbreviations

AFN	Alternative food network
CSA	Community-supported agriculture
EU	European Union
GHG	Greenhouse gas
SFSC	Short food supply chain

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1 Introduction

Globalisation and the increasing division of labour in recent decades have led to major changes in the ways food is produced and consumed. Agri-food supply chains have become more and more complex and globally interconnected, externalising social and environmental costs of food production (Havinga et al., 2015). However, in the face of global human-induced crises such as climate change, biodiversity loss and land degradation as well as, for instance, the COVID-19 pandemic caused by these pressures on the ecosystems, the vulnerability of global value chains has become evident (Coopmans et al., 2021; Thilmany et al., 2021). They have proven to be highly susceptible to disruptions and changes of economic, political, and environmental nature. The resulting pressing issues such as environmental deterioration and an unequal access to sufficient, healthy and affordable food are not tackled accordingly by the dominant global food system (Hospes & Brons, 2016).

The necessity to address these challenges and to initiate a fundamental transformation of the agri-food system towards a resilient and sustainable agriculture, i.e. a production taking place within planetary boundaries while ensuring global food security becomes evident (Pe'er et al., 2020). At political level, the future-oriented design of agricultural production and consumption is increasingly becoming the focus of discourse, for instance in the context of the Farm to Fork strategy of the European Union (EU). Likewise, in response to a growing sense of disconnectedness from nature and the origin of food and its producers, consumers, especially of the Global North, have begun to demand healthier and environmentally friendly food and locally sourced products (Feldmann & Hamm, 2015; Golob & Kronegger, 2019).

At the regional and local level, innovative forms of civil society-based, collaborative arrangements have emerged to promote environmentally and socially responsible food production and re-embed it in local contexts and short food supply chains (SFSCs) (Chiffoleau & Dourian, 2020). Examples include community-supported agriculture (CSA), farmers'-owned shops, and box delivery schemes (Berti & Mulligan, 2016; Boddenberg et al., 2017; Gugerell et al., 2021; Mansfield & Mendes, 2013; Miralles et al., 2017; Wellner & Theuvsen, 2017). These kinds of initiatives have been framed as "alternative" to the dominant ("mainstream") agri-food system, i.e. challenging prevailing power imbalances between local and global actors, and the industrial modes of agricultural production which are disconnected from any sense of place (Bui et al., 2016; Chiffoleau & Dourian, 2020; DuPuis & Goodman, 2005). They can be summarised under the term "alternative food networks" (AFNs). AFNs aim at reconnecting producers and consumers through new forms of collaboration and coordination, and are based on shared societal goals of a more sustainable and socially just food system (Bui et al., 2016). Thus, despite the diverse designs they may adopt, AFNs share a strong social dimension as common characteristic since they are based on social interaction and collaboration (Chiffoleau & Dourian, 2020).

1.1 Problem statement

Initiatives for localised, sustainable food production face several challenges. They require a high degree of coordination between multiple actors with diverse backgrounds and specific, place-based knowledge (Batterink et al., 2010; Dania et al., 2018). For this reason, AFNs are strongly dependent on the engagement of individual actors, for instance as knowledge brokers or coordinators, especially in the establishment phase (Batterink et al., 2010; Dania et al., 2018). Also, having localised social relations at their core, AFNs usually operate on a comparatively small scale which limits their reach to a niche, i.e. small spaces on the fringes of the regime (Bui et al., 2016; Gugerell & Penker, 2020; Kump & Fikar, 2021; Tello & González de Molina, 2017).

To unlock the transformative potential which AFNs may have in relation to the regime (Rossi, 2017), it is essential to understand the dynamics influencing their emergence and the factors that impede or enhance collaboration. Various studies have investigated what is decisive for the effectiveness of collaboration and innovation in (local) agri-food systems (Dania et al., 2018; Fischer et al., 2009; Hubeau et al., 2017; Kump & Fikar, 2021; Opitz et al., 2019). Hereby, factors such as joint coordination, shared activities, trust, and power play a central role (Dania et al., 2018). Another focus has been placed on behavioural factors which influence the adoption of environmentally sustainable practices by farmers and which can be divided into dispositional factors, social factors, and cognitive factors (Dessart et al., 2019).

A similar approach based on factors of proximity and distance is formulated from the perspective of economic geography (Balland et al., 2015; Boschma, 2005; Torre & Rallet, 2005). Boschma (2005) distinguishes between five dimensions of proximity which may facilitate coordination and innovation: geographical, organisational, institutional, social, and cognitive proximity. While each of these proximities may reduce uncertainty and enhance coordination and joint learning, they can also have negative effects on innovation and cause lock-in effects (Boschma, 2005). Proximity has been studied within a wide variety of research areas including natural resource management (Ouellet et al., 2020; Polge & Torre, 2018). In the context of agriculture and food, the proximity framework has been used to analyse the relations between actors in different types of local food networks, including smallholder producers, consumers, supply chain intermediaries and local authorities (Dubois, 2018; Gugerell et al., 2021; Gugerell & Penker, 2020; Milestad et al., 2010). For the latter, such forms of local initiatives are of increasing interest as they may serve to push forward local and sustainable development strategies because of similar goals shared between AFN actors and local authorities (Doernberg et al., 2019).

Most studies analysing collaboration in local agri-food supply chains focus on well-established collaborative structures. However, less insights exist on the initial phase of network formation and the key factors eventually leading to effective collaboration.

1.2 Research focus

Following the above considerations, this thesis seeks to better understand the dynamics underlying the establishment of local initiatives aimed at achieving local sustainability-oriented agri-food supply chains, and the framework conditions in which collaboration occurs. For this purpose, the framework by Boschma (2005) is used to analyse the relevance of different forms of proximity for collaborations in local food systems guided by two research questions:

1) What role do proximities play in the establishment of multi-actor collaborations for local agri-food supply chains?
2) How could aspects of proximity be managed or substituted in order to achieve long-lasting and stable collaborations?

The first research question, on the one hand, aims at assessing which forms of proximity influence, i.e. hinder or enable, the establishment of a collaborative arrangement, and how. On the other hand, it aims at identifying potential reverse impacts of collaborations on contextual proximities and the relations between collaboration partners and the wider food system. The analysis results may provide first insights to shed on light on the second research question.

This research focuses on the perspectives of farmers and on the role of local authorities for collaboration success. To investigate the research questions, a qualitative case study approach is applied with two small-scale initiatives in Southwest Germany at the centre of analysis. The results of this analysis are expected to gain a better understanding of the role of proximities in the initial phase of alternative agri-food collaborations and identify potential mechanisms for creating effective and stable collaborative arrangements and enhancing their transformative potential.

1.3 Structure of the thesis

Following the introduction to this thesis, chapter 2 provides a review of the main aspects and concepts related to AFNs as well as on key literature on the proximity approach and its application in the agri-food context. The chapter concludes with an operationalisation of proximity for the application on AFNs. Subsequently, the case study design and the process of data collection and analysis are introduced in chapter 3. The results of the qualitative comparative analysis are outlined in chapter 4. Lastly, the findings as well implications and methodological limitations are discussed in chapter 1. The thesis concludes with chapter 0 by highlighting potential contributions and future research priorities.

2 Conceptual framework

Alternative modes of food production and consumption usually seek to adopt a systems perspective, taking into account the interplay of diverse stakeholders and the contextual effects caused by food production including those beyond economic markets. According to Ericksen (2008), a food system encompasses all activities and processes carried out by multiple actors ranging from cultivation to processing, distribution, and consumption of food, as well as social and environmental outcomes of these activities, such as food security and greenhouse gas emissions. Following this definition, the activities of producing, processing and packaging constitute the supply chain of a product. Although this thesis focuses on supply chains as part of the broader food system, the perspective is expanded to include the distribution of food products as well as potential collaboration outcomes, acknowledging that supply chains are not necessarily linear.

2.1 Re-approximation to food and food production

2.1.1 Perspectives on "local", "short", and "alternative"

According to the EU Regulation No 1305/2013 on rural development, a short supply chain involves "a limited number of economic operators, committed to co-operation, local economic development, and close geographical and social relations between producers, processors and consumers" (Regulation (EU) No 1305/2013, Art. 2 (1)). In the agri-food context, this approach of combining "short" and "local" with a social and an economic dimension is complemented by including potential environmental and health impacts (Chiffoleau & Dourian, 2020). The terms "local", "short" and "alternative" are often conceptualised as synonyms or in largely overlapping ways, i.e. authors use varying terms, such as SFSCs or AFNs, to describe similar supply chain constructs (cf. Aubry & Kebir, 2013; Charatsari et al., 2020; Chiffoleau & Dourian, 2020; DuPuis & Goodman, 2005; Milestad et al., 2010).

However, whereas "short" refers primarily to the number of intermediaries, the definition of "local" is more elastic and its delineation relative according to the context considered, indicating some form of spatial proximity based on linear distance, administrative or socio-cultural boundaries (Chiffoleau & Dourian, 2020; Dubois, 2018). Standing on its own, the term "short" could also describe a supply chain in which a producer connects directly to consumers across a large spatial distance via an online shop, without any intermediary. Similarly, "local" may refer to a highly complex economic cluster within a certain geographic region with many processing steps and multi-level supply chains. Additionally, "local" as well as the term "alternative" and the concepts of AFNs and SFSCs are often associated with the notion of "quality" and attributes such as traditional – as sustainable conceived – farming practices, small-scale production, traceability, and a sense of

belonging (cf. Aubry & Kebir, 2013; Bruce & Som Castellano, 2017; Milestad et al., 2010; Sonnino & Marsden, 2006).

In the context of this thesis, the term AFN is used when addressing alternative sustainability-oriented initiatives for local agri-food collaboration as it captures most clearly their small-scale and innovative character and a potential transformative impact on the dominant food regime. This framing of "alternative" is chosen considering a Western European context, recognising that it does not apply as such in regions where small-scale agriculture and reciprocal food networks are the dominant form of food production, distribution, and consumption.

There are different strands of argumentation in the scientific debate on the impacts of local food systems (Brunori et al., 2016; Hospes & Brons, 2016). While there is general agreement on the social benefits, no clear picture exists for economic and, especially, environmental effects of local food production (Chiffoleau & Dourian, 2020). Tello and González de Molina (2017) argue that, if based on certain criteria, local supply chains ideally provide a range of positive aspects. A re-localised circular agriculture may enable the closure of internal loops and nutrient cycles while reducing the dependence on external inputs and, according to the cultivation practices applied, enhancing soil carbon sequestration. Most importantly, circular agricultural may potentially enhance biodiversity through more heterogenous landscapes (Tello & González de Molina, 2017). This is in line with Schmitt et al. (2017) who compared local and global food products in Europe based on five sustainability dimensions (economic, environmental, social, health, and ethics). They found that, overall, locally processed food ranked higher than globally produced food, mainly because of positive, territory-based effects of social and socio-economic nature, and aspects related to biodiversity, animal welfare, and resilience. In contrast, globalised large-scale food production generated significant negative impacts on in-situ biodiversity, but showed less clear results for other aspects such as resource use (Schmitt et al., 2017).

In contrast to small-scale localised systems, large-scale industrialised systems of food production and transportation are more efficient with regard to energy and land use, resulting in lower GHG emissions per unit of output (Schmitt et al., 2017). According to Schmitt et al. (2017), the common assumption that local supply chains generate lower emissions due to reduced "food miles" does not hold, since emissions from farming usually matter more than those from transport. However, a more recent study by Li et al. (2022) suggests that emissions by transport are significantly higher than previously estimated, accounting for 19 % of total food system emissions (including transport, production, and land-use change). Still, global food supply chains play an important role for global food security (at least given the current dependence of some regions of the Global South on the import of staple foods) due to lower production costs and, thus, comparatively low prices (Li et al., 2022; Schmitt et al., 2017). However, this argument may only apply as long as value chains are not disrupted because of war or other crises in the main regions of production (Pörtner et al., 2022).

Overall, assessing the sustainability performance of food supply chains is challenging due to the interconnectedness of human-environment systems (Brunori et al., 2016). Also, global and local food systems do not function in isolation but tend to be interconnected and mutually dependent, making a clear distinction difficult (Brunori et al., 2016; Hospes & Brons, 2016; Sonnino & Marsden, 2006). The necessary decision on how to define system boundaries for the purpose of analysis may lead to the exclusion of relevant aspects (Brunori et al., 2016; Schmitt et al., 2017). For instance, if taking into account externalised costs that occur further upstream of a supply chain (e.g. costs by deforestation and further land use change resulting, e.g., in a loss of biodiversity, GHG emissions, and the displacement of the local population), or downstream (e.g. costs depending on the modes of transport used by consumers, and waste management), a sustainability assessment may likely yield different results and potentially highlight local but intensified and more efficient agri-food systems as the most appropriate response to today's pressures and challenges outlined in the Introduction.

Generally, most authors agree on the positive social effects of local supply chains, specifically AFNs. Following Polanyi (1944) and Granovetter (1985), and their notion of social embeddedness, scholars argue that through the short and immediate character of AFNs, economic activities are re-embedded in social, direct relations between producers and consumers (Chiffoleau, 2009; Chiffoleau & Dourian, 2020; Hospes & Brons, 2016). Accordingly, multi-actor collaboration in local food systems strengthens social cohesion and enhances trust and mutual understanding through direct interaction and better functioning feedback loops (Chiffoleau & Dourian, 2020; Hospes & Brons, 2016; Opitz et al., 2019). This way, it is argued that local food systems may enable the empowerment of (local) producers and consumers towards food democracy and food sovereignty as they can influence the system more autonomously and directly than in industrialised and distant supply chains (Hospes & Brons, 2016; Tello & González de Molina, 2017).

For producers, shortening their supply chains may enable the generation of higher incomes in comparison to exclusively long chains, since there are fewer or no intermediaries which means that a greater percentage of the price is obtained directly by the producers (Chiffoleau & Dourian, 2020). AFNs, in addition, offer business models that may lower the threshold for farmers practicing conventional agriculture to adopt more environmentally friendly practices (Chiffoleau et al., 2016; Chiffoleau & Dourian, 2020; Kump & Fikar, 2021). Clearly, the positive effects for producers only apply to those located within a certain area while producers from farther away, who may have previously been involved in value creation, could be excluded from the market this way. Furthermore, potential negative effects may also arise for producers involved in AFNs as this is usually related to an increased labour intensity (Milestad et al., 2010). More generally, the re-localisation of supply chains potentially strengthens the local economy (Charatsari et al., 2020; Chiffoleau & Dourian, 2020). This way, it provides the potential for increased resilience, reducing uncertainties linked to the volatility of more complex, global supply chains (Vicente-Vicente et al., 2022).

With regard to aspects of consumption, there has been an increasing demand for locally produced food products in the recent decades (Feldmann & Hamm, 2015). Local food is associated to a broad range of societal goals. Consumers link it with higher quality, better taste, and trust, and they view it as more environmentally friendly alternative. One focus of research in this context is whether consumers are willing to pay more for locally produced food provided that they are indeed priced higher compared to food from conventional, long supply chains. In their literature review on perceptions and preferences of consumers regarding local food, Feldmann and Hamm (2015) found that, although not perceived as specifically expensive, the willingness to pay for local food is higher as compared to products with other characteristics such as organic certification or no clear indication of origin. However, a potential attitude-behaviour gap has to be taken into account in this context, as strong positive attitudes towards locally produced food may only be partially reflected in actual behaviour (Feldmann & Hamm, 2015). Besides, a clear communication of the added value of local products is a prerequisite for consumers to be able to identify them and understand the reasons for a potentially higher price (Chiffoleau et al., 2016; Feldmann & Hamm, 2015). Furthermore, AFNs may not only exclude producers beyond the local boundaries but also bear the risk of reinforcing social inequalities by excluding local consumers who do not have the resources or socio-cultural background that would facilitate the access to AFNs (Allen, 2010; DuPuis & Goodman, 2005).

2.1.2 Collaboration and social innovation in the agri-food context

Collaboration. In the context of AFNs, multi-actor collaboration, i.e. independent actors working towards a shared goal in a joint effort (Dania et al., 2018), can have a range of positive effects. By pooling resources, facilitating the access to knowledge and relevant stakeholders, and distributing decision-making rights more evenly among collaboration partners, they can enhance the farmers' entrepreneurial learning and strengthen their position in the supply chain (Dania et al., 2018; Manyise & Dentoni, 2021). Hereby, potential economic benefits are not the main motivation for producers to participate in AFNs (Charatsari et al., 2020). Rather, the producers' (self-perceived) competencies and capacities are decisive. Alternative modes of food distribution require more expertise and knowledge because farmers have to carry out a range of tasks which would usually be done by intermediate parties such as the coordination with multiple collaborating actors and marketing and sales activities (Bruce & Som Castellano, 2017; Charatsari et al., 2020; Chiffoleau & Dourian, 2020; Milestad et al., 2010). At the same time, however, this also leads to a potentially higher workload and carries the risk of self-exploitation (Chiffoleau & Dourian, 2020).

The question of coordination can be a major constraint for the success of collaborations in local agri-food systems. Because of the involvement of diverse actors and activities in AFNs, governance costs, i.e. the costs of designing an appropriate organisational framework for collaboration, tend to be higher than in conventional food systems (Miranda et al., 2021). As AFNs place a stronger focus

on social relations rather than on legally enforceable contracts, they require a high degree of joint effort and the alignment of the actors' different interests and backgrounds (Batterink et al., 2010; Dania et al., 2018; Kump & Fikar, 2021). To facilitate interaction, individual or institutional intermediary actors may function as innovation brokers taking an enabling, i.e. bridging or leading, role (Batterink et al., 2010; Miranda et al., 2021). This may be especially helpful for initiating the collaboration, mediating the network composition, and managing the innovation process (Batterink et al., 2010). Local authorities can play a crucial role as points of intersection, as they usually rely on a wide network of contacts. Thus, they can establish connections and exchanges between different actors and with other similar initiatives which may share their experiences and provide advice.

In general, several key factors have been identified as being decisive for collaboration in sustainability-oriented agri-food systems, such as trust, shared values and motivations, and the sharing of knowledge and resources (Charatsari et al., 2020; Dania et al., 2018; Dessart et al., 2019; Hubeau et al., 2017; Kump & Fikar, 2021; Westerink et al., 2017). Also, cognitive factors, e.g. the producers' expectations and perceptions of risks, costs, and benefits of a certain practice in question as well as the before-mentioned assessment of their own skills influence their decision whether to adopt a new sustainable practice (Dessart et al., 2019). Sharing activities and a clear communication are essential to build trust among collaboration partners and to enable effective processes (Charatsari et al., 2020; Dania et al., 2018; Hubeau et al., 2017).

Stern and Coleman (2015) differentiate between four types of trust relevant for collaborative natural resource management: dispositional trust (a general predisposition to trust another entity), rational trust (trust based on the calculative assessment of an entity's prior performances), affinitive trust (trust based on emotional judgments of an entity's qualities), and procedural trust (trust in systems and procedures). Trust between collaboration partners is necessary for them to be willing to take risks (Charatsari et al., 2020; Dania et al., 2018). However, if risks or investments are relatively high, additional control mechanisms may be required to ensure transparency and to prevent opportunistic behaviour (Hubeau et al., 2017). One example for a contractual governance mechanism may be a labelling scheme (Chiffoleau et al., 2016). It can serve as an intermediary body by generating a sense of identification and streamlining joint coordination efforts.

Social innovation. Despite their great variety, AFNs have an inherent social dimension by building on the re-approximation between producers and consumers as key aspect. The (enhanced) collaboration between diverse stakeholder groups enables the development of new, innovative modes of production, distribution, and consumption of food (Chiffoleau, 2009; Chiffoleau & Dourian, 2020). Therefore, many authors conceptualise AFNs as social innovations (e.g., Boddenberg et al., 2017; Chiffoleau & Dourian, 2020; Gugerell et al., 2021; Kump & Fikar, 2021; Rossi, 2017). According to Neumeier (2012), social innovation refers to "changes of attitudes, behaviour or perceptions of a group of people joined in a network of aligned interests that in relation to the group's horizon of

experiences lead to new and improved ways of collaborative action within the group and beyond." (p. 55). In contrast to technical innovations, the primary emphasis of social innovations is on changed (social) practices. Social innovation is essentially a learning process stimulated through interaction between different actors (Neumeier, 2012).

Whether and how social agri-food innovations can be diffused is a central question of research (Chiffoleau & Dourian, 2020; Kump & Fikar, 2021). Since social interactions are at the core of AFNs, Kump and Fikar (2021) argue that their scalability potential is limited. In order to be effective and enable trust-based collaborative action, AFNs would need to maintain a size which permits regular social interactions. Growing beyond this relatively small scale would require a standardisation common to the conventional food system, potentially resulting in the loss of the AFNs' social character. Kump and Fikar (2021) therefore conclude that AFNs may be best diffused through replication, i.e. establishing "similar structures at different locations" (p. 8).

Despite their small size and niche character, social innovations may have a transformative effect and stimulate a regime reconfiguration (Bui et al., 2016). Processes of gradual systemic changes may be triggered by constructing alternative, shared visions of food and food-related practices, and by involving new actors. For embedding these changed practices in local policies, local authorities play a crucial role (Bui et al., 2016). Yet, the orientation towards the regime with the aim of initiating a sustainability transition is not a common characteristic shared among all the diverse forms of AFNs that exist. In contrary, maintaining a clear demarcation from the dominant system can also be their main objective (Gugerell & Penker, 2020).

2.2 Innovation and coordination from a proximity perspective

Although in the context of AFNs, location plays an essential role, innovation and learning is not necessarily place-bound. In economic geography and related fields, the relevance of location for innovation and interactive learning has been a central focus of research in the past decades. A key concept was formulated by Porter (1998). He argues that spatial closeness is beneficial for an organisation's productivity and its ability to innovate. Within economic clusters, i.e. "geographic concentrations of interconnected companies and institutions in a particular field" (Porter, 1998, p. 78), organisations have better access to expertise, skilled workforce and supply. This way, joint coordination and collaboration between actors is fostered (Porter, 1998).

In contrast to Porter's focus on geographic location, the proximity approach considers different forms of proximity as potentially equally important for interactive learning and innovation (Boschma, 2005). Torre and Rallet (2005) propose an extended view on proximity that reaches beyond spatial distance and takes into account a relational, "organized" dimension of proximity. Boschma (2005) builds on this and develops a distinction between five forms of proximity that may influence the process of coordination and innovation:

- Geographical proximity
- Organisational proximity
- Institutional proximity
- Social proximity
- Cognitive proximity

According to Boschma (2005), proximity between actors is important for their capacity to innovate and learn, but it does not necessarily have to be spatial proximity. Instead, other dimensions may offer alternative solutions for coordination. While a certain degree of cognitive proximity is a necessary precondition for successful innovation to occur, the other four dimensions of proximity may contribute to more effective collaboration. Boschma argues that a lack of spatial proximity can be compensated by organisational, social and/or institutional proximity. While high levels of proximity may reduce uncertainty and the risk of opportunism, they can also go along with a lack of openness and flexibility resulting in a lock-in effects. In other words, both too little and too much proximity can hinder effective learning and coordination (Boschma, 2005).

Although Boschma (2005) takes a broader perspective on innovation and does not explicitly define the term itself in the context of proximities, in this thesis the focus lies on social innovation in the agri-food context, specifically AFNs, as outlined in chapter 2.1.2.

In an article following on from Boschma (2005), Balland et al. (2015) acknowledge the dynamic character of proximities and the key influence that time has on learning and the evolvement of relationships (Balland et al., 2015). They describe a central evolutionary process for each of the five forms of proximity, arguing that knowledge ties become stronger over time, and the interacting actors more similar.

Geographical proximity. Geographical proximity refers to the "spatial or physical distance between economic actors, both in its absolute and relative meaning" (Boschma, 2005, p. 69). In this context, "relative" implies that the degree of geographical proximity has to be assessed considering the context of the collaboration in question. Spatial closeness between actors facilitates the development of trust-based relations (social proximity) as well as the bridging of knowledge gaps and the transfer of tacit information (cognitive proximity). To benefit from these positive effects of geographical proximity, it is not necessary to establish a permanent co-location. Moreover, communication and information technologies as well as a strict coordination and division of tasks (organisational proximity) may compensate to some extent the lack of physical closeness (Boschma, 2005). Therefore, geographical proximity per se is not a prerequisite for effective collaborative innovation. If geographical proximity is combined with a high degree of cognitive or organisational

proximity such as in specialised clusters, a spatial lock-in may occur. This can be prevented through geographical openness, for instance by establishing non-local linkages (Boschma, 2005).

With regard to the development of geographical proximity over time, spatial vicinity of collaboration partners may attract other actors or influence their (re-)location decisions (Balland et al., 2015). Eventually, this could result in a growing network of knowledge through agglomeration. In relation to other proximity dimensions, geographical proximity is the least dynamic one as the decision for one location or another cannot be reversed easily (Balland et al., 2015)

Organisational proximity. The effectiveness of collaborative learning and innovation depends on the actor's capacity to coordinate their actions and combine their knowledge (Boschma, 2005). This transfer of knowledge is facilitated through organisational arrangements. Accordingly, organisational proximity refers to "the extent to which relations are shared in an organisational arrangement, either within or between organisations" (Boschma, 2005, p. 65). Shared spaces of relations may be created through similarity between actors or organisations, or through membership, i.e. belonging to the same organisation. Organisational proximity is closely related to the cognitive dimension of proximity since it defines the specific organisational set-up in which collaborative learning and information exchange are to take place. The level of organisational proximity is determined by the degree of control and the rate of autonomy in organisational arrangements, ranging from low to high organisational proximity (no ties between actors vs. strong hierarchy-based ties respectively). While the latter may lead to relations being locked in closed hierarchical systems lacking flexibility and mechanisms of feedback, low organisational proximity could favour opportunistic behaviour (Boschma, 2005). A solution may be loosely coupled systems which are based on central coordination and control mechanisms while maintaining the autonomy of individual actors and ensuring openness and flexibility necessary for effective innovative collaboration. According to Boschma (2005), strong hierarchical structures may have negative impacts on trust-based ties between actors (social proximity).

Balland et al. (2015) argue that organisational proximity can eventually lead to the formalisation of collaborative ties through a process of integration. In the context of larger enterprises or knowledge networks, for instance, this could mean imply mergers or acquisitions to ensure control and avoid spillovers of knowledge (Balland et al., 2015).

Institutional proximity. Human interaction takes place within an institutional setting. According to Hall and Taylor (1996), institutions provide "frames of meaning" (p. 947), i.e. "moral or cognitive templates for interpretation and action" (p. 939). As such, institutions influence the behaviour of individuals and the strategies they choose for their actions, while, at the same time, institutions themselves are shaped and constantly "reconstituted by human interaction" (Crawford & Ostrom, 1995, p. 582). In the context of proximity, Boschma (2005) refers to both informal institutions, i.e. a set of shared values, cultural norms and practices, as well as formal institutions, i.e. laws and

regulations that regulate human interaction and facilitate collective action. Institutions provide a framework for economic coordination and the exchange of knowledge. Accordingly, actors are institutionally proximate when they share the same set of norms and values and operate in the same constitutional or administrative system. These conditions create trust and lower transaction costs (Boschma, 2005).

In his delimitation between institutional and other forms of proximity, Boschma stays rather conceptual and acknowledges that they are mutually dependent (2005). For instance, he distinguishes between institutions at the macro-level ("norms and values of conduct", including cultural values) and those at the micro-level, "in which these norms and values are embodied in specific exchange relations" (Boschma, 2005, p. 67), attributing the latter to social and organisational proximity. This shows that a clear allocation of economic interactions and their effects to one or another form of proximity is only possible to a certain extent since they are always subject to institutional settings. The challenge of a sharp distinction between different forms of proximity is also reflected in the variety of operationalisations which have been used to apply the proximity framework in empirical contexts and which are described at the end of this section.

By providing the context in which other non-spatial proximity dimensions can evolve towards effective innovation, institutional proximity may act as an enabling factor (Boschma, 2005). Yet, it may also be potentially limiting due to the complex and interdependent character of institutional settings (Boschma, 2005). Changes in or decisions for a certain institutional design may have (unforeseen) consequences for the whole institutional setting and, thus, for the evolvement of social and economic interactions taking place within this setting (Hall & Taylor, 1996; Pierson, 1993). Accordingly, the more complex the institutional interplay, the more difficult and costly it becomes to reverse initial choices (Pierson, 1993). As a result, institutional developments tend to lock in certain paths and, thus, may hinder innovations that would require a different institutional design or fundamental changes in the existing institutional structures (Boschma, 2005; Pierson, 1993).

To achieve an optimal level of institutional proximity, Boschma (2005) recommends an equilibrium between institutional stability, openness and flexibility and a balance of power in the institutional environment through a regular change in the political sphere. As already indicated, institutional proximity is closely linked to other forms of proximity. For instance, trust-based social relations may compensate for a weak institutional environment and a lack of trust based on common institutions. In addition, a high degree of geographical proximity may be especially relevant for the evolvement of informal institutions, while formal institutions usually extend to larger administrative areas up to the nation state and beyond (Boschma, 2005).

Balland et al. (2015) describe the dynamic dimension of institutional proximity as institutionalisation, i.e. "the progressive integration of rules and values in actors' behaviour" (p. 913). Through

repeated collaborations, shared values, norms, and practices are enhanced and potentially codified in a broader institutional framework (Balland et al., 2015).

Social proximity. Decisions and interactions of actors are shaped by the limited information and knowledge available to them. Social proximity, i.e. socially embedded, trust-based relations between actors, may reduce uncertainty linked to these interactions and enhance interactive learning (Boschma, 2005). Through social embeddedness, social proximity reduces the risk of opportunism and facilitates the transfer of tacit knowledge as interactions are based on trust originating from friendship and shared experiences (Boschma, 2005).

In contrary to the original notion of embeddedness, Boschma argues that the innovative performance starts to decrease above a certain level of social embeddedness as social ties become so strong that they have negative effects on interactive learning (Boschma, 2005). For instance, a high level of loyalty or commitment in relations may lead actors to underestimate the risk of opportunistic behaviour or to limit interaction to established, closed structures, paying little attention to outside knowledge and expertise (lock-in effect). As a result, although social proximity is not per se necessary for collaboration, a balance between relational trust and openness to external stimuli and market-based relations helps to benefit from maximum innovative potential and avoid negative effects of either too little or too much proximity (Boschma, 2005).

Social proximity is not static but evolves over time. Over the course of a collaboration, social relations between actors may become increasingly embedded in a shared network (Balland et al., 2015). In this context, a decoupling of relations can take place, i.e. personal relations continue to exist autonomously without the context they were formed in originally (Balland et al., 2015). For example, former collaboration partners may become friends and maintain their friendship after the collaboration has ended. To adjust to the increasing embeddedness of relations, interactions with outside or socially distant actors should be extended (Balland et al., 2015).

Cognitive proximity. Cognitive proximity means actors share the same base of knowledge and expertise necessary for joint learning and mutual understanding (Boschma, 2005). In this sense, it is vital for collaboration success. Collaborative innovation is the outcome of learning processes combining distinct capacities and bodies of knowledge from heterogenous actors. Often, this involves tacit, localised knowledge which has been created in a cumulative process (Boschma, 2005). For an effective transfer of information, actors need the capacity to absorb and process it (Boschma, 2005). This absorptive capacity decreases with increasing cognitive distance, while, at the same time, the potential for interactive learning is enhanced with increasingly diverse sources of knowledge and expertise (Boschma, 2005). Boschma and Frenken (2010) refer to these differential effects of proximity as the proximity paradox. They suggest distinguishing between the effects that proximity has, as a driving factor, on the formation of networks and collaboration, and those it has on their innovative performance (Boschma & Frenken, 2010).

A minimum degree of similarity, i.e. a partly shared knowledge base and sufficient cognitive overlap for effective communication, is a prerequisite for collaborative innovation (Boschma, 2005). Otherwise, it is too difficult for actors to bridge their knowledge gap. Yet, too much cognitive proximity, i.e. highly similar knowledge structures, may impede innovation due to a lack of openness and sources of novelty, leading to a cognitive lock-in. Also, high cognitive proximity increases the risk of involuntary spillovers of knowledge and expertise. Therefore, a certain level of cognitive distance and access to diverse sources of information beyond a closed geographical cluster or knowledge network should be preserved to guarantee innovative performance (Boschma, 2005).

Cognitive proximity has a highly dynamic character (Balland et al., 2015). Over the course of a collaboration, the body of knowledge shared between collaborating actors increases as a result of interactive learning processes, leading to a growing mutual dependence (Balland et al., 2015)

Proximity in the agri-food context. AFNs have been studied from a proximity perspective especially in France and in French-speaking contexts as "agriculture of proximity" (e.g. Aubry & Kebir, 2013). Fewer studies on the application of the proximity framework, specifically as proposed by Boschma (2005), have been published in the English language, among them the ones by Dubois (2018), Gugerell and Penker (2020), and Gugerell et al. (2021).

In a case study on small-scale organic farms in Sweden, Dubois (2018) analysed the processes underlying the formation of producer-consumer relations by combining dimensions of temporary geographical, social, cognitive, institutional and organisational proximity with a distinction between face-to-face (e.g. farmers' markets, farm shops), proximate (e.g. multi-producer coalitions, supermarkets) and extended relations (e.g. online shops) based on Renting et al. (2003). Dubois found that producers tend to rely on multiple forms of market relations to reach out to consumers, mostly employing social proximity as a central relational mechanism. The author highlights the importance of meeting places for direct interactions between consumers and producers. These do not necessarily need to be permanent but may also be effective as temporary venues in creating proximity between actors through the generation of shared societal values, such as farmers' markets (Dubois, 2018).

Gugerell and Penker (2020) relied on a multi-level perspective to study the proximities in sustainability trajectories of different AFNs in Vienna. The authors focus on niche-regime interactions and distinguish between internal and external proximity. For operationalisation, they extend the notion of geographical proximity to access to resources and infrastructure as part of external geographical proximity. In other dimensions, the authors narrow down the analysis to specific factors, such as expectations for internal cognitive proximity. Contrary to the original notion by Boschma (2005), Gugerell and Penker assign learning to social proximity, and not to cognitive proximity. Also, they do not take into account the organisational dimension of proximity as such but include some aspects of it in the operationalisation of social and institutional proximity. Additionally, the strategic

orientation of AFNs, i.e. their relation to regime actors, and their potential development path between adapting to or transforming the dominant regime is assessed – aspects which could also be framed as external organisational proximity. The authors conclude that contextual proximities have a significant forming impact on the development of AFNs. A major challenge for food niches is trying to consolidate their position between maintaining full autonomy and avoiding a relation to the dominant system, aiming at nudging regime changes, or adapting to the regime. Gugerell and Penker (2020) stress the role of local authorities in raising the visibility of small-scale food innovations, promoting food literacy, and enabling the exchange between different actors on a local level.

In a quantitative cross-country analysis on the influence of proximities on the attractiveness of CSAs, Gugerell et al. (2021) apply a similar distinction between internal and external actors, structures and resources, but operationalise the proximity dimensions in a more comprehensive way than Gugerell and Penker (2020). For instance, cognitive proximity encompasses the internal sharing of ideas, competencies and expectations and the degree of interest and understanding of external actors for the AFNs in question. Gugerell et al. (2021) also include organisational proximity in their analysis, i.e. the connection among CSA members and with external actors in formal arrangements. Their results confirm that the substitutive and complementary nature of proximities make a clear distinction between different dimensions difficult. The clearest boundaries could be identified between internal and external proximity aspects. Internal social-cognitive proximities were determined to be most significant in enhancing CSA attractiveness through trust-building interactions and the sharing of knowledge. According to Gugerell et al. (2021), the autonomy of AFNs and their clear demarcation from the prevailing food regime form part of their attractiveness.

2.3 Summary and operationalisation

The empirical studies on proximities in the context of AFNs confirm the argument by proximity scholars that geographical proximity is not the main or only driver for innovation and collaboration (Balland et al., 2015; Boschma, 2005; Torre & Rallet, 2005). Instead, other proximity dimensions may compensate a lack of spatial closeness (Boschma, 2005). In general, a high degree of proximity in one dimension may be complemented by lower levels of proximity in other dimensions to stimulate collaborative learning and innovation. For instance, a high level of geographical proximity can facilitate the monitoring of collaboration partners in the case of missing trust-based relations (Boschma, 2005; Boschma & Frenken, 2010). To avoid lock-in situations and enable effective innovation, collaboration should take place within loosely coupled networks of actors with diverse backgrounds and complementary capabilities, but with a common base of knowledge (Boschma, 2005). This may be achieved through a mixture of social and market-based relations that reach beyond the spatial and relational boundaries of the collaboration and are built on a common

institutional foundation, leaving room for openness and flexibility to innovate while allowing for a certain degree of mutual control. As collaborations evolve over time, proximities are subject to changing contextual factors, such as the length and design of the collaboration or potential competition for the same resources (Balland et al., 2015). While an increasing cognitive and social proximity may make future collaborations more likely, the level of creativity might be reduced as knowledge bases are becoming more similar. Likewise, negative past experiences can also lead to more distance between actors (Balland et al., 2015).

In this thesis, the main focus lies on proximity as a driving factor for AFN formation, i.e. how collaboration and the associated relational processes and interactions are shaped by different forms of proximity, and less on the effect of proximity on innovative performance, i.e. how innovative the collaboration is in terms of its outputs (Boschma & Frenken, 2010). Therefore, proximity dimensions are operationalised for the application on AFNs, as shown in Table 1. The operationalisation is based on the proximity framework by Boschma (2005) and broadened based on further literature both on the proximity approach and its empirical application (chapter 2.2) as well as on AFNs and factors of agri-food collaboration in general (chapter 2.1).

Table 1 Operationalisation of proximity (own elaboration based on the literature review).

	Internal proximity	**External proximity**	
		AFN → society / dominant regime	*Society / dominant regime → AFN*
Geographical proximity	Spatial distance	Availability and accessibility of resources and infrastructure	Accessibility of AFN
Organisational proximity	Mechanisms of coordination and control, autonomy, decision-making structure	Embeddedness in the dominant food system	Openness and flexibility of dominant food system actors
Institutional proximity	Shared set of formal and informal institutions	Embeddedness in dominant formal and informal institutional settings	Institutional openness and flexibility; societal relevance
Social proximity	Social trust, shared experiences	Embeddedness in society	Social acceptance
Cognitive proximity	Mutual understanding, communication and knowledge exchange, shared ideas, and expectations	Shared ideas through communication and information sharing	Shared ideas through interest and understanding

Following Gugerell and Penker (2020) and Gugerell et al. (2021), this analysis differentiates between internal and external, i.e. contextual, aspects of proximity. While internal proximity addresses the interplay of actors, activities, and resources within an AFN, external proximity addresses the relation of the initiative towards the society and the dominant regime. Within external proximity, a further distinction is made regarding the direction of approximation, i.e. whether it originates from the AFN being studied towards the society or the dominant regime (first pillar of

external proximity), or vice versa, from society or the dominant regime towards the initiative (second pillar). Internal actors encompass all those directly involved in the collaboration. This may apply to consumers in so far they engage actively in the AFN, such as in CSAs. Generally, however, consumers are considered external actors. Additionally, the general local population and wider society as well as actors of the dominant food system and of state institutions constitute external actors.

Geographical proximity is extended in its external dimension beyond spatial distance to include physical components, i.e. resources such as farmland, and infrastructural aspects, i.e. accessibility, e.g. via public transport, similar to the operationalisation proposed by Gugerell and Penker (2020) and Gugerell et al. (2021).

Internal relational dimensions of proximity, i.e. organisational, institutional, social, and cognitive proximity, focus on the nature of relations between AFN participants and ways of joint coordination and learning. Organisational proximity entails internal mechanisms of coordination and control, including formal and informal agreements to allocate decision rights, and organised forms of interaction. The latter is necessary for communication (cognitive proximity) and facilitated through interpersonal trust (social proximity). Organisational proximity also takes into account the actors' willingness to take risks and their general openness towards collaboration as a precondition for its success. External organisational proximity refers to the embeddedness of the AFN and its individual actors in the dominant food system, for instance through market relations with external actors (suppliers, retailers), and to the system's openness towards the initiative.

Institutions play a role in each of the proximity dimensions by defining the context in which interactions take place. The proximity analysis focuses on the question whether they are shared between AFN participants as a foundation for collaboration. Externally, institutional proximity refers to the sharing of values, social norms, and practices with potential customers and the wider society, including perspectives on the role of consumers (informal institutions), as well as the AFN's embeddedness in broader political and administrative institutions and their openness towards nudges from the AFN (formal institutions). Boschma (2005) mentions trust as key dimensions of institutional and social proximity. Linking this notion of trust to the definition by Stern and Coleman (2015), institutional trust encompasses both dispositional and procedural forms of trust. Social trust as part of social proximity is similar to affinitive trust, yet with a greater emphasis on direct interpersonal relations and shared past experiences rather than (the assumption of) shared values. The latter is instead associated to institutional proximity.

Social trust and the type and quality of the relationships between the collaboration partners determine the degree of internal social proximity, while social acceptance addresses the actual acceptance of the initiative in question by the local population. This is, amongst others, influenced by

whether there is a general interest and understanding for the initiative (cognitive proximity) as well as by the general societal relevance of the AFN's key values and goals (institutional proximity).

Internal cognitive proximity is characterised by the actors' degree of mutual understanding, the quality of communication and knowledge exchange, and the sharing of ideas and expectations. External cognitive proximity refers to mechanisms of awareness-raising, e.g. through media attention and by setting the agenda on AFN-related topics in public discourse, enhancing communication and joint learning. The latter can be seen as an outcome of the interplay of different proximities. Joint learning is primarily based on cognitive processes aimed at establishing a common knowledge base by increasing knowledge and sharing information, but its quality and success depend on a diverse range of aspects linked to different proximities, such as the creation of shared experiences (social proximity) and an appropriate structure for enabling feedback (organisational proximity).

3 Methodology

To address the research questions introduced in section 1.2, this thesis applies a qualitative research approach taking a constructivist viewpoint.

3.1 Research design

A comparative case study design was chosen as it enables the in-depth analysis of a particular phenomenon within its context (Silverman, 2017). To explore the role of proximity for the formation of collaboration in a local agri-food context, two cases were identified as suitable. The research area was pre-defined in the context of a project on modes of co-operation and pooling for sustainable agri-food systems led by Leibniz Centre for Agricultural Landscape Research (ZALF).[1] Additionally, the case selection was based on their scope, their phase of establishment, and general comparability. For data collection, qualitative interviews were conducted. To ensure a close link between theory and empirical data, research took place in an iterative grounded theory-type approach (cf. Wagenaar, 2015), i.e. phases of literature reviewing and data collection were overlapping.

To inform the theoretical foundation of this thesis, Scopus and Google Scholar were used to source scientific papers. Once the research focus of this thesis was narrowed down on the initial phase of AFN formation, and the proximity framework by Boschma (2005) was set as theoretical frame, forward referencing was applied to identify applications in an agri-food context. Besides, the research was complemented by further relevant literature on proximity, as well as by publications focusing, amongst others, on agri-food related collaboration, AFNs, and social innovation, including backward referencing where relevant. At the beginning of the literature research, articles published both in English and in German were considered, yet, over the course of the research, the focus was laid on English literature.

3.2 Introduction of the cases

Two local agri-food initiatives in a district north of Freiburg im Breisgau in Southwest Germany were analysed as case studies. Being located in two different municipalities within the same district of Emmendingen, the cases share a similar contextual setting. The municipality of case A has approximately 4,000 inhabitants, the one of case B 11,000 (Landkreis Emmendingen, 2021). They are embedded in rather rural structures. The municipalities' location in the Rhine valley with mostly alluvial soils and a temperate oceanic climate provides favourable conditions for agricultural use.

[1] See www.kopos-projekt.de for more information.

The district is characterised mainly by comparatively small-scale agriculture with an average farm size of 18.7 ha (Statistisches Landesamt Baden-Württemberg, 2020). The vast majority of farms (92 %) practices conventional farming. 70 % of the farms are operated as secondary occupation. The district's utilised agricultural area is dominated by crop cultivation (45 %; mainly cereals) and permanent grassland (43 %) used mostly for dairy farming. Furthermore, specialised crops such as wine and fruits are grown on approximately 12 % of the area (Statistisches Landesamt Baden-Württemberg, 2020).

In both cases, the municipalities' mayors played a central role in enabling the initiatives in the first place. At the time of the interviews, the initiatives were in the initial phase of formation, i.e. preparing the implementation. They have a similar small scope in terms of (potential) participants. Following the mayors' accounts, in case A, four farmers, three distillers, a honey maker, a baker, and a walnut grower signalled their willingness to participate. In case B, a wine grower and actors related to the broader concept of the project, such as a general practitioner and potential volunteers, as well as local producers of non-food such as soap, agreed to participate. Several farmers showed interest yet did not confirm participation. An overview of the selected cases is provided in Table 2 (representing the situation as described by the mayors during the interviews). The focus of this study is on the intersection between the farmers as potential participants and the mayors as representatives of the municipalities and as enablers of the initiatives.

Table 2 Key characteristics of the selected cases (based on interview statements by the mayors).

	Focus	**Goals**	**Phase of establishment**
Case A	Regional shop with oil mill and coffee roastery (in connection with already existing café)	Inclusion, education, visibility of local food producers, transparency of the value chain	Preparation for implementation: • Collaboration with farmers is confirmed • Financing is secured • Structural preparation of the location is in process
Case B	Zero-waste shop with café and kitchen or processing space	Revitalisation of the town centre, neighbourhood support, education and knowledge transfer, promotion of sustainable nutrition, strengthening of regional employers	Preparation for implementation: • Collaboration with farmers is yet to be confirmed • Financing is yet to be confirmed • Plans for structural preparations of the location are available

Both initiatives build on multi-facetted concepts, each with a shop for local food products at its centre. Initiative A aims at having a limited assortment with special products from local producers, such as oil, bread, lentils, honey, distillates, and antipasti, and additionally with high quality coffee. In case B, a zero-waste shop with a broader range of fruits and vegetables as well as local non-food products and additional non-perishable foods from beyond the region is planned. Both initiatives

aim at strengthening or newly establishing local value chains and reconnecting local producers and consumers. This way, they seek to raise awareness on and enhance the appreciation of food and food production, and, in a broader sense, nudge a change in social practices. Thus, they can be conceptualised as social innovation and specifically as AFNs.

3.3 Data collection

Through qualitative semi-structured interviews data on the initiatives and their context were collected. In a first step, exploratory interviews were conducted with the mayors of both municipalities to gain a better understanding of their role in the initiatives and of the initial situation. Based on this, the research focus was refined and laid on the role of proximities in the establishment phase of AFN formation. In a second round of interviews, two to three producers who had agreed to participate or had been approached by the mayors to do so were interviewed for each initiative to assess their perspective on the initiative and their relations to other actors. The sample size was limited by the size of the initiatives and their early stage of development. Also, two producers who agreed to do an interview withdrew their decision later (one because of family issues, the other because of personal objections against the initiative).

Lastly, one interview was conducted with an external person employed by the district as a cross-district coordinator responsible for strengthening organic agriculture and local agricultural supply chains in the region of Freiburg. The interviewee did not have a direct link to the initiatives but was interviewed in order to gain a broader perspective on agricultural structures in the region of Freiburg im Breisgau and the role of the district in local agri-food initiatives.

An overview of the interviewees and the corresponding acronyms is provided in Table 3.

Table 3 Overview of the interviewees (m = mayor, p = producer, rc = regional coordinator).

Case	Acronym	Position	Role in resp. initiative
Case A	P1_A_m	Mayor	Enabler
Case A	P2_A_p	Farmer	Participant / supplier
Case A	P3_A_p	Farmer	Participant / supplier
Case A	P4_A_p	Farmer	Participant / supplier
Case B	P5_B_m	Mayor	Enabler
Case B	P6_B_p	Farmer	Participant / supplier
Case B	P7_B_p	Wine grower	Participant / supplier
External (district level)	P8_rc	Regional coordinator	None

The interviews took place in July 2021 (with the mayors), in October and November 2021 (with the producers), and in February 2022 (with the regional coordinator). They lasted between 29 and

72 minutes (mean = 47 minutes). Contact details of the mayors and the regional coordinator were provided by ZALF, the contact to the producers was established through the mayors.

The interviews were based on a pre-defined guideline, semi-structured around a set of open questions which were grouped into five categories according to the research focus and informed by the literature review. For each round of interviews, the guideline was slightly adjusted to account for the interviewees' role regarding the initiative. Neither the specific research questions nor the theoretical background of the study were mentioned to the interviewees to avoid a distortion of the data. The main goal of the interviews was to gain a deeper understanding of the role of proximities for the establishment of the initiatives. For this, the interviewees' perceptions of the initiative, their personal motivation for participation, and the relation between collaboration partners as well as to relevant external actors were assessed. Also, the link between the initiatives' and the interviewees' goals and values, organisational aspects of collaboration, and the initiatives' spatial embedding were evaluated. The producers' guideline is provided in Appendix A as example for the structure of the interview guidelines.

The semi-structured and open design of the interviews was chosen to create "conditions for surprise" (Wagenaar, 2015, p. 243), i.e. provide space for the respondents to develop their own narrative on the topic of the interview and set own emphases or point to new aspects which had not yet been considered in the research. When necessary, follow-up questions were asked for clarifications or examples.

With prior (informed) consent of the interviewees, the interviews were audio-recorded and then transcribed to facilitate the data analysis. During the course of transcription, the text was slightly adjusted to Standard German and word fillers such as repetitions of words were deleted to improve comprehensibility.

3.4 Data analysis

The aim of qualitative data analysis is to set the case-specific empirical data in relation to the theory, gain understanding, and derive potential generalisations from the material (Wagenaar, 2015). When interpreting the data, it is important to acknowledge the interdependent relation between researcher and interviewees which influences the data as well as their interpretation according to the researcher's own background. In this sense, reality – and science – are socially constructed (Silverman, 2017; Wagenaar, 2015). This means that, for instance, potential contradictions in the data may merely reflect the interviewees' diverse accounts of the world rather than a universal, factual "truth" (Silverman, 2017).

Taking into account these considerations, a qualitative content analysis was applied to systematically analyse the collected data. To do so, the interview transcripts were coded in the data analysis

software MAXQDA. Coding, in this context, refers to labelling a unit of data with an "essence-capturing" word or short phrase of descriptive or interpretive nature in relation to the theoretical foundation of the research (Saldaña, 2013, p. 3). For the present study, deductive codes based on the operationalisation presented in chapter 2.3 were combined with inductive coding. According to the operationalisation, the analysis was mainly structured along the internal and external axis of proximity. In the context of the examined initiatives, internal actors include the mayors as enablers of the initiatives (representing their municipalities as public actors), and the producers as participants or suppliers. Further internal actors that are not directly related to farming, such as a participating baker, are considered in so far as they were mentioned by the interviewees. State actors, potential future customers of the initiatives and further food system actors as well as the producers' suppliers and customers are regarded as external actors. The main focus during the analysis was on internal proximity and the first pillar of external proximity, since external actors, except for the regional manager, were not part of the investigation. Hence, the second pillar of external proximity is only addressed in terms of accounts by the regional coordinator and to the extent that interviewees referred to expected or experienced consumer behaviour or general societal or political dynamics.

The in-depth analysis of qualitative data usually involves various stages of coding (Saldaña, 2013; Wagenaar, 2015). For pre-coding, the deductively derived main categories were applied on one interview to structure it and test the categories. Additionally, inductive codes, including in-vivo codes (using the interviewees' articulation as proper codes), and preliminary thematic categories were generated from the material. The derived code system was then applied to further interviews for adjustments and refining. This way, coding rules were established in an iterative process and in close relation to the theory. When necessary, deductively informed codes were adjusted to fit to the material. In the process of refining the code system, in-vivo codes were merged with upper-level codes or transformed into more general codes to make them applicable in a broader way. In the second round of coding, the final code system (see appendix B) was applied to all interviews.

After each interview and during the process of transcription and coding, general observations and potential interpretations of the data were noted in analytic memos. Furthermore, memos were created for each code to document the coding process, including a description of the code and rules for application (Saldaña, 2013). In a final step of analysis, the coded material was visualised and compared on different levels within and between cases and actor groups (mayors, producers, external regional coordinator) in the light of the research focus.

4 Results

First of all, the conceptions of the mayors on their respective initiative are outlined to provide a more detailed context of the cases and associated challenges. Also, an overview of the interplay between collaboration partners and of the producers' backgrounds is given. Finally, the results are described in detail along the five dimensions of proximity and building on the mayors' conceptions as points of reference. Within the sub-sections of this chapter and according to the focus points that emerged during the interviews, a distinction is made between both cases and groups of actors as well as between internal and external dimension. As the results for social and cognitive proximity are closely interlinked, they are presented together in one section.

4.1 Starting point for the initiatives

The mayors' conceptions of the initiatives. The following descriptions of the initiatives are based on the accounts by the mayors.

Case A. In case A, the idea for the initiative originated in a multi-generational housing project with a kindergarten and a nursing home for people with disabilities newly built in the town centre in 2014. As free space was available in this building complex, an "inclusive" café was established, managed by volunteers and persons with disabilities. Given the success of the café and the interest of the local and regional population, it was decided to expand the project and to integrate a coffee roastery as well as shop with local foods and an oil press machine. This led to the initiative under study. Except for the coffee, all products to be sold in the shop are planned to be from local producers, including those used to produce oil (e.g. walnuts, sunflower seeds, rapeseed). The coffee roastery, the shop and the processing room with the oil mill are to be established within several containers located on the parking area in front of a supermarket of major German supermarket chain, close to the already existing café. At the time of the interview, the building application had been submitted and the purchase agreement with the investors of the area was about to be signed.

The shop is planned to be open from on Fridays and Saturdays. According to P1_A_m, the shop and the associated bike delivery service, will be run, as the already existing café, by volunteers and persons with disabilities, this way creating "external workshop jobs" for one to three persons with disabilities as". For P1_A_m, this inclusive aspect is central, i.e. integrating persons with disabilities into the society, enhancing social interaction and inclusion directly in the centre of the municipality.

Also, the initiative aims at increasing the visibility of local food production. P1_A_m argues that by providing a sales platform for high-quality products, local producers are offered the opportunity to market their products directly to the local population and to grow a more diverse range of crops than only maize and wheat which are characteristic of the region. This way, and by strengthening

bee keeping, biodiversity is enhanced as "side effect" (P1_A_m, Pos. 96). At the same time, the understanding and appreciation of food and food production is enhanced through more transparency and seminars on food and nutrition, and by carrying out projects with school children, such as growing and harvesting sunflowers and preparing the seeds for oil production.

Case B. In case B, several aspects led to the launch of the initiative. On the one hand, the topic of sustainable and local production and consumption of food had gained increasing importance among the local population. According to P5_B_m, this became visible in the strong response to offers such as the weekly farmers' markets, the local school's "vegetable academy", and several workshops on sustainable consumption and global justice. On the other hand, the municipality is lacking permanent meeting places as restaurants and food shops had closed. Therefore, when a sales location for agricultural machinery and farming inputs shut down, the municipality decided to buy the area and rebuild it as central meeting point. Plans include a zero-waste shop, mostly with local and regional food and non-food products, a small café with a kitchen space suitable for holding seminars and carrying out activities for processing and preservation of locally harvested products, and a space for a general practitioner to offer consultation hours. The upper levels of the buildings are planned to be used for apartments. At the time of the interview, an architectural competition for the design of the new town centre was about to start. Also, the financing of the construction and for the initial support of the shop had yet to be resolved. To bridge the time until the final opening of the location (planned for the end of 2023 or beginning of 2024), a provisional shop is to be established in the meantime. According to P5_B_m, the shop is to be opened five to six days a week. No clear statement was made with regard to who would run the shop.

The initiative aims at revitalising the municipal centre and reconnecting the local population by enhancing social interaction ("neighbourhood assistance"; P5_B_m, Pos. 50) and re-focusing on local production and consumption. For P5_B_m, the educational aspect of the initiative is most important, i.e. raising awareness for and appreciation of food production and relearning what used to be normal for older (rural) generations – growing and preserving their own food. By enabling joint experiences instead of solely theoretical knowledge, P5_B_m especially wishes to address children in cooperation with the local primary school and, this way, also reach their families.

In contrast to the already advanced preparations in case A as presented by P1_A_m, initiative B still faces major challenges. Besides the pending question of financing, the lack of local farmers growing vegetables and willing to participate is seen as main barrier by P5_B_m. Despite great interest and positive feedback from the three farmers approached, none of them agreed to participate. Following P5_B_m, the few local vegetable farmers were already operating at the limits of their capacities and, thus, not able to deliver products to the shop several times a week, partly also approaching retirement age without prospects of finding a farm successor. At a later point in the interview and slightly contradictory to the previous statement, P5_B_m also mentioned that some

farmers wanted to wait until the project was further established (Pos. 22). However, the interview with P7_B_p, who was among the farmers that had initially declined participation due to the lack of a farm successor, revealed that in the meantime the situation had changed and that the farmer was now interested in participating.

Overview of the interviewees' relations and contextual embeddedness. Both cases are embedded in certain contextual settings and influenced by an interplay of relations and exchange between different actors. Figure 1 illustrates the links between individual interviewees based on – mainly pre-existing – relations as well as case-related exchanges, including P8_rc as an external actor, and to other collaboration partners who were not interviewed, for instance the honey maker in case A and the members of the project group in case B. The relations as well the actors' embedding in external settings are analysed in further detail in the following sections.

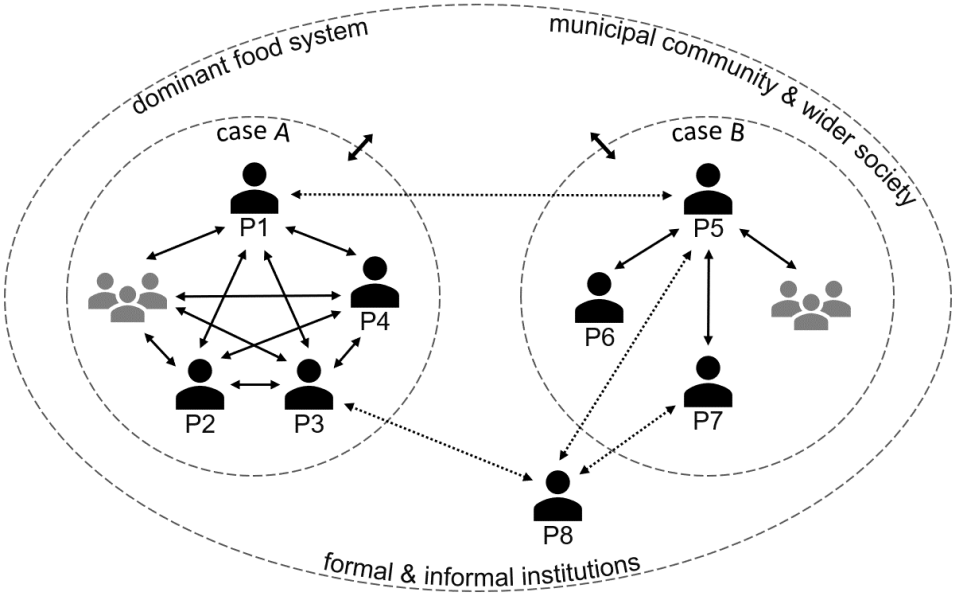

Figure 1 Relations between the interviewees (in black; incl. the external regional coordinator) and to other collaboration partners (in grey) within a broader contextual environment.

When interpreting the data, it is important to bear in mind that at the time of the interviews the initiatives had not yet reached the stage of implementation, i.e. the regional shops as the core of each initiative had not opened yet. Consequently, the interviewees based their statements and assessments of the initiatives on their experiences and knowledge acquired externally in non-case-related settings, i.e. they reflected about expectations and impressions gained so far, rather than on shared experiences.

The producers' backgrounds. To provide a basis for the further description of the proximity-related results, key background information on the interviewed producers is summarised in Table 4.

Table 4 Background information on the interviewed producers.

Interviewed producers	Current focus of production	Distribution via	Potential products for initiative
P2_A_p	Cereal cultivation, growing and processing of fruits (distillery)	Direct marketing (farm shop, online shop), restaurants, industrial food processors	Distillates, liquors
P3_A_p	Cultivation of cereals, rapeseed, sunflower	Industrial food processors	Lentils, oilseeds
P4_A_p	Cereal cultivation	Industrial food processors, mill	Wheat (flour, bread)
P6_B_p	Wine growing	Retail, restaurants, direct marketing (family-owned shop)	Wine
P7_B_p	Cultivation and partly processing of potatoes, vegetables, cereals, herbs; poultry farming for egg production	Direct marketing (farm shop, farmers' markets), restaurants	Potatoes, vegetables, processed food products

In case A, the interviewed producers cultivate mainly maize and wheat. One interviewee additionally grows rapeseed and sunflower, another one grows different kinds of fruits for the farm-owned production of distillates and liquors. In case B, one producer focuses on the organic cultivation of a diverse range of potatoes and vegetables, including partial processing, the other one produces grapes for wine production. Except for the wine producer, the interviewees run their farms as a main occupation, mostly with the help of family members. Only P4_A_p and P7_B_p have employees (P4_A_p: one seasonal worker, P7_B_p: two full-time and two part-time employees). The wine producer sells the produce to a winemaking cooperative and buys back the produced wine to sell it in a farm-owned shop and to retailers. The organic farmer sells the products in a farm shop and on several farmers' markets in the region. Producers in case A sell their produce mainly to the local processing industry. Additionally, P2_A_p runs a farm shop and an online shop, and P4_A_p sells part of the produce directly to a local mill. Table 4 also indicates the products the products the producers are considering selling via the initiatives. In the case of P4_A_p and P6_B_p, the products involve processing by third parties.

4.2 Geographical proximity

Internal proximity. In both cases, spatial proximity is given through a permanent co-location of the collaboration partners. The planned sites of both initiatives are not directly located where the offered food is produced, i.e. on the producers' farms. Yet, at least in case A, the shop will be located in close vicinity, i.e. a few minutes walking distance to the cultivation fields.

For P1_A_m, the location within the municipal area is a prerequisite for the participation in the initiative. Thus, all producers of case A are based close to the project site within a 2 km radius. At the same time, this requirement limits the number of potential participants. In case B, several producers growing cereals or wine, including P6_B_p, are located within the municipal area. Yet, the limited availability of farmers cultivating vegetables led P5_B_m to the decision to move beyond the municipal borders in the search for potential participants in the initiative, such as P7_B_p, who is located in a 10 km distance to the project site.

The interviewed producers had different perspectives on whether the participation in the initiatives should be limited to the municipality or a certain reduced area. They agreed that limiting the initiative locally would strengthen local producers. Yet, for instance P2_A_p did not take this as a precondition for participation and instead highlighted potential positive aspects of expanding the initiative's scope to a wider region and, this way, gaining more visibility and customers. For the producers of case B, the regional limitation to a maximum distance of 25 km was important especially because of the time effort.

External proximity. With regard to the spatial and physical context, the initiatives are located in an agriculturally diverse and fertile region rich of local initiatives and farm shops. The interviewees highlighted positive but also negative implications of this location. On the one hand, the beneficial natural conditions enable the production of a diverse range of food products necessary for local food shops (e.g. "Wir haben hier ja alles."; P4_A_p, Pos. 64). In both cases, local agri-food initiatives of neighbouring municipalities provided ideas and best practice examples for the implementation of the initiatives. On the other hand, a high density of already existing initiatives requires a certain degree of competitiveness and may impede the establishment of the planned initiatives: "Die Hofläden tauschen sich ja aus, […] das ist schon auf hohem Niveau hier. Also wenn man mit denen mithalten will, muss man es schon gut machen." (P4_A_p, Pos. 66). Nevertheless, P4_A_p argues that in the face of rising transport costs, local production of quality products such as bread wheat may provide a comparative advantage in comparison to market-dominating competitors from other regions of Europe and beyond. In both cases, the interviewees' relations to external food system actors (purchasers, processors) can be considered as regional (but not always as short), as for example their main industrial buyer was within a range of 25 km.

Considering case-specific structures, both initiatives are planned to be embedded in a broader multi-use context. In case A, this is achieved through the location on the parking area of a supermarket in direct neighbourhood to other facilities. Similarly, in case B, the local shop is planned to be embedded in a multi-functional town centre. These ways of localisation in relatively busy areas increase the attractiveness of the initiatives and facilitate the accessibility for potential customers, as people do not need to make an additional effort or detour to reach the location, but they ideally pass by in any case on their way home. In this context, the adequate design of opening hours is seen

as decisive. The interviewees consider the accessibility by public transport as low but also as not particularly relevant, as the majority of the rural population owns a car.

4.3 Organisational proximity

Internal proximity. In both cases, the level of interaction between collaboration partners was found to be rather low. To establish organisational proximity, joint coordination is necessary. Coordination is characterised by some form of regular interaction. Although in both cases there was an initial contact with the initiatives' potential participants to present the project ideas, no further case-related exchange took place on a structured basis. In case A, the initial contact consisted in a face-to-face kick-off meeting with all municipal farmers being present. Yet, further project-related follow-up discussions, also including other potential participants, were not initiated from P1_A_m until the time of the interviews with the producers. Instead, for instance, P4_A_p approached the baker and the miller of the municipality individually to discuss potential ways of participation and obtain their agreement to collaborate). In case B, potential participants were contacted individually by the mayor or a member of the project group who presented the initial project idea in a one to two hours conversation via phone. A joint meeting with all approached farmers did not take place. The interviewed participants of both cases stated that the initial contact was approximately a year or more ago at the time of the interviews, i.e. it probably took place in 2020. None of them could provide more specific information about the exact time.

Although not directly related to the initiative, previously existing shared spaces of relations and interactions were identified in case A. As all participating farmers are located within the municipal area, a major part of their farmland is leased from the municipality. For this reason, according to P1_A_m, there is a mutual dependence and constant exchange between farmers and mayor to discuss land leasing issues. Between P1_A_m and P3_A_p a closer professional relationship and a more intense exchange exist as P3_A_p is part of the municipal council and also more engaged in the coordination of the project. In case B, such a relationship and, thus, a reason for regular interaction, did not emerge from the interviews. Yet, on rare occasions, P6_B_p had been in contact with P5_B_m because of touristic activities such as wine tastings.

Whether the producers were willing to collaborate also depends on their general openness towards joint organisation and coordination, and their willingness to take risks. All interviewees indicated some general conditions as a basis for collaboration. Although the interviewed producers were generally open to participation in the initiatives, P2_A_p, P4_A_p and P6_B_p seemed to have adopted a wait-and-see attitude as they had certain reservations, especially regarding potential opportunistic behaviour of other collaboration partners:

> "Also wenn ich halt irgendwie das Gefühl habe, dass ich über den Tisch gezogen werde, oder so in dem Rahmen, dann funktioniert es nicht, wenn es nur einseitig wird. Also es muss schon ein wenig ein Geben und ein Nehmen sein, von beiden Seiten." (P2_A_p, Pos. 60)

Maintaining their independence and the possibility to opt out emerged as relevant aspects for them. P7_B_p seemed slightly more willing to engage actively but agreed with the other producers that a collaboration as equals and at eye level is important, including a fair and transparent decision making. The question of how and by whom the initiatives are coordinated was crucial in this regard. Considering the producers' limited time capacities, but also their self-assessed skills and capabilities (related to cognitive proximity), they principally welcomed a centralised coordination, as illustrated by P3_A_p:

> "Ich selber möchte keinen Hofladen oder sonst was. […] Ich muss ehrlich sagen: Ich bin kein Bäcker, ich bin kein Lebensmittelhändler, sondern ich bin Ackerbauer. Was ich kann, sind Pflanzen, […] da sehe ich einfach meine Motivation – top Ware zu produzieren […], und die Vermarktung oder den Verkauf – das sollen dann Profis machen. Und da finde ich halt die Plattform [Initiative A] als optimale Lösung." (P3_A_p, Pos. 14)

Coordination should be carried out by a neutral person or entity to assure a fair and equal treatment of all participants, as highlighted, for example, by P6_B_p: "Die Frage ist halt einfach nur: Wer ist der Kopf der ganzen Sache? Wer entscheidet welche Produkte dabei sind und wer entscheidet, wo welches Produkt steht?" (Pos. 26).

In general, most interviewees stated that they would build on existing structures in the starting phase of the initiative, i.e. make a small part of what they normally produce available for the initiative, and thus keep their risk low. At the time of the interviews, with one exception, producers were not willing to make any major prior concessions. As a minimum, costs should be covered, but overall, the participation should also be worthwhile in some way, i.e. potential benefits should outweigh additional costs and time invested.

A different position was taken by P3_A_p who showed a high commitment, calling the initiative a "Herzensangelegenheit", and willing to engage and give priority to the initiative without immediate prospect of recovering costs or even making profit:

> "Ich denke, wenn jeder, der mitmacht, sich nicht…, sein Ego nicht voranstellt, und einfach das macht, was das Beste ist – dann hat das Ding Erfolg. Und wenn einer dabei ist, der meint, er kann machen, wie er möchte, Gewinne erzielen oder nimmt nur das Gute mit, und das andere trägt er nicht, dann wird es nicht funktionieren. (P3_A_p, Pos. 28)

P3_A_p saw the initiative as opportunity for diversifying his production and building up a second pillar of business, i.e. spreading his risks. In contrast to the other producers, P3_A_p was willing to take some risks by growing different crops exclusively for the initiative, such as lentils and sunflowers. Although in the first year of production (2021), lentil cultivation did not generate satisfactory yields, P3_A_p was optimistic and argued that agriculture is always about assessing potential trade-offs from a long-term perspective:

> "Letztes Jahr war es so, dass wir eine gute Weizenernte hatten, eine gute Maisernte, gute Rapserträge und gute Sonnenblumen, und dann gibt es einen Hektarwert, und bei den drei Hektar Linse stehen dieses Jahr bisher nur Kosten, keine Erträge. Aber ich finde das ist mehr das Spannende, weil du musst auch damit umgehen können." (P3_A_p, Pos. 14)

According to P3_A_p, lentils hardly require any inputs and, therefore, the costs mentioned were mainly the opportunity costs of forgone income, while at the same time the cultivation of lentils also created benefits in terms of positive impacts on soil quality.

Although the implementation of the initiatives, i.e. the opening of the shops as central part of each initiative, had not yet been started at the time of the interviews, the interviewees made some general statements on the structure of the collaboration, responsibilities, and coordination mechanisms, which are outlined in the following structured by cases.

Case A. All interviewees of case A agreed that the main responsibility for the coordination of actors and activities was with the municipality and the mayor as its representative. This is also reflected in the legal form in which the cooperation is to take place – a company with limited liability with the mayor as voluntary director and the municipality as majority shareholder ("Ja, das Ganze ist die Gemeinde. Wenn wir es nicht machen würden, würde es keiner machen."; P1_A_m, Pos. 46). For P2_A_p and P4_A_p this also implies that the mayor has the power of decision making, i.e. P1_A_m decides on how to design the project, and the farmers can decide whether to participate or not.

Neither the mayor nor the farmers seem to favour entering in formal arrangements as basis for collaboration. Instead, they imagine it to take place in a relatively unbureaucratic and straightforward way. On the one hand, P1_A_m argues that the farmers would not accept any obligations. On the other hand, e.g. P2_A_p assumes the same from P1_A_m, i.e. that the latter will not take the risk of setting up a supply contract as this would mean that a fixed quantity has to be sold in a specific time, which may be difficult at the beginning. Rather, individual orders seem the most appropriate solution to start with.

Nevertheless, one rather clear condition for participation was formulated on the part of P1_A_m: Farmers would have to pay a fee of 15-30 % of the selling price. This seemed especially critical for P2_A_p who spoke of a price reduction of 20 % (purchase vs. selling price) and stressed several times during the interview that the price would ultimately be decisive for the question of whether or not to participate ("Am Ende entscheidet halt der Preis, wie bei allem eigentlich."; P2_A_p, Pos. 40).

Following P1_A_m, the fee is compensated by the provision of the sales platform. Hence, for the participating farmers, the added value of the collaboration is their enhanced visibility. P1_A_m argues that this is crucial in order to convince farmers to collaborate. At the same time, P1_A_m acknowledges that the participating producers would want to avoid taking risks or making a high investment, i.e. they might not rearrange their whole production according to the initiative. Instead,

they should start in small steps and with a small product range and then gradually raise their production according to the demand:

> "Die müssen sehen, dass das für sie einen Mehrwert hat. […] Es kommt gar nicht darauf an, ob das nachher 100 Prozent sind – das werden nicht 100 Prozent, sondern es wird vielleicht am Anfang nur ein Prozent des Betriebes sein. Aber dieses eine Prozent hat wertmäßig unter Umständen viel mehr Außenwirkung als die 99 Prozent, bei denen sonst gar keiner weiß, was da ein Landwirt macht. Das ist auch eine Frage der Sichtbarkeit – Sichtbarkeit der eigenen Arbeit, Sichtbarkeit der eigenen Qualität in der Erzeugung. […] Von ihrem Acker bis letztendlich zum Kunden, dass man das entsprechend hier abbilden kann. Das ist das, was die Landwirte als Mehrwert haben. Die machen das ja nicht aus irgendwelchen altruistischen Motiven." (P1_A_m, Pos. 72, 92)

To enhance visibility, a brand name and a logo were developed for initiative A. This way, products sold in the shop will have a uniform brand identity, yet with the producer's name to indicate the origin and to guarantee that they remain the distributors ("Inverkehrbringer"; P1_A_m, Pos. 60) of their products. The usage of the logo is not linked to any conditions except that the farmers are located within the municipality – which is given as P1_A_m only approached farmers within the municipal area.

Case B. Similar to initiative A, in case B, the municipality and specifically the mayor have the main responsibility for the coordination of the initiative. Additionally, a project group consisting of local volunteers was founded for pushing forward the initiative. Following P5_B_m, the future coordination of the initiative will be with the project group and eventually with a cooperative yet to be founded. Farmers should supply the zero-waste shop according to orders as it would be the case with normal retailers. Yet, according to P5_B_m, this relation should be based on a cooperation contract. For the interviewed producers who had been approached to participate in this initiative, neither the allocation of responsibilities, nor the form of collaboration as suppliers were particularly clear. The major issue emerging in the interviews with both producers was the question on how the management of the zero-waste shop would be organised and how time consuming a potential participation would be, for instance because of an obligatory take-over of shifts. This lack of knowledge, in turn, effected the producers' willingness to collaborate. Consequently, as both producers have rather limited resources in terms of time and personnel, they did not seem able or willing to make clear commitments regarding their participation and potential contribution in the initiative.

Producers in case B did not consider the legal form of the initiative to be relevant and preferred the paperwork to be as limited as possible. Yet, they showed interest in some form of agreement defining clear rules for collaboration and a certain commitment by all actors demonstrating their willingness to work together and to contribute to the initiative:

> "…, dass man nicht aufbaut und dann ist man plötzlich weg, wenn dann jemand aus der Nähe merkt 'Ah, das läuft ja gut, da mache ich auch mit' oder so. Ich meine, es muss schon eine klare Regelung geben. Für beide Seiten denke ich." (P7_B_p, Pos. 92).

On the part of P5_B_m, no specific rules or conditions for participation, such as a certain sales fee, were defined.

External proximity. In both cases, the local shops act as direct intermediaries between producers and consumers by establishing proximate relations. Especially for those producers of case A supplying a major part of their production to a regional industrial processor, the initiatives provide the opportunity to play a more active role in the design of (short) value chains. Yet, it became clear that these market relations to dominant food players continued to be their main source of income and that they were not interested in cutting these ties.

In case A, relations to dominant food system actors exist as the local shop plans to make use of a supermarket's infrastructure. The local shop can benefit from the immediate co-location with the supermarket as people may combine their normal grocery shopping with a visit to the shop without the need of any additional effort. This way, the initiative may reach "average" buyers more easily than would be the case with a decentrally located farm shop. The initiative's openness towards the mainstream is not one-sided but reflected by the supermarket. According to P1_A_m, the supermarket does not see the farm shop as competition. However, P2_A_p explained that he had been approached by this supermarket as a potential supplier. As this happened after the mayor's request, and considering the local character of the initiative "worthy of support", P2_A_p was willing to stick to the initiative provided that the conditions for collaboration, specifically the price setting, were acceptable ("Macht ja eigentlich Sinn, dass man es dahin verkauft, wo es günstiger ist, oder wo man mehr kriegt."; Pos. 38).

In case B, despite the central localisation of the initiative within the municipality, no direct embeddedness in dominant food system structures was given. On the part of P5_B_m, only relations to other cooperatives as potential vegetable suppliers and for providing best practice examples on how to organise a zero-waste shop were considered, i.e. placing the focus on alternative food actors. Generally, among the producers more scepticism existed towards the mainstream food system, probably due to their own rather small-scale background. Also, as the scope was not yet as clear as in case A, uncertainties and reservations regarding the involvement of other than local small-scale actors were mentioned during the interviews.

4.4 Institutional proximity

All interviewees share a set of formal and informal institutions which indirectly shape their approach towards the initiatives.

Informal institutions. Broadly, all interviewees were socialised in Germany. Thus, it can be assumed that they share a basic set of practices and norms of behaviour. With focus on the initiatives under study, the (potential) participants also partly share agriculture-related values and practices.

At the same these internally shared informal institutions are the basis for their relation towards society (external proximity) and, more specifically, towards the future customers of the regional shops.

Appreciation of food and food production. All respondents have in common that they show a high appreciation of food and food production. Some of them recalled how they started to work on their parents' farms and realising for the first time how much work food production actually entails. In general, interviewees share the believe that there is a significant lack of appreciation of this work and the associated quality of the product in society. Several producers specifically stated that they feel farmers are not being treated fairly. For instance, providing the example of a whole pig he bought in a supermarket for 1.99 EUR per kg, P3_A_p states: "Die Gesellschaft sagt: Das ist Ramsch-Fleisch. Ich sage: Das war ein hochwertiges Produkt." (Pos. 68). P4_A_p criticised that full shelves are taken for granted:

> "Wir sind alle gewohnt, dass wir immer volle Regale haben und das immer noch zu einem sehr günstigen Preis. Und dann wird das oft vergessen, nicht, [dass hinter jedem Produkt eine Produktion steht]. Und, klar, wir kriegen natürlich als Landwirte auch oft nur immer irgendwie die Negativ-Schlagzeile auf uns zukommen." (P4_A_p, Pos. 22)

Yet, the interviewees agreed that the restrictions and supply chain disruptions linked to the covid-19 pandemic had impacted the image of local agriculture positively leading to a reorientation towards regional food and a higher appreciation of local production and homemade products:

> "Corona hat das vielleicht auch ein wenig gefördert, dass man sich auch mal wieder einmal auf die Sache besinnt, was früher schon mal da war. Dass man früher ein paar Apfelbäume hatte, vom Opa oder von der Oma, und dann erinnert man sich dran: „Ja, da gibt es ja vielleicht noch was und da könnten wir ja noch Äpfel aufheben, die man über den Winter essen kann". Oder man kann Marmelade machen oder Apfelsaft oder wie auch immer. " (P2_A_p, Pos. 70)

Regional production and consumption. All interviewees are convinced of the positive impacts of regional agriculture and the need to strengthen it. Yet, this positive valuation of the terms "regional" and "local" is based on slightly different reasons. For some interviewees, local value chains are preferrable because they increase the visibility of local production and create more transparency regarding the origin of food. Through local – potentially small-scale and more "traditional" – value creation, products are associated with a higher quality. For others, the small-scale character is a central requirement in the design of "good" and high-quality local supply chains. P1_A_m argues that these aspects, and the opportunity for consumers to connect to local producers, justify a higher price for local products. For most interviewees, regional agricultural production and consumption is also directly linked to more sustainability. In this context, P5_B_m mainly draws on the argument of reduced food miles, i.e. lower emissions from transport. For P7_B_p, a circular agricultural system and the regional and seasonal production and consumption of food is at the core of their farm's philosophy. This means, for instance, that they also refrain from buying additional products to complete the assortment they offer in their shop and on the farmers' markets: "Man kann nicht

Regionalität und Saisonalität einfach befürworten und selber dazu kaufen, und Broccoli im Winter verkaufen, wo es keinen gibt." (P7_B_p, Pos. 6). More specific aspects of circular production and consumption are mentioned by P3_A_p, arguing that package material should be designed in a ecologically (but also financially) sustainable way ("Wenn ich was in Umlauf bringe, muss es einfach wieder in die Umwelt zurückgeführt werden, ohne dass es mir im Körper schadet oder der Umwelt schadet."; P3_A_p, Pos. 60), and expressing the wish to contribute to the future-oriented societal shift towards a more plant-based diet by growing lentils.

These diverse conceptions of local and regional agriculture are confirmed by P8_rc. In contrast to more controversial topics such as organic agriculture, according to P8_rc, regional agriculture is the "lowest common denominator" (Pos. 63) among farmers the region Freiburg am Breisgau, viewing "regional" to be synonymous with "good" and high quality. P8_rc points out that although regional agriculture is not automatically sustainable, many conventional farmers show a high degree of commitment towards alternative sustainable farming practices. This confirmed the accounts by P2_A_p stating that the cultivation of orchard meadows without pesticides is self-evident for him and, thus, he does not see the need to communicate this to his customers nor do they show interest in this, but rather in the quality of the products.

Responsibility of agriculture towards society. The interviewed producers recognise that they have a certain responsibility towards society. For most, this implies the responsible management of the land provided by the municipality and the local population based on good agricultural practices, as explained by P4_A_p:

> "Ich sage mal, ein Landwirt hat ja hier in der Gemeinde auch Verantwortung. Wir haben ja auch relativ viel Fläche von Leuten aus dem Ort. Man ist täglich draußen, ja, in der Gemeinde unterwegs. […] Wir sind uns da schon bewusst, […] dass wir nicht anonym sind." (P4_A_p, Pos. 26)

Another focus is on social responsibility and the engagement in the municipal community (P3_A_p, P7_B_p), as well as on marketing the region to visitors and making it more attractive for tourists (P6_B_p).

Formal institutions. As all interviewees are based within the same German district, interviewees share the same general political and legal framework ranging from district to national and EU level. In case A, institutional proximity is even higher since the interviewees are situated within the same municipality.

Both mayors acknowledged the important role of the municipality in enabling the successful implementation of the initiatives and in guaranteeing a certain degree of safety. Also, for P1_A_m, pushing forward the initiative means meeting the municipality's obligation of providing public services. The municipal support generates a certain degree of trust among the interviewed producers. Most of them were convinced that the fact that the mayors assumed personal responsibility for the initiatives would lower the risk of participation and open up opportunities which they would

otherwise not have access to when initiating a farmers-only collaboration, especially with regard to financing. From the perspective of P8_rc, mayors represent important intersections between local communities and the district which is responsible for the administration of funds under support programmes on federal state, national, and EU level, and for providing information and agricultural advisory services.

Although all interviewees interact within the same formal institutional setting, their relations to these institutions differ. Among some of the producers, a considerable emotional distance and aversion towards the political system and the current design of agricultural policy became apparent in the interviews. A major point of criticism was the – from their point of view – deliberate creation of dependencies through subsidies, as farmers are forced to adjust their production to current regulations to maintain competitiveness, as described by P7_B_p:

> "Vorneweg glaubt man ja, da wird man unterstützt und mit Subventionen und was weiß ich, und mit dem und jenem. Dann machen sie einen abhängig, setzen einen unter Druck. Um mit dem unter-Druck-Setzen schaffen sie nichts, und dann muss man aufhören. […] Die Politik macht uns abhängig." (P7_B_p, Pos. 16-18)

Particularly P3_A_p and P7_B_p expressed a deep dissatisfaction with the framework conditions of agricultural policies which, to their mind, reflect the general lack of knowledge and appreciation of agricultural production and the farmers' profession. P7_B_p argues that especially if trying to establish a diverse production with closed cycles, farmers face a high amount of inadequate documentation requirements in addition to a per se higher work effort typically linked to a diversified production (in comparison to the sole cultivation of one or two different crops). The farmer's dissatisfaction with the institutional setting, i.e. a low institutional proximity, stands in contrast to a comparatively higher social proximity to those controlling the compliance with these measures ("Den haben wir gekannt. Das sind ja ganz normale Menschen aus unserer Region"; P7_B_p, Pos. 142).

Both P3_A_p and P7_B_p argue that the current legal framework hinders civic engagement towards new modes of production and consumption, such as establishing a local hemp value chain in case A or the joint processing of food in case B – two examples whose implementation can be impeded by the current food legislation.

4.5 Social and cognitive proximity

Internal social proximity. Although producers in both cases generally know the responsible mayor, social proximity between collaboration partners is rather low. In case A, some degree of social proximity is given because the interviewees all knew and referred to each other and to further collaboration partners in the interviewees. P4_A_p particularly emphasised the importance of the mayor knowing the local producer and how they use the municipality's land. It became clear that on a professional level producers share lose relations through which they exchange their knowledge

on the initiatives individually. This exchange usually takes place informally when farmers meet or call each other to speak about land leasing or other agriculture-related issues. In this context, P3_A_p proved to be an important linking point between the mayor and the producers because of his active role in the initiative and his engagement in the municipal council. These activities created a close professional relationship between P1_A_m and P3_A_p from which the other farmers benefitted in terms of information. Still, for instance P2_A_p stressed that what he knew was only based on second-hand information, indicating that a closer exchange with P1_A_m would be preferred. In case B, social proximity was even lower. P5_B_m knew both interviewed producers prior to the start of the initiative, yet he stated that this had not been the case with further farmers and other actors that were approached to participate in the initiative. Instead, some of them had merely been recommended to P5_B_m. The interviewed producers did not know each other at the time of the interview, nor did they know other potential participants personally or simply who else might participate.

All in all, the interviewees barely had shared experiences that were created within the framework of the initiatives and that contributed to the creation of social trust. Yet, some interviewees of case A could build on experiences shared within other contexts not related to the initiative, like the joint discussions on the use of the municipal land. Again, between P1_A_m and P3_A_p, comparatively more joint experiences became visible as both of them are members of the municipal council and in closer exchange regarding the initiative. The general connections between actors of both cases are depicted in Figure 1 with arrows indicating whether they know each other and have had a minimum degree of relations or exchange.

For some of the interviewed producers, having known the mayor prior to the initiatives was of high relevance. Yet, the aspect of neutrality was the producers' most important requirement for the person taking the lead in coordination, i.e. the coordinator should ensure a balance of interests, ideally based on transparent rules and mechanisms of control. Thus, the producers appreciated that the initiatives were primarily facilitated by the mayors and not, for instance, by a fellow farmer. Also, this way, a greater diversity of collaboration partners was achieved, combining different bodies of knowledge and experiences necessary to implement such multi-facetted initiatives.

All interviewed producers stated that they would not make their decision whether to participate in the initiative dependent on who else participates, i.e. whether other producers they are close to join as well. However, they generally viewed the participation of colleagues positively acknowledging that such a project only works if a sufficient number of producers is willing to engage. Besides, for instance for P4_A_p, the participation of the local miller and the municipality's baker is crucial, since otherwise he could not show the complete value chain from the cultivation of wheat to flour and to the finished bread. For P6_B_p the potential participation of other wine growers represented an opportunity to reconnect among each other despite being in competition due to their profession.

Internal cognitive proximity. Based on a common set of values, all interviewees share an understanding of the relevance of regional agriculture and food production. Thus, the producers generally appreciate the idea of establishing a local agri-food initiative and see no major disadvantages. Although they do not expect financial benefits, they agree with P1_A_m in that – given that the initiatives are successfully implemented – they may provide considerable added value in terms of increased visibility, amongst others.

Still, the interviews revealed a rather low cognitive proximity, i.e. a considerable lack of knowledge, between mayors and producers except for P3_A_p. As indicated in section 4.3, in both cases regular meetings to exchange information and align ideas to get on the same page did not take place. Occasionally, both municipalities relied on regional newspapers or press statements to distribute information on the initiatives. However, according to the producers, a long time had passed since this official form of communication was used for communication, and since the initial contact had taken place. Thus, except for P3_A_p, the interviewed producers had rather vague memories of the communicated information as a basis for their assessment of the initiatives. The interview with P3_A_p showed that he participated directly in the design of the initiative and therefore had a clear idea of it.

Although P8_rc was not involved in neither of the initiatives, it became apparent that she provided information and ideas that contributed to the specification of both concepts. In case A, P8_rc was contacted by P3_A_p for information on funding opportunities, which eventually led to the application to participate as a pilot project in the research by ZALF. In case B, a relatively close professional relation existed between P5_A_m and P8_rc as they met regularly (several times a month) in the context of different committees. According to P8_rc, she proposed the initial design of initiative B as a food hub which was later adjusted by P5_A_m as a zero-waste shop.

According to P1_A_m, communication with the producers in case A takes place "the short way". The first information on the initiative were provided in several local newspapers, followed by the initial conversation with the farmers which – following P1_A_m – was concluded with a shared agreement to tackle this initiative together. From the perspective of P2_A_p and P4_A_p, such a mutual understanding did exist only to a certain extent, insofar they had a rough idea of the mayor's vision and knew who else would probably participate in the initiative. Yet, they both voiced doubts and open questions regarding the actual implementation of the local shop. This produced uncertainty and distance towards the initiatives. P2_A_p specifically stated that more communication would be desirable: "Ich weiß nicht, ob es überhaupt noch kommt, ob es nicht mehr kommt, keine Ahnung. Man liest auch im Gemeindeblatt nichts mehr darüber, also keine Ahnung." (P2_A_p, Pos. 50). P2_A_p argued that information on the progress of the initiative should be shared to keep the farmers informed, whether or not preparations were proceeding. Generally, it became apparent

that the exchange of information was higher and took place more frequently among the interviewed producers than with P5_B_m.

In case A, the question of price determination most prominently displayed diverging opinions of the interviewees and a general lack of shared knowledge. Interviewees disagreed both on the question whether prices could be higher incorporating the price discount asked for by P1_A_m as well as whether higher prices would be accepted by consumers, i.e. whether a willingness to pay more was given. Considering the current inflation and the low price elasticity of bread and other staple products to be sold via the initiative, for P4_A_p saw higher prices as problematic and was sceptical whether cost structures and the general economic viability had been assessed carefully:

> "Also jeder, der irgendein Geschäft hat… Die Kosten muss man halt im Blick haben, gerade mit Investitionen. Ich meine, das wissen wir ja auch als Betrieb, das muss man ja schon ein bisschen planen, nicht. Aber ich denke, das ist jetzt nicht meine Aufgabe." (P4_A_p, Pos. 52)

Both P2_A_p and P4_A_p had the understanding that the inclusion of persons with disabilities (which they generally appreciated) might increase the costs of operating the shop and that this was the mayor's main reason for higher prices. P3_A_p, however, believed that the added value of the products would be decisive and that consumers would be willing to pay more for this.

In case B, at the time of the interviews, neither of the interviewed producers were aware that the local shop should be designed as zero-waste shop or that a provisional shop was planned to bridge the time until the constructions were completed. From the initial conservation with P5_B_m, both producers recalled that some form of voluntary work was involved in the initiative. P7_B_p could not provide more details on the initiative and instead projected her own ideas of how to design such an initiative during the interview. P6_B_p recalled that the establishment of a cooperative was planned. Both producers stated that they had not heard back from P5_B_m after the initial contact ("Also ich habe jetzt schon nichts mehr gehört, also außer dem ursprünglichen Telefonat, aber das ist jetzt bestimmt schon wieder eineinhalb, zwei Jahre her."; P6_B_p, Pos. 22). For P7_B_p, it was only during the interview that the interviewee started to think again about the initiative and a potential participation: "…weil ich auch gar nichts mehr gehört habe, ich habe dann gar nicht gewusst – läuft das noch oder läuft es nicht? Und jetzt müssen wir schauen, wie sich das ergibt." (P7_B_p, Pos. 38). Like in case A, the little information that the interviewees had obtained after their contact with mayor were from the local newspaper.

Generally, the lack of knowledge and a mutual knowledge base was even more profound in case B than in case A. Open questions regarding the organisation of the future collaboration were summarised by P6_B_p:

> "Ich wüsste jetzt nicht wer es dann führt, ob das Angestellten sind, die von der Stadt bezahlt werden, ob sich der Dorfladen dann selbst trägt, ob es durch Ehrenamtliche getätigt wird, ob das durch die, die ihre Produkte ausstellen, in einer Gemeinschaft getätigt wird. Da fehlt mir das Wissen, was da gerade im Gespräch ist." (P6_B_p, Pos. 16)

As a result, both producers interviewed for case B did not seem able or willing to make clear statements regarding their participation and potential contribution in the initiative, especially as they both had rather limited resources in terms of time and personnel. Both producers agreed in the way that additional activities related to shop management such as stocking shelves or taking over a shift were not an option for them. Instead, P6_B_p considered a contribution in terms of product-related activities such as wine tasting or a payment, for example, through a monthly rent or by conceding a certain percentage of the sales price, as feasible.

(Shared) conceptions of the initiatives. The interviews revealed that the producers each have their own understanding of the initiatives differing in some respects from those of the mayors, mainly because the mayors' initial presentations of the project concepts were long ago. As a result, most producers adjusted what they remembered of the mayors' concepts based on their own background, values, and interests. An overview of the key goals and expected outcomes mentioned by the mayors and the producers in relation to the initiatives, and partially shared among them, is provided in Table 5. Due to the similar focus of both initiatives, and, thus, overlapping goals between both cases, a distinction is only made at the level of individual interviewees.

Table 5 Goals and expected outcomes of both initiatives shared among mayors and producers.

Goals and expected outcomes	Addressed by	Explanation
Increasing the visibility of local food production	P1_A_m P2_A_p P3_A_p P4_A_p P5_B_m P6_B_p	The shops provide a sales platform for local producers and, thus, the opportunity to reconnect to the local community. The small-scale format of the initiatives enables producers to specialise or direct their production towards higher quality usually not rewarded by industrial processors, and to communicate this to the consumers in a transparent and comprehensive way. Eventually, the initiatives strengthen local (small-scale) producers.
Raising awareness	P1_A_m P3_A_p P4_A_p P5_B_m P7_B_p	With regard to the alleged lack of knowledge on food and food production, producers stressed their wish to raise awareness and understanding among consumers. This way, they aim at increasing the appreciation of food production and the recognition of the farmers' work, eventually leading to an improved image of agriculture (e.g. "Dass man einfach auch wieder ein wenig Anerkennung für das Produkt und für die Arbeit kriegt"; P3_A_p, Pos. 40). Besides the provision of background information on the products, this is to be achieved through educational measures.
Revitalising rural areas	P1_A_m P5_B_m P6_B_p P7_B_p	Interviewees aim at enhancing social interaction of the municipal community and the reconnection of consumers and producers by creating a meeting point, and, at the same time, securing local food supply. This will improve the attractivity of the region for locals and tourists.
Promoting sustainable consumption	P3_A_p P5_B_m P7_B_p	Fewer interviewees shared the goal of a transition towards environmentally friendly and circular modes of production and consumption.
Establishing new value chains	P1_A_m P3_A_p	A special focus on establishing new local value chains was laid by P1_A_m and P3_A_p on locally produced oil and lentils as sustainable products with scaling potential. P3_A_p sees the local shop as opportunity to market these new products: "Eigentlich ist

		Landwirtschaft unendlich, aber du musst einfach einen Markt dafür haben, und den suchen wir momentan mit dem Projekt." (Pos. 40).
Others	P1_A_m P2_A_p	Further aspects that were stressed as focus points by P1_A_m but were not directly shared with others were social inclusion, i.e. creating jobs for persons with disabilities, enhancing biodiversity, support for projects in (coffee) producers' region. For P2_A_p an important advantage was that for consumers a certain degree of anonymity is provided in comparison to direct marketing, this way avoiding social stigmatisation because of alcohol consumption.

External social and cognitive proximity. Despite their heterogenous backgrounds, it becomes clear that the interviewees do partly share general ideas and expectations on the initiative. Most of the goals are aimed towards the society, meaning that the internally shared ideas also shape the initiative's external proximity. Regarding the initiatives' future embeddedness in society, both initiatives provide the opportunity for producers to expand their customer base and directly connect to the local community, achieving high social proximity, instead of selling all their produce to processors. Yet, products will likely not be sold directly by the producers as the shop will serve as intermediary point, i.e. relations are proximate because producers act as direct suppliers to the local shops. For those producers involved in direct marketing, the initiatives thus imply a certain degree of distancing. As P2_A_p pointed out, this also enables a greater flexibility for consumers as no direct communication is necessary with the producers every time they like to buy a product. At the same time, they get to know where the product is from and how to reach its producer. Through the potential inclusion of activities directly offered by the producers, a face-to-face component is also involved. The local shops and associated activities can offer a space to experience and strengthen values shared among producers and consumers.

The potential of these immediate points of distribution and interaction is also confirmed by the producers engaged in direct marketing or similar forms of distributing their products directly to consumers. Following their experiences, the shorter and intermediate the value chain, the closer the bond, i.e. proximity, between producers and consumers. Considering this, the interviewees are convinced that the re-localisation of value chains is key for enhancing the appreciation of food, as described for instance by P7_B_p:

> "Was ich dann immer höre, ja, die ganze Weltbevölkerung kann sich nicht ernähren mit der Nahrung, wenn man das so [bio und regional] handhabt – ich bin hundertprozentig überzeugt: es geht, weil es ist dann teurer – also es darf auch etwas kosten, finde ich. Ich weiß es am eigenen Beispiel: Man braucht weniger, man kauft weniger ein. Man nimmt das, was man hat, auch wirklich wertschätzend bis zum letzten Stück, man wirft nicht so viel weg." (P7_B_p, Pos. 8)

By getting to know each other personally, producers can share more information about the products with their customers and receive direct feedback and recognition. Regarding the initiatives, through communication and knowledge exchange, shared ideas and understanding can be created among consumers as a basis for a broader social acceptance. Interviewees expressed many ideas for

achieving mutual understanding and initiating a change in mindset. For example, P4_A_p imagined providing transparency through background information about the production on the packaged products, info boards in the shop, or field signs: “Man kann ja einfach auch die Landwirtschaft zeigen, oder die Position zeigen, oder das Produkt zeigen, eben mit Hintergrund. Das ist, glaube ich, eine tolle Sache.” (P4_A_p, Pos. 22). P4_A_p is convinced that if consumers have the necessary knowledge and if “wrong” information are clarified, for instance about bread making and about what constitutes high-quality production (“Das sind so Sachen, das würde ich auch gerne erläutern.”; P4_A_p, Pos. 30), they will eventually adjust their behaviour accordingly. While P4_A_p focuses mostly on the responsibility of producers, P7_B_p argues that consumers have to take a more active role through their buying decisions as farmers would adjust their production according to the demand – and not according to goals or requirements set by the state: “Man kann auch nicht die Bauern dazu zwingen, das geht einfach nicht, das geht über den Verbraucher. Und die Menschen müssen es einfach fordern, finde ich, und dann stellt jeder Landwirt selber um, oder versucht [es].” (P7_B_p, Pos. 8).

In both initiatives, knowledge transfer and shared experiences are also planned to be created through educational activities, with a special focus on children in cooperation with municipal schools, but also including seminars and joint activities such as field visits and cooking workshops aiming at the general municipal community and enhancing the direct contact with food:

> “Ich habe auch nicht die Lösung, aber ich weiß nur…, wenn ich selber mal was in die Hand genommen habe, selber was damit gemacht habe, dann habe ich ein ganz anderes Gefühl dafür und kann bei manchen Sachen auch ein wenig das Schwarz-Weiß-Denken weglassen und beim Einkaufen offener [sein].” (P3_A_p, Pos. 68)

Both mayors agree that despite the rural surroundings, children in their municipalities do not know more about food production than those having grown up in urban surroundings, making them equally distanced from agriculture, as it is not common anymore to have one’s own small parcel for food production: “Deshalb sind natürlich die Kinder, die jetzt auf dem Land aufwachsen, genau so weit weg vom Garten wie ein Kind in der Stadt.” (P5_B_m, Pos. 40).

5 Discussion

The following sections discuss the results of the qualitative interviews towards the role of proximities in the establishment of AFNs and resulting implications, i.e. potential ways of managing or substituting aspects of proximity to achieve long-lasting and stable collaborations. Finally, methodological considerations are addressed.

5.1 Relevance of proximities for the establishment of AFNs

5.1.1 Key findings

The analysis showed that all forms of proximities are visible in the studied cases, though to varying degrees. While the degree of geographical proximity is relatively high, relational ties, particularly social, cognitive, and organisational proximity, were found to be rather weak. In this context, the distinction between internal and external proximity proved useful to better assess, on the one hand, internal relations between collaboration partners, and, on the other hand, the interplay with contextual proximities and their influence on AFN formation. An overview of the case-related proximities between the interviewed actors as well as between the initiatives and their context, i.e. the society and the dominant regime, is provided in Table 6. As both initiatives have certain aspects in common, they are described together where applicable.

Table 6 Overview of proximities in case A and case B.

	Internal proximity	External proximity	
		AFN → society / dominant regime	*Society / dominant regime → AFN*
Geographical proximity			
Case A	Permanent co-location: respondents within a 2 km radius of the project site (located within the municipality)	Favourable natural site and climate conditions; high density of other AFNs in the region A: Embeddedness in existing infrastructure (supermarket, multigenerational house, school, medical centre) B: Embeddedness in future town centre (with space for practitioner and apartments)	Relatively good accessibility (by car) due to central localisation; access dependent on opening hours
Case B	Permanent co-location: respondents within a 10 km radius of the project site		
Organisational proximity			
Case A	No further project-specific interaction after initial contact (no frequency of interaction) Partially open questions regarding pricing (A) and shop management (B) lead to uncertainty and limit willingness to collaborate and take risks Central coordination by neutral actor as central condition by producers Oral agreements, no legally enforceable contracts so far (low intensity of control)	Direct integration into the food system (supermarket) and relationship with other actors (roastery, social association)	Openness and willingness by the supermarket to cooperate
Case B		No direct interaction with the dominant food system	No direct relations
Institutional proximity			
Case A	(Partially) shared legal and administrative framework Shared values (appreciation of food and food production, regional production and consumption, responsibility of agriculture towards society)	Embeddedness in formal institutional framework, yet partly high emotional distance to dominant institutions and little institutional trust (basic institutional trust towards municipality) Initiatives provide spaces for experiencing shared values	Mayors as intersections between local community and higher-level state institutions High societal relevance of case-specific values and practices
Case B			
Social proximity			
Case A	Relationships at professional level; collaboration partners know each other; partly externally shared experience; mainly little social trust between producers and mayor	Proximate relations through local shop as intermediary; face-to-face contact and exchange between producers and consumers through joint activities	Social acceptance and appreciation of the initiative through exchange and interaction
Case B	Relationships at professional level; producers do not know each other; no shared experiences; little social trust between producers and mayor		
Cognitive proximity			
Case A	Little exchange of information and ideas (knowledge gap, diverging expectations) (Partially) shared project goals (increasing the visibility of local food production, raising awareness, revitalising rural areas)	Knowledge transfer through background information on packaging and signs, through visits to fields and production sites, through workshops, through involvement of municipal school	Growing interest and understanding of consumers regarding the origin and production conditions of food products
Case B			

5.1.2 Proximities within AFNs

In both cases, geographical proximity is high due to the permanent co-location of collaboration partners (slightly higher in case A than in case B). Consequently, actors share similar natural conditions important for agri-food supply chains. Because of their co-location, the likelihood is given that actors share other contextual factors related to the other forms of proximity, such as a common set of institutions, or market and social structures, although it can be argued that the sharing of the same professional background (cognitive proximity) may be a stronger determinant for producers for being close. The vicinity to the local shops also provides advantages for the producers in terms of low logistical efforts for delivering their products.

At the current stage of the initiatives, the risk of a spatial lock-in as described by Boschma (2005) appears to be relatively low as the relational forms of proximity are low in intensity in comparison to the spatial closeness within both initiatives. Following Boschma and Frenken (2010), the high degree of geographical proximity given in both cases may compensate for a lack of social or organisational proximity as it facilitates the monitoring of collaboration partners. This could be especially relevant considering the initial stage of both initiatives. The importance of social control, i.e. collaboration partners can watch each other's activities, was also stressed by one producer. Yet, the lack of both organisational and social proximity in this study seems too substantial to be counterbalanced by a high degree of geographical proximity. In other words, the results indicate that either organisational or social proximity should be given to some extent.

Institutional proximity proved to be the strongest among all relational proximities, as the interviewed collaboration partners shared a set of informal and formal institutions. Besides the embeddedness in similar formal institutional settings, a common foundation became visible in the interviews in terms of shared values and practices. In the given cases, this may prove especially relevant as a basis to establish a closer working relationship considering the lack of strong social and organisational ties between interviewees. However, the results indicate that institutional proximity is not as dynamic as proposed by Balland et al. (2015). Rather than being constantly adjusted in the course of a collaboration, fundamental values and trust or mistrust in formal structures are subject to institutional inertia. While organisational structures may be adjusted dynamically and new knowledge may be acquired in a short time, institutions are more implicit and resistant to rapid changes. This means it is questionable whether interviewees will modify their individual set of institutions as an outcome of the collaboration within the initiative. Rather, the interviewees' decision to consider a participation in the initiatives (and/or to give an interview), in the first place, was motivated by the values and beliefs they had, and based on which they may decide to invest some additional time and financial resources in pushing forward the initiative. This way, the actors' shared institutional foundation can facilitate their collaboration and contribute to the strengthening of other forms of proximity without those having a direct sharpening influence on institutional proximity. For

instance, although P7_B_p has a certain proximity to formal legal institutions since she has to comply with regulatory requirements in order to be able to operate her farm and sell her produce, she still has a high degree of distrust in these institutions, i.e. it is a rather forced relationship which does not seem to be affected by a considerable social proximity to the persons representing these institutions to her. The analysis also showed that laws and regulations may actually hinder innovation, as some producers appeared to be limited in the implementation of new ideas due to a lack of institutional openness and flexibility as described by Boschma (2005). Although the producers' relations to formal institutions are generally rather distanced, in this respect, they are proximate to each other, i.e. they share their low trust in formal institution (yet with a higher trust in the mayors as local representatives). Instead, they tend to place more trust in the power of values shared with their (future) customers, i.e. they compensate a lack of trust in formal institutions by strengthening informal institutions.

Although the initiatives analysed in this thesis show many similarities, for instance their shared focus on enhancing the re-appreciation of food and food production, and the focus on the involvement of farmers, a major difference between both cases emerged in the interviews regarding the delimitation of the initiatives' scope. In case A, the mayor accepted existing proximities and placed the local availability of farmers and resources first, i.e. he assessed what famers based within the municipal area produce and adjusted the concept of the initiative accordingly. In this way, P1_A_m followed a more pragmatic approach than P5_B_m, acknowledging that farmers may have different interests than mayors, and that the initiatives goals need to be framed in a way in which they fit to the farmers' personal and professional backgrounds in order to strengthen cognitive proximity. As a result, initiative A has a clear geographical and content-wise limitation.

In contrast, P5_B_m focused less on the potential added value that a collaboration may have for farmers, but instead seemed to assume, to some extent, what P1_A_m explicitly denied, namely that producers may actually participate "out of altruistic reasons" (P1_A_m, Pos. 92). P5_B_m did not ask local farmers what they could potentially contribute to a local shop like P1_A_m, i.e. he decided against adjusting the design of the initiative to local circumstances, for instance by trying to involve those farmers that only produce wheat and maize. Instead, he had a relatively clear idea of the initiative in the first place, with the shop offering a comparatively complete range of food products. This way, the cognitive distance between the mayor, on the one hand, and local farmers, on the other hand, was higher. As a result, P5_A_m had difficulties in finding suitable farmers who could fulfil these requirements, especially with regard to the supply of fresh fruits and vegetables.

With regard to the internal set-up of the collaboration the interviews revealed that both initiatives still face major challenges due to low levels of relational proximity. The results suggest that despite the early stage of the initiatives higher levels of proximity are necessary to guarantee a successful implementation.

Social proximity, i.e. the embeddedness of economic interactions in social relations, enhances the commitment of actors (Boschma, 2005; Chiffoleau, 2009). Vice versa, a lack of social proximity affects the actors' motivation for collaboration. This is reflected by the results of this study in both cases as even those producers that had initially confirmed their interest in participation to the mayors (P2_A_p, P4_A_p, P6_A_p) showed a certain distance (mistrust) and uncertainty towards the initiatives. The interview denial of a producer in case B confirmed this, as this was explained with the decision to withdraw from the initiative because P5_B_m had not approached them again and instead seemed to prefer other producers. Therefore, the results highlight the high relevance of (a lack of) the social proximity, suggesting that a certain degree of internal social ties may be beneficial for a collaboration. Overall, social processes appeared to be key drivers for the establishment of both initiatives, confirming findings by other authors such as Dubois (2018). The analysis also indicates a close link between social and cognitive proximity, showing that a lack of motivation and trust is directly related to a lack of communication and information sharing on the part of the coordinator.

Among producers, the mutually reinforcing deficiencies in both social and cognitive proximity overall led to an increased emotional distance towards the initiatives. This distance seemed to originate, on the one hand, from the fact that the mayor did not seek any form of contact to them, which would be necessary to build social trust, and, on the other hand, from the lack of information on the progress of the initiatives. Both social and cognitive proximity could be enhanced through an appropriate organisational (governance) framework providing space for regular exchange.

The analysis indicates that at the current stage of the initiatives there is no risk of social ties becoming too strong with negative effects on the collaboration. Yet, the comparatively close relationship between P1_A_m and P3_A_p may produce a slight imbalance in the collaboration network as the main information flow takes part exclusively between them. Although the other producers of initiative A also benefit from this because P3_A_p shares information with them, this bears the risk of information being lost or misrepresented, and it does not address the producers' wish to be directly approached by the mayor.

In general, the interviews revealed that a solid common knowledge base did not exist in neither of the cases. Yet, this seemed to be rather because of the lack of communication than a per se high cognitive distance. Apart from the initial contact, there was no further project-specific internal communication with those producers who had been approached for participating in the initiatives. Instead, they relied on information published in newspapers or press releases like the broader public did. Due to the absence of further information, producers interpreted the concepts presented by the mayors based on their own understanding and within their own frame of values and priorities. Despite a major lack of information exchange, interviewees voiced partly overlapping conceptions of the initiative. This means that a basis for mutual understanding is principally given. At the same

time, following Balland et al. (2015) and Boschma (2005), collaboration partners may learn from each other as they have complementary backgrounds and expertise. Considering the actors' heterogeneity, specifically in case B, a comprehensive and steady exchange of information seems to be crucial in order to align ideas and knowledge bases, and to realise the potential for the associated higher degree of cognitive proximity. The results confirm, as argued by Boschma (2005), that a basic degree of information sharing and mutual understanding is required for collaboration success.

Furthermore, the analysis shows that social, cognitive, and organisational proximity may partly substitute each other. This means, for instance, that a low level of cognitive proximity may be compensated by a high level of social trust in the collaboration partners (social proximity) or by clear rules for joint action and mechanisms of control (organisational proximity), this way facilitating the combination of different bodies of knowledge and promoting mutual understanding.

Although literature suggests that the participation in AFNs may enhance the farmers' skills and capabilities and strengthen entrepreneurial learning (Chiffoleau & Dourian, 2020; Dania et al., 2018; Manyise & Dentoni, 2021), the producers interviewed for this study stressed that they did not see their stake in coordination or the management of sales activities, both because of time limitations but also because of a lack of necessary skills and/or the willingness to carry out these tasks. In both cases, producers preferred a centralised, but neutral coordination. Although the issue of coordination remained an open question, the initiatives generally provide the opportunity to centralise management through the local shops as direct intermediaries between consumers and producers.

At the time of the interviews, the main responsibility for the initiative and the coordination of collaboration partners was with the mayors. In both cases, they functioned as brokers and interface between different groups of actors and activities (e.g. between the producers and the social association [case A] or the local practitioner [case B]), thus being key for initiating the process of network formation as described by Batterink et al. (2010). While the mayors were responsible for setting the agenda, the results show that they did partly receive support in generating and implementing ideas, for instance by P3_A_p in case A and the project group in case B.

The interviews made clear that the initiatives do not have any kind of formalised structures such as written agreements, regular meetings, or a system of monitoring and control. Characteristically for AFNs (Kump & Fikar, 2021), both initiatives (are planned to) rely primarily on social relations and oral agreements rather than on legally binding contracts, resulting in a low intensity of control (e.g. social control through geographical proximity). This goes along with a high uncertainty and, to some extent, with fear of opportunism, especially as the initiative are still in the development phase. Although in both initiatives, the risks for producers were relatively low as they mostly planned to build on existing structures, the interviews made clear that the producers' general willingness to take risks and to collaborate is linked significantly to the information they do or do not possess. In

case B, this led producers to prefer formalised arrangements to account for the lack of knowledge and trust. The lack of organised exchange also means that there is no space for structured feedback. While Boschma (2005) argues that systems with high organisational proximity lack feedback mechanisms, the results of this study suggest that a certain level of organisational arrangement may be necessary as a framework for effective and multilateral feedback and joint learning which is not possible in lose systems with low organisational proximity.

Although the formal decision rights are allocated with the mayors and not distributed among all collaboration partners, there is a mutual dependence between mayors and producers as the mayors are dependent on the producers' willingness to collaborate. Thus, producers do have a certain influence on decision-making such as pricing while keeping the option to opt out at any time if they do not come to an agreement with the mayors.

Overall, it becomes clear that in both cases, a higher degree of organisational proximity is necessary as a basis for joint collaboration and to provide a space for the evolvement of trust (responding to the lack of social proximity) and the sharing of resources, despite the still pending start of the implementation. A higher proximity may be achieved through the partial formalisation of relations, for example through a formal contract, to compensate for a lack of trust. While it is important to acknowledge the limited capacities of producers, their uncertainty whether to participate may be overcome by a clearer communication of expectations and requirements. This way, producers would actually have a basis to assess whether they have enough capacities or not to participate.

In order to achieve a successful, i.e. a stable and long-term collaboration, it is upon the mayors to facilitate the establishment of appropriate organisational structures which in the long run function independently of them as mayors, but also to enhance social interaction and joint learning as the basis for future-oriented AFNs. It remains to be seen whether the further evolvement of the collaborations and the creation of shared experience within their context lead to stronger relational ties and more understanding, thus facilitating future collaboration, or to the distancing between actors as, for instance, issues of disagreement remain unsolved.

5.1.3 Interplay between internal and contextual proximities

Generally, the contextual conditions for both initiatives seem to be favourable. The embeddedness in the specific local multi-functional site contexts, i.e. the linkage to a café and the combination with educational activities in both initiatives, as well as the location of initiative A close to a supermarket and within the context of multi-generational housing, and of initiative B within the broader context of a town centre with flats and health services, is seen as promising by all interviewees. The location at the centre of the local community enables the development of a range of other non-spatial dynamics.

Nevertheless, the diverse regional agricultural structure and the high density of already existing successful farm shops and small-scale local agri-food initiatives have both advantages, namely that there is already some degree of awareness among the local population, and challenges, as this puts a higher pressure on the initiatives because they have to develop some form of unique selling proposition in order to be competitive. The vicinity of other similar initiatives also provide opportunities for non-local linkages as outlined by Boschma (2005). In both cases, local agri-food initiatives of neighbouring municipalities provided ideas (e.g. for an oil mill in case A) and best practice examples (e.g. on the management of zero-waste shops in case B) for the implementation of the initiatives. Additionally, as both initiatives are relatively similar in scope and goals, and since they are located in neighbouring municipalities, there is also the potential of direct exchange of knowledge and experiences (and maybe other resources) between initiative A and B.

Both AFNs provide the potential for a rapprochement between producers and consumers by establishing interpersonal relations and trust among them through proximate (via the local shops) and face-to-face interactions (via additional educational activities). These spaces of interactions are important for achieving mutual understanding (Dubois, 2018), and, consequently, the re-appreciation of food and food production. Only for some of the interviewed producers – those that do not yet practice direct marketing – these forms of direct interactions with the consumers are be completely new. Still, for all interviewed producers, the participation in the initiatives would mean an expansion of their customer base and a new form of joint action with other producers. However, these positive reverse impacts of AFNs on external proximities may only be activated if collaboration partners manage to successfully reach a sufficient level and balance of internal proximities as the basis for collaboration.

Following Chiffoleau et al. (2016) and Feldmann and Hamm (2015), to influence consumer behaviour and trigger a change in social practices, consumers have to be able to identify the added value of the products sold in the context of the initiatives. Therefore, appropriate external communication is decisive for the success of the local shops, especially considering the wide range of existing labels and key words that exist in relation to food. P1_A_m is aware of this high relevance of creating visibility and communicating the uniqueness of the initiative to the local community. This became clear as he had already started to develop a marketing concept.

According to Bui et al. (2016) and Rossi (2017), AFNs can have the potential to trigger the transformation of the mainstream food system, i.e. they may have an impact beyond those actors directly involved in the initiatives. Gugerell and Penker (2020) point out that the potential transformative aim of AFNs depends on their strategic orientation and, thus, the according relationship to the dominant system. While both cases in this study aim at challenging the prevailing industrial and distant modes of production and consumption, and to show an alternative to consumers, in case A, contrary to other AFNs such as CSAs, the initiative does not seek to maintain autonomy from the dominant

food system, but to achieve a mutually beneficial relationship between the supermarket and the initiative. Considering this embeddedness in the mainstream food system and the limited range of products sold, initiative A can be seen as complementary, rather than as alternative to the dominant system. The direct attachment to the supermarket as a dominant food system player is seen mostly positive (as it facilitates access for a broader range of consumers) despite the interviewees' general cognitive distance towards the mainstream food industry and the producers' feeling that they do not receive adequate recognition for their work and their products. Still, the vicinity to the supermarket may not be as neutral as presented by P1_A_m. The fact that P2_A_p got approached individually by the supermarket at a time when the latter had already confirmed its collaboration with the initiative shows that there is still some degree of competition between the supermarket and the initiative.

In case B, the question of cooperating with a dominant actor like a supermarket chain was not relevant as such like in case A because of a different site context. Regardless of this, interviewees of case B share the conception that the initiative should maintain a relatively high distance to the mainstream food system as this may even contribute to its attractiveness and added value.

All in all, whether the initiatives under study will actually develop a transformative potential may only be assessed after they have been running for several years. Nevertheless, it is unlikely that single initiatives may trigger a system reconfiguration as pointed out by Kump and Fikar (2021) and Chiffoleau and Dourian (2020). Instead, the multiplicity of such small-scale initiatives may more likely lead to a broader diffusion of more sustainable modes of food production and consumption.

5.2 Implications

Multi-actor collaboration in the context of AFNs such as those studied in this thesis usually involve a diverse range of actors and are mainly shaped by social relations. This means that relatively little resources are available for coordination while, at the same time, the effort of coordinating actors with different backgrounds and diverging ideas is comparatively high. The results confirm that the way that interaction and exchange between actors is organised is central for collaboration success. A facilitator enabling the coordination between collaboration partners, like the mayors, proves to be especially relevant in the phase of formation. Though it is not yet clear, whether the studied initiatives will be successful in the long run, the analysis showed that without the mayors, there would not even have been the initial impulse to establish a collaboration. This confirms arguments by other authors such as Batterink et al. (2010) and Gugerell and Penker (2020) concerning the important role of leading individual actors, specifically local authorities, in facilitating small-scale initiatives. It is also in line with statements by P8_rc arguing that although initiatives for societal change and sustainable practices usually have to emerge in a bottom-up process from the local

population in order to be sufficiently strong to survive, mayors can take an active role in taking up these ideas and supporting and streamlining civil-society based engagement by bringing together different actors who might otherwise not join efforts to work towards common goals.

In this context, it is important to identify goals and values that are shared among different actors in the first place. In the analysis several aspects emerged as being shared between all collaboration partners, although with different individual priorities. Most importantly, the appreciation of local food and food production, and the associated goals of increasing the visibility and raising the awareness on local agriculture proved to be widely shared among interviewees.

As illustrated in section 2.1.1, local small-scale food practices are not per se more sustainable than global or industrialised systems of food production, and benefits of both systems should be combined rather than exclusively focusing on local systems. Still, the positive valuation of regional and local agriculture should be accounted for on policy level since a wide range of different actors can identify themselves with this relatively broad concept. Most importantly, this connecting value may be used in order to convince actors of the conventional food system to engage in AFNs and to apply more sustainable practices, as suggested by Chiffoleau and Dourian (2020) and Kump and Fikar (2021). This way, the focus is placed on bridging aspects which potentially enhance proximity between different actors, instead of focusing, for instance, on strengthening organic agriculture which automatically excludes a major part of farmers in Germany. In this way, the approach by P1_A_m, i.e. the inclusion of conventional actors and the location in direct vicinity to a supermarket, thus enabling low-threshold access for "average" consumers, may be more promising, especially with respect to the aspect of social cohesion and social justice in agri-food systems.

To achieve a transformation towards more sustainable modes of food production and consumption, appropriate spaces of learning and interaction have to be created to enable farmers the exploration of new ways of resource use and the acquirement of necessary competencies, and to reconnect with consumers (Chiffoleau & Dourian, 2020; Manyise & Dentoni, 2021). AFNs, like the cases analysed in the context of this thesis, may provide such spaces. As confirmed in this thesis, AFNs require a high degree of coordination and joint effort. Thus, to achieve a wider replication and enhance their transformative potential, their establishment needs to be facilitated by appropriate policy instruments, particularly at the local and regional level. While P8_rc turned out to function as an important knowledge disseminator on district level, the mayors as local authorities are the key interface for connecting different kinds of actors and, potentially, for transferring knowledge to the municipal farmers and the wider local community.

5.3 Methodological considerations

Both the use of the proximity approach as a framework for this thesis as well as its application through a specific research design presented certain challenges and limitations discussed in the following.

Use of the proximity framework. The results of this study confirm the difficulty of distinguishing clearly between each dimensions of proximity, which also became apparent, for example, in the studies by Gugerell and Penker (2020) and Gugerell et al. (2021). Although additional literature as well as examples of empirical application were drawn upon to enrich the operationalisation for this thesis, the proximity approach did not prove to be an intuitively applicable analytical framework. By its definition, the proximity analysis lays its focus on the interface between two actors and on how close or distanced they are in terms of shared ideas, experiences, institutions, and relational and physical spaces. However, to compare these aspects and determine what actors share between each other, it is important to first understand the actors' individual backgrounds. Only in a second step can be assessed which factors do they share or not share and in which way this could be hindering or beneficial for a collaboration. The proximity framework does not specifically address this baseline necessary for a comprehensive analysis of proximities. Furthermore, collaborations often have a multi-actor character involving a complex web of different relations which influence each other mutually in several ways. Therefore, a first important step is to distinguish between relations within an AFN and those between the AFN (and individual AFN actors) and its wider context. Still, even regarding internal relations, there may be significant differences in proximities between groups of actors and single individuals. A further limitation linked to the use of the proximity approach was that a significant amount of proximity literature is published in French and, thus, was not taken into account as only papers published in English (and partly in German) were considered for this research.

Research design. The proximity approach proved to be specifically challenging from a constructivist perspective. For example, it was difficult to decide what should be considered as perceptions and expectations counting towards cognitive proximity and what as "true" information. This also included apparently simple information such as how much time had passed since the initial contact by the mayor or how much price discount P1_A_m had asked for. To account for the interconnectedness of proximities, a (potentially solely inductive) content-based analysis among thematic categories and the subsequent analysis of the interplay of proximities emerging within these categories may be suited better. This way, the analysis could be narrowed down to certain aspects of collaboration. However, as the analysis originated from proximities, singling out one form of proximity for deeper analysis did not seem appropriate as it would imply neglecting certain underlying dynamics necessary for a complete picture of the collaborations. As a result, this thesis remains rather broad in its results.

A further challenge in research was the producers' lack of knowledge and shared experiences regarding the initiatives owed to their early stage of development. As a result, asking details and opinions on the initiatives sometimes turned out to be difficult, since interviewees felt they did not have enough information to judge. Instead, several interviewees posed questions back regarding current information on the initiatives, or they asked for reaffirmation, which made it difficult to avoid a conversational mode at all times and to maintain neutrality. Especially for P7_B_p, the interview and the contact to the interviewer seemed to be the main reason for regaining interest and motivation in participating in the initiative. Quite contrary, prior to the interviews with them, P1_A_m and P3_B_p had already had several exchanges with other researchers of the project they were participating in with initiative A. Thus, it can be assumed that they were used to speak about the initiative and prepared to set their own emphases (which was possible due to the open semi-structured character of the interviews). Consequently, the validity of this study is limited.

In addition, at the time of the interviews, the implementation in both cases, specifically the opening of the local shops, was still pending. Therefore, a follow-up study on the further evolvement of the initiatives is necessary to be able to draw reliable conclusions regarding the role of proximities for the success or failure in achieving long-lasting and stable collaborations.

6 Conclusion

In this thesis, the proximity framework by Boschma (2005) was operationalised for the analysis of the role of proximities in the establishment of multi-actor collaboration for local agri-food supply chains, including potential impacts on contextual proximities, and how proximity could be used to steer collaborations towards long-lasting and stable AFNs. A qualitative comparative case study approach was applied to investigate the interface between producers and local authorities.

The research confirms that proximity may be a driving factor for AFN formation, while a lack of it can hinder the establishment of AFNs. Although the creation of alternative modes of food production and consumption, like in the cases of this thesis, often takes place within a limited geographical area, relational proximities, specifically social processes, prove to be the main determinant for AFN formation. While a relatively high level of geographical proximity and a basic set of shared institution are favourable for collaboration, they are not enough to build on. Rather, social, cognitive, and organisational proximity need to be strengthened to enable the effective establishment of AFNs and to guarantee long-term collaboration success. The analysis reveals the high interrelatedness of these proximity dimensions. Although the argument by Boschma (2005) that collaboration and joint learning require a minimum level of cognitive proximity is confirmed, in this study it does not appear to be the most relevant in terms of the actors' motivation to participate. Instead, a clear communication and a constant sharing of knowledge (cognitive proximity) have to be accompanied by a considerable degree of trust, either achieved directly through social ties between collaboration partners (social proximity) or through clear mechanisms of coordination and control (organisational proximity), this way guaranteeing a fair and equal treatment and, in the end, enabling the development of social trust. Enhancing trust among collaboration partners is particularly relevant in the initial phase of AFN formation. A lack of it, as in the present cases, can lead actors to lose their commitment and motivation, and to distance themselves from the initiative. For those actors taking on the role as facilitator or intermediary body, like the mayors in this study, the most important task is therefore to strengthen the social capital within the AFN. For this, a constant exchange with all actors involved is necessary to identify their current attitude towards the initiative and potential issues of discontent.

Because of their small-scale character and their immediate embeddedness in specific local contexts, AFNs have the potential to enhance social interaction and cohesion. In contrast to long and complex value chains where individual stakeholders generally have little scope for influence, AFNs enable the re-approximation and direct connection between producers and consumers, and the joint and active design of the ways food is produced, distributed, and consumed. A shift towards environmentally sustainable and resilient value chains can only be achieved when taking into account the high relevance of this social dimension of agri-food systems, because people have to understand and accept the necessity of this shift to make it work. Although AFNs may have different goals,

they all build on strong social proximity and, thus, provide the basis for mutual understanding. Collectively, AFNs may therefore facilitate a societal and political transformation by embedding food production in local and social contexts. In order to do so, the relevance of AFNs and other forms of sustainability-oriented initiatives needs to be acknowledged by policy makers.

The research provided empirical insights on the initial phase of AFN formation based on an expanded operationalisation of proximity. This way, a better understanding of the underlying dynamics influencing the formation of AFNs could be achieved. Although the results suggest that whether the initiatives are successful and long-lasting depends mainly on the commitment of individuals in creating a trust-based and organised environment for collaboration, no final statements are possible towards the role of proximities for long-term collaboration success.

This study is limited by methodological aspects elaborated in section 5.3. Also, it is only a first step in identifying potential mechanisms for creating effective and stable collaborative arrangements. Further research may focus on a systematic sustainability assessment of AFNs and, in general, of proximities in agri-food systems, for example based on Brunori et al. (2016), Gava et al. (2018) and Sala et al. (2015), to shed light on the question on how to combine local and/or short value chains, on the one hand, and global and/or large-scale and industrialised value chains, on the other hand, in the most effective way. Also, alternatively to the proximity framework, other potentially more appropriate research approaches may be considered for further investigation on collaborative arrangements towards alternative and sustainable food practices, such as the focus on behavioural factors (cf. Dessart et al., 2019) or the content-based distinction between input, process, outcomes, and performance proposed by Hubeau et al. (2017) to avoid analytical difficulties caused by a high overlapping of the different proximity dimensions.

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Appendices

A Interview guideline

Table 7 Guideline for the interviews with the producers

Interviewkategorie	Potenzielle Fragen
Einleitung	Danke für Bereitschaft zu Interview Erläuterung Vorgehensweise Vorstellung der Person & des Forschungsvorhabens; Einordnung Interview Vorstellung Thema: Initiative & Kontext Fokus auf Schnittstelle Landwirte – BM/Gemeinde Info zu Nutzung des Interviews im Forschungsvorhaben KOPOS Erläuterung zu Anonymität & Umgang mit Aussagen Noch Fragen?
Hintergrund	Bitte erzählen Sie kurz etwas zu Ihrem Betrieb (Gründung, Ausrichtung, Anzahl Mitarbeitende, Absatzmärkte, …) Wie haben Sie von der Initiative erfahren? Wie wurde Ihnen die Initiative vorgestellt? Können Sie kurz in 2-3 Sätzen zusammen, wie Sie das Konzept verstanden haben? Was halten Sie von der Idee? Warum haben Sie sich für/gegen eine Teilnahme entschieden? Haben Sie sich sofort entschieden oder brauchten Sie Bedenkzeit?
Soziale Nähe *(Vertrauen basierend auf sozialen Beziehungen; geteilte Erfahrungen)* **& kognitive Nähe** *(gegenseitiges Verständnis, Wissenslücken, gemeinsame Wissensgrundlagen)*	Kannten Sie [den Ansprechpartner] schon vor Beginn der Initiative persönlich? Seit wann? Ist das Ihrer Meinung nach wichtig? Warum? Wie oft haben Sie Kontakt? [Bsp.] Gab es an manchen Stellen Schwierigkeiten in der Kommunikation? Spielt es eine Rolle für Sie, von wem so eine Initiative gegründet wird? (Würde es einen Unterschied machen, wenn bspw. ein anderer Landwirt oder jemand vom Bauernverband eine Initiative starten würde, also jemand vom Fach/aus Ihrer Branche?) Spielt es eine Rolle für Sie, ob Kolleg:innen/andere Landwirt:innen der Region mitmachen? (Wie oft haben Sie Kontakt untereinander?) Welche Vorteile & Nachteile sehen Sie bei der Initiative? Welchen Mehrwert gibt es für Sie/den Betrieb?
Institutionelle Nähe (*Vertrauen basierend auf gemeinsamen Institutionen und Regelungen, Makro-Level)*	Welche Rolle spielen für Sie die Ziele/Werte der Initiative? Ist Ihnen Regionalität wichtig? Warum? (im eigenen Betrieb; beim Privateinkauf) Denken Sie die Gesellschaft ist “bereit” für solche Initiativen? Gibt es dbzgl. Nachfrage seitens der Kundschaft? Warum sollten Konsument:innen für solche/regionale Produkte mehr zahlen? (Tun sie das Ihrer Meinung nach?) Welche Rolle spielt Nachhaltigkeit für Sie?
Organisatorische Nähe *(Kontrolle & Hierarchie innerhalb der Initiative, Mikro-Level; Koordination)*	Wie stellen Sie sich die Zusammenarbeit mit [der Initiative] vor? Haben Sie schon Details besprochen? (Verträge, Sicherheiten etc.) Was ist/wäre für Sie das Wichtigste in der Zusammenarbeit? Spielt die Rechtsform der Initiative eine Rolle? Unter welchen Bedingungen würden Sie sich an der Initiative beteiligen? Was müsste die Kooperation bieten?
Geographische Nähe	Wie weit wären die Lieferwege für Sie? (zum Standort der Initiative)

(räumliche Distanz)	Spielt(e) diese Entfernung für Sie eine Rolle bei der Entscheidung (für/gegen die Initiative)? Ist es wichtig für Sie, dass die Initiative direkt in der Nähe bei Ihnen im Ort ist, oder würden Sie sich auch an anderen Initiativen weiter weg beteiligen? Wie weit sind Ihre anderen Absatzpunkte entfernt? Was bevorzugen Sie an diesen anderen Absatzpunkten?
Herausforderungen, zukünftige Entwicklung	(Was könnte die Lösung für die von Ihnen genannten Probleme sein?) (Können Sie sich vorstellen, zu einem späteren Zeitpunkt einzusteigen?) (Welche Herausforderungen sehen Sie für die Initiative?) Wird die Initiative erfolgreich sein?
Abschluss	Danke Weitere Anmerkungen/Fragen; was ist noch wichtig zu wissen? Empfehlung Interviewpartner:innen Ist es in Ordnung, nochmal nachzufragen?

B Code system

Table 8 Code system used for analysis in MAXQDA

Code System	**Frequency**
Code System	841
BACKGROUND INFORMATION on interviewee/farm	25
CONCEPTION OF PROJECT	0
mayors' conceptions	24
participants'/external understanding of project design	10
project design c1	5
project design c2	5
project goals & expected outcomes/benefits	58
increasing the visibility of local food production	12
raising awareness	18
enhancing social interaction & inclusion	5
revitalising rural areas	10
promoting sustainable consumption	4
establishing new value chains	4
other goals / outcomes	5
expected costs & benefits	9
ideas on products & general sales concept	32
conception of "regional"	6
Outlook / timeline / general attitude	12

INTERACTION, EXCHANGE, COMMUNICATION [OP, CP, SP]	0
interaction & exchange / internal relations	28
First exchange on project	16
assessing the influence/role of others	10
lack of knowledge /communication	15
(joint) learning	13
VALUES & PRACTICES	27
circular agriculture / regional P&C	13
farmers' responsibility towards society	5
appreciation of food (production)	9
RELATION TO SOCIETY & INSTITUTIONS [IP, SP, CP]	63
relation to social environment	26
relation project -> society	15
relation to formal institutions	9
relation project participants <-> district	8
role of district	5
ORGANISATION & COORDINATION	0
internal OP	0
organisational capacity	5
structures & responsibilities	42
financing	9
moving towards a formal structure?	12
willingness to collaborate	16
willingness to take risks	7
conditions for collaboration	18
price determination	9
external OP	0
structure of regional agriculture/food system	11
relation to other (food) system actors	10
project <-> regime	10
SPATIAL & PHYSICAL CONTEXT	0
general / distance to location	7
assessing the regional market situation	4

availability of farmers	7
availability & accessibility of resources & infrastructures	5
natural site conditions	6
accessibility of the project location	10
OTHER	0
effects of Covid-19 pandemic	8
Climate change	3
coffee supply chain	1
ANALYSIS PROCESS	330
proximities	4
CP - Cognitive proximity	0
SP - Social proximity	0
(social trust)	0
IP - Institutional proximity	0
(institutional trust)	4
OP - Organisational proximity	0
GP - Geographical proximity	0
Links to other interviewees	13
P1_c1_mayor	0
P2_c1_producer	2
P3_c1_producer	4
P4_c1_producer	3
P5_c2_mayor	1
P6_c2_producer	1
P7_c2_producer	1
P8_district	1
Positionality of researcher	11
q	109
a/p	189

Statutory Declaration

I hereby declare that this thesis is the result of my own work and that I have indicated all sources, including online sources, which have been cited without changes or in modified form, especially sources of texts, graphics, tables and pictures.

I confirm that I have not submitted this thesis for any other examination.

I am aware that in case of any breach of these rules procedures concerning plagiarism or attempted plagiarism will be taken in accordance with the subject-specific study and examination regulations and/or the General Admission, Study and Examination Regulations of Humboldt-Universität zu Berlin (ZSP-HU) / Allgemeine Satzung zur Regelung von Zulassung, Studium und Prüfung der Humboldt-Universität zu Berlin (ZSP-HU).

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Place, date and signature