

Cooperate to Transform? Regional Cooperation in Community Supported Agriculture as a Driver of Resilient Local Food Systems



Marius Rommel, Dirk Posse, Moritz Wittkamp, and Niko Paech

1 Introduction

The UN Sustainable Development Goal 2 calls for action to end hunger, achieve food security and improved nutrition, and promote sustainable agriculture. Crucial ways of doing this are to “ensure sustainable food production systems and implement resilient agricultural practices” (General Assembly of the UN 2015). However, the current global food system is dominated by a different logic: it generates a quarter of anthropogenic greenhouse gas emissions (not including non-food agriculture), is responsible for three-quarters of eutrophication worldwide and for a third of global terrestrial acidification, while placing enormous demands on the global stock of biological diversity and freshwater resources (Poore and Nemecek 2018). Market concentration and the globalization of food production are seen as major drivers of these phenomena, given that the top one hundred companies account for three-quarters of all packaged food sales worldwide (Clapp and Scrinis 2017). Cooperation among large transnational companies leads to adverse welfare impacts which cartel authorities attempt to contain; this fails systematically due to market concentration. In fact, the opposite can be observed: mergers (the ultimate form of cooperation) and hostile takeovers (i.e. forced cooperation, the ultimate form of competition) both contribute to further market concentration. This dependency on global players for seeds, pesticides, machinery and crude oil leads to a systemic lack of food security worldwide.

A transformation toward sustainable, resilient, healthy and socially valuable local food systems (LFSs) appears necessary (Hinrichs 2000; Kropp et al. 2021; Mars and Schau 2017). A promising path toward this goal is proposed by *La Via Campesina*, a worldwide organization of smallholders that has developed the concept of food

M. Rommel · D. Posse (✉) · M. Wittkamp · N. Paech

School of Economic Disciplines | Pluralist Economics, Research Project Nascent, University of
Siegen, Siegen, Germany

e-mail: dirk.posse@posteo.de

sovereignty (Wittman et al. 2010). Greater self-determination among farmers and the participation of local actors help to mitigate the risks of dependency on and exogenous disruptions to the industrialized food system. The concept of food sovereignty differs from that of food security by introducing qualitative aspects to what had previously been viewed in primarily quantitative terms. Similarly, alternative food networks (AFNs) (Barbera and Dagnes 2016; Forssell and Lankoski 2015; Opitz et al. 2017) “[aimed] at (re-) connecting food producers with consumers have gained increased attention in the arena of international policy and research” (Opitz et al. 2019: 22). Both movements have served to strengthen regional resilience, giving local food actors the ability to “[absorb] disturbance while undergoing changes to retain essentially the same functionality, structure and identity” (Sage 2014: 257).

One significant innovation that has emerged as part of the AFN movement is that of Community Supported Agriculture (CSA). CSA creates a direct relationship between producers and consumers that facilitates greater social cohesion (Bloemmen et al. 2015; Groh and McFadden 1997). Its basic feature is communal financing of the farm’s budget. The members of a CSA jointly cover the farm’s operating costs (including an appropriate wage/salary for the farmers) for one season or year through regular (usually monthly) contributions (Galt et al. 2019). In return, the members receive a “proportional harvest share, typically on a weekly basis” (Opitz et al. 2019: 23) which may be subject to seasonal and weather-related fluctuations. Thus, the members “share the risks and benefits associated with the uncertainty of farming” (Brehm and Eisenhauer 2008: 95) by adjusting their consumption to the farm produce available. Since this form of financing requires mutual trust and dependable participation, farmers generally disclose their cost structure as well as their standards of production, thus enabling a “system of transparent co-financing of farm operations” (Carlson and Bitsch 2019: 3). Furthermore, opportunities for mutual exchange (meetings, farm festivals, practical and digital collaboration) enable direct relationships between producers and consumers as well as between consumers themselves, serving to embed the activities of CSA farmers and stakeholders in a set of shared social relations (Hinrichs 2000; Opitz et al. 2019: 23; Venn et al. 2006). This mitigates the separation between producers and consumers, the latter becoming “prosumers” (Paech et al. 2021). The resulting social cohesion has proven to be a stabilizing factor of CSAs (Antoni-Komar and Lenz 2021). Barriers related to financial access are often reduced through special pricing mechanisms based on solidarity between prosumers. In so-called *solidarity-based financing* or *bidding rounds* (Krcilkova et al. 2019), members decide on the amount of their individual contribution, considering their own personal needs as well as their willingness and ability to pay (Blätzel-Mink et al. 2017: 417). Individuals or households with higher incomes are invited to ease the burden on financially disadvantaged members by paying a higher contribution. In this way, costs are shared according to need and in a spirit of solidarity (European CSA Research Group 2016).

In view of the ongoing decline in the number of farms in Germany by 12% over the last 10 years and the resulting concentration of farmland (Statistisches Bundesamt 2021), this paper elaborates on German CSA-run farms as a promising economic model that may reverse this trend. Many studies have addressed the multifunctional

effects of CSA and its potential for transforming the food system to achieve greater food security, food sovereignty and regional resilience (Lamine 2015; Matzembacher and Meira 2019; Worstell 2020). CSA can “take different forms as farmers and members shape it to their own needs and expectations” (Samoggia et al. 2019: 1). This results in various locally adapted types and configurations (Koretskaya and Feola 2020). In the 1980s the first producer-led CSA in Germany was set up near Hamburg. Subsequently a second type, consumer-led CSA, has increasingly sprung up, especially around urban areas. More recently, a third type of CSA is emerging, where producers and consumers are formally linked, often through the organizational form of a cooperative. Generally speaking, the number of CSA-run farms in Germany has been growing continuously for about ten years. With currently 344 CSAs in Germany and another 80 initiatives in the course of formation (Netzwerk Solidarische Landwirtschaft 2021), the market share of CSA is marginal in absolute terms. However, there is considerable potential for increase, as there is at least one CSA farm in almost every German region (Paech et al. 2021; Rommel et al. 2019).

We assume that small-scale economic units such as CSAs can be strengthened by forms of local cooperation, thus stimulating a transformation of the food system (Paech et al. 2021). By operating with greater self-determination, food businesses with a local or regional focus such as CSAs can support local food sovereignty. Recent studies have found that farmers who interact directly with consumers generally have a greater need to cooperate on account of their typically being geographically isolated and lacking either the time or the skills to market their produce compared to those who grow commodity crops (Che et al. 2005). However, barriers such as the lack of infrastructure and of financial or institutional support inhibit cooperation (Vogt and Kaiser 2008). To have an incentive to cooperate, “initiatives need to know that the resources they expend will ultimately provide beneficial outcomes that are important to them” (Miller and McCole 2014: 73).

In this sense, the role of regional cooperation between CSAs and other AFN-related actors has not yet been comprehensively analysed. We therefore analyse:

How does regional cooperation affect the development and diffusion of CSA and thus a potential shift toward more extensive coverage of regional food supply?

To analyse the relevance of CSA-specific regional cooperation in transforming LFSs we (1) use transdisciplinary methods to elaborate a systematic framework that draws on the theory of (a) organizational fields (DiMaggio and Powell 1983) and entrepreneurial ecosystems (Cohen 2006; Mars 2020) to answer the question “Who cooperates?”; we use (b) a multi-level approach (Geels 2002) to gather knowledge about “Why does cooperation occur?”; and we draw on (c) the theory of inter-organizational relations (Phillips et al. 2000), supply chain collaboration (Matopoulos et al. 2007) and transaction cost economics (TCE) (Williamson 1991) to account for “How does cooperation take place?”. We then (2) examine the various forms of regional cooperation regarding their potential for promoting the diffusion of CSA by conducting several interviews with experts and practitioners of German CSA organizations.

2 Theoretical Background

Understanding inter-organizational relations within LFSs in which CSAs are embedded requires that we look at (a) the actors: who interacts with whom; (b) their respective intentions: why this interaction is being pursued; and (c) how the specific interactions occur.

- (a) The relevant actors can be identified by applying the theory of entrepreneurial ecosystems. This concept describes “a diverse set of inter-dependent actors within a geographic region that influence the formation and eventual trajectory of the entire group of actors and the economy as a whole” (Cohen 2006: 2). It is generally used to “identify and illustrate the implications of connections between the various organization-types (e.g. businesses, government agencies, community-based and non-government organizations) that compose entrepreneurial systems” (Mars 2020: 55). At the centre of this approach lies social capital (Bourdieu 1986), as it “brings greater structural durability to entrepreneurial ecosystems and the clusters within, by nurturing shared identities, cultures, and support networks between entrepreneurs, ventures, and other relevant actors and organizations” (Mars 2020: 56).

A similar approach is taken in the theory of organizational fields. An organizational field is a set of organizations “that, in the aggregate, constitute a recognized area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organisations that produce similar services or products” (DiMaggio and Powell 1983: 148). Organizational fields are thus composed of competing and cooperating organizations that offer similar products and services on the horizontal axis as well as organizations upstream (suppliers) and downstream (processors/consumers) in the value chain on the vertical axis. We define horizontal cooperation as “an agreement or concerted practice [...] entered into between companies operating at the same level(s) in the market” (European Union 2001: 2). A third type of actors are formal and non-formal agencies, hereafter named agricultural service providers (ASPs), that monitor and influence the actions of these organizations (Mars and Schau 2017: 408). CSA-related organizational fields require “that coordination, communication, planning, negotiation, and reconciliation occur between actors and groups” (Mars and Schau 2017: 408).

- (b) Cooperative endeavours in the CSA context are usually built on shared ideals, with the participants jointly tackling broader objectives such as overcoming industrial agricultural structures that perform poorly in terms of sustainability. Based on Geels’ (2002) multi-level evolutionary framework of niche activities, socio-technical regimes and global trends for emerging system innovations, Loorbach (2004) develops a cyclic management model of four components to govern systemic transitions: “(i) problem structuring, establishment of the transition arena and envisioning; (ii) developing coalitions and transition agendas (transition images and related transition paths); (iii) establishing and carrying out transition experiments and mobilizing the resulting transition networks; (iv)

monitoring, evaluating and learning lessons from the transition experiments and, based on these, adjusting the vision, agenda and coalitions” (Loorbach 2010: 172). Drawing on such a transition agenda for LFSs, CSA projects benefit from multi-actor relations as they are able to incubate change while *enabling* their transformative operations. Moreover, the cyclic management that guides a system innovation out of a niche implies *stabilization* and continuous *development* (of CSA) as necessary requirements for the actor constellations (Geels 2002).

- (c) While many CSAs have built up a self-contained chain of value and distribution, thus functioning more or less independently, others face the challenge of diversifying their output. Some are simply not capable of supplying a sufficiently diverse range of products due to constraints in the production facility, while others risk overburdening their members with high production costs when expanding on-farm production becomes overly expensive due to the inability to exploit economies of scale (Galt et al. 2019). The underlying conflict comes back to the issue of “make, buy, or cooperate” as Williamson (1991) argued in his Theory of Transaction Cost Economics (TCE). TCE defines an optimum organizational governance structure that “achieves economic efficiency by minimizing the costs of exchange” (Young 2013: 2497). These depend mainly on the specific assets involved and the degree of uncertainty of the transaction (Ciliberti et al. 2020). Minimizing transaction costs appears to be crucial in terms of a CSA’s decision to either enable on-farm production, to outsource production and buy in products from the “market”, or to find a hybrid cooperative form. All these forms result in transaction costs, either internally or externally, always in addition to production costs. This makes it necessary to weigh up the overall costs of diversifying the product range, whether this is done via on-farm production, external market supply or cooperation. Thus, the specific mode of inter-organizational interactions often arises from the necessity or motivation to expand the product range. The motivation for inter-organizational relations also arises from other sources, such as working together toward and lobbying for shared (political) goals, or reducing costs by sharing machinery and experience.

It turns out that inter-organizational relations differ in terms of context, intensity and the characteristics of the relationship between the partners. Contrary to competition, cooperation links actors over the longer term by way of contracts, agreements and regular meetings. Cooperation that highlights the congruence of values and goals, such as a non-market approach, is more specifically considered a collaborative relation and, “consequently, is governed by some negotiated alternative to the price mechanism” (Phillips et al. 2000: 24). Collaboration describes “a co-operative relationship among organizations that rely on neither market nor hierarchical mechanisms of control” (Phillips et al. 2000: 74) in order “to advance a shared mission or purpose concerning local agriculture and food” (Miller and McCole 2014: 75).

On this basis, we consider every inter-organizational relation that goes beyond a mere exchange of goods and services as cooperation, while collaboration goes even further, referring to concrete actions taken together.

3 Research Design

Following the concept of transformative research (Jahn et al. 2012; Levkoe et al. 2019; Schäpke et al. 2018), we see our study as a contribution to the co-creation of applied knowledge together with stakeholders.

3.1 Data and Methods

In order to deepen our understanding of regional cooperation in CSA in Germany we applied a range of empirical methods. We examined existing approaches to the analysis of cooperation strategies in the sphere of CSA. In addition, we gathered and analysed our own empirical data. To obtain well-grounded knowledge we used a two-stage approach to data collection based on self-selection as a sampling method (Sharma 2017):

- (1) The majority of all German CSA-run farms are members of Germany's CSA network, which organizes a network meeting twice a year and offers a representative picture of the German CSA movement. An empirical method for three of these bi-annual network meetings was co-designed with the network, consisting of two presentations, four participant observation sessions (Czarniawska 2014) at workshops, and two transdisciplinary workshops, one of which used a participatory approach to stakeholder mapping in the setting of a "world café"¹ (Löhr et al. 2020) on the topic of ASPs. Two further conference meetings organized by ASPs,² which were similar in character to the CSA network gatherings, were used for additional data collection: one presentation, two transdisciplinary workshops and five participant observation sessions at workshops. We recorded our observations at these meetings (general perceptions and plenary discussions) in research diaries.
- (2) Based on this data, we identified specific CSA projects engaged in various forms of cooperation. In four cases, we conducted additional expert interviews (Bogner et al. 2009) with representatives of the CSA projects and corresponding

¹ The aim to create a café ambience for an open but intimate discussion is what gives the "world café" method its name. It is a participatory approach that "accesses the views and knowledge present within a larger group of people" (Löhr et al. 2020: 1).

² One conference of the formal German rural development organization dvs (*Deutsche Vernetzungsstelle Ländliche Räume*) and another conference of the non-formal actor CSX network, which seeks to transfer CSA ideas to other business sectors.

ASPs. In a fifth case we co-designed (with a practitioner) a presentation on horizontal and vertical cooperation, using the method of social learning in communities of practice (Wenger et al. 2002). This was carried out as a webinar with question-and-answer sections. In total, our data collection consists of twenty empirical studies conducted with participants from approximately 90 CSA farms.

Apart from two events in the spring of 2020, the events and interviews in 2020 and 2021 were conducted online due to the CoViD-19 pandemic. However, we assume no bias effects on the process of data collection.

4 Analytical Framework

The three dimensions already outlined will now be further specified for the CSA context (Fig. 1):

- (1) Who: Who is involved as an actor?
- (2) Why: What are the functions of the inter-organizational relation?

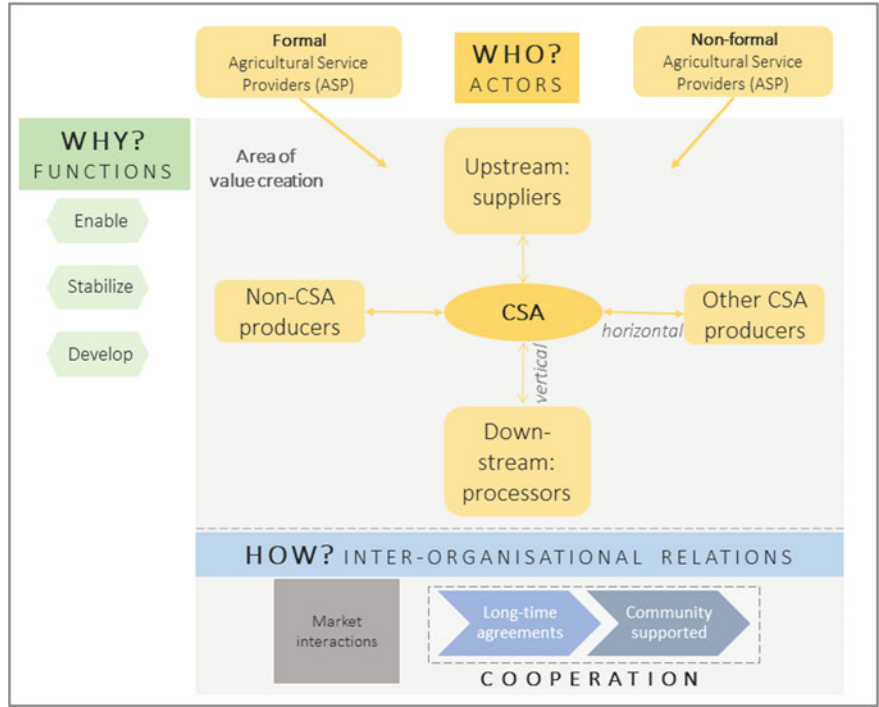


Fig. 1 The organizational field of CSA (authors' illustration)

- (3) How: What forms of inter-organizational relations are involved?
- (1) Inter-organizational relations occur either vertically along the regional value chain³ between CSAs and suppliers (upstream) and consumers (downstream), or horizontally between CSA projects and other food producers in a region (organized either as a CSA or as an ordinary producer). Apart from vertical or horizontal interactions, recent research has assigned ASPs a significant role in advocating for and supporting CSA (Paech et al. 2021). ASPs act as change agents (Rogers 2003), incubators, intermediaries, catalysts or mediators, and support CSAs with specific services such as consulting, networking or access to financial capital. ASPs can be either formal institutions in politics and administration, especially at the local level, or informal initiatives from the NGO sector or civil society, as well as businesses.
 - (2) The present study focuses on three functions performed by inter-organizational relations between CSA and other actors.
 - (a) **Enabling** | Procurement of resources: For CSA actors looking to offset the economic disadvantages of a transformative economy, cooperation, respectively external support is a viable option. Resources can help a farm business to acquire acreage, capital, skills, a public profile, and other factors of production. This function is particularly important in start-up processes.
 - (b) **Stabilizing** | Stabilization of operations: The survival of CSA farms depends on mastering a specific situation involving three potentially conflicting goals. The first of these is to survive economically in the face of size and technology-related cost disadvantages. The second is to safeguard the social stability of the construct, especially since non-hierarchical structures and the need to coordinate informal workers can be very time consuming, which reduces productivity. This problem increases with the number of people to be coordinated, i.e., the size of the CSA, which consequently cannot exceed a certain size. This in turn means that the minimum size required to cover costs may not be achieved. Should those involved consider implementing processes of professionalization to resolve this trade-off, the transformative character of the CSA farm is in danger, because professionalization usually means a return to hierarchical structures and a traditional business logic. Cooperation can overcome this conflict by enabling not just experiences to be shared but also the procurement of otherwise cost-intensive advisory services.
 - (c) **Developing** | Development and innovation: The joint development of new farm products as well as the optimization of farming processes also

³ Being a multifunctional actor, CSAs' value chains incorporate not only food but also other "products", such as education, as when CSAs intentionally serve as a place of learning. In this case, schools or other educational institutions can also be regarded as regional partners in the value chain.

highlights the advantages of cooperation between CSAs and other transformative forms of business. This can also mean establishing permanent regional supply networks based on the presence of food providers and processors whose activities complement one another mutually. Joint public relations campaigns could be another measure for a supply strategy to strengthen organizational resilience. This also requires those involved to join forces in favour of radical transition in the agricultural sector.

- (3) The form and degree of inter-organizational relations may differ due to the concrete relationship of the participating members, the amount of information sharing, and the overall level of involvement (Mittal et al. 2017). In contrast to market interaction, long-term agreements involve direct relationships, long-term and stable forms of interaction, and a continuous process of direct communication (e.g. agreements about quality and fair pricing for organic seed production and long-term supply).

Against this backdrop we propose the term community supported cooperation (CSC) to refer to a level of collaboration which may fully circumvent the market's price mechanism. The actors involved remain independent and do not pay for a specific product, but jointly finance production and also share the associated risks. We assume that this kind of cooperation has the greatest transformative potential for enacting the shift toward regional resilience and food security. For this reason, our study focuses especially on CSC relations by presenting examples that are organized in this way.

5 Results

In the following, we analyse empirical observations within the organizational field of CSA. Although cooperation is not yet a dominant strategy, it is certainly an emerging phenomenon. We found cases of vertical and horizontal cooperation between CSAs as well as cooperation between CSAs and ASPs.

5.1 *Vertical Cooperation*

Most CSA farms buy seeds from specialized traders with organic standards. Depending on the plant type, many CSA farms (such as some in the federal state of Hesse and some near Bremen) also manage their own seed stock by producing seeds from the previous generation of crops. In addition to these common seed procurement methods of either market interaction or individual seed production, the German CSA network is in the process of setting up a seed sharing system, organized as CSC by and for the participating CSA projects. This potentially lowers production costs and places a key emphasis on greater sovereignty in farming. As well as enabling farms

to operate autonomously from the seeds market, seed share systems are potential hubs for higher levels of biodiversity in that they encourage growers to conserve old varieties and acquire seed production skills to develop new CSA practices. Seed saving and sharing can be a means to disseminate CSA principles along the value chain, as the example of “community-based plant breeding”, a form of open source seed production, shows (Kotschi et al. 2020).

Another significant input to the value chain, labour, is related to a further CSC model: several CSA farms have formed regional networks that provide self-organized, independent training in vegetable growing. The trainees work on cooperating farms and form annual training groups to conduct modular seminars and exchange knowledge. Conducted in cooperation with the national CSA network in Germany, this training is organized by the trainees themselves in response to a high demand for CSA qualified staff and enables the general development and diffusion of CSA.

Downstream operations in the value chain, such as the processing or manufacturing of products, serve to diversify the range of products, to preserve food for the off-season and to manage the occasional case of over-production. Varieties of pesto, jam and salsa are typically produced within CSAs. In terms of inter-organizational relations, bakery operations, for example, remain an exception. A farm in the Palatinate region that has become a CSA already had its own bakery, which is still partly separated from the CSA. This is necessary because there is too much grain to supply CSA members exclusively. Therefore, the bakery additionally sells its products directly to consumers. However, this apparently pure market approach has been slightly adapted by integrating certain CSA-derived elements, namely, the bakery provides bread exclusively on a pre-order basis with specified weekly pick-up days. Thus, in addition to influencing the customers’ consumption behaviour, the bakery reduces its own operating costs by being able to predict the required production and by employing fewer staff.

In the region of Freiburg in the southwestern corner of Germany, a CSA farm has implemented CSC with a local community-supported bakery, which provides a weekly share of bread to their members. The CSA produces various types of grain for the bakery at a fixed amount on an agreed area, accounting for 80% of the CSA’s crop production. Through this CSC the bakery can state its preferences to the farmers regarding the types of grain to be grown. In addition to gaining a reliable trading partner, the CSA farm benefits from an additional element of financial security in the case of crop failure. The community-supported bakery benefits to some extent from the pick-up point structures of CSAs in the region. In addition, some of those involved work in both community-supported organizations. This demonstrates the synergy of actors and the potential of CSC within local value chains and AFNs.

5.2 *Horizontal Cooperation*

The spectrum of inter-organizational relations in CSA ranges from market-based solutions to long-term contracting and CSC endeavours such as multi-farm CSA set-ups.

The rising number of CSAs in Germany highlights the potential for expanding a CSA's product range by engaging in new forms of regional cooperation. Many of these forms of cooperation fall short of our definition of CSC but nonetheless use pragmatic ways of establishing long-term agreements. Although there is still hardly any cooperation in the area of production among CSAs located near one another, we were able to find one example. Here, two farms share their machinery and food crates as well as, in some cases, their workers – without financial compensation – and thus mutually strengthen their organizational resilience. A more common practice consists in directing those interested in becoming a member of one CSA to the neighbouring CSA if the first one is unable to offer them membership. This cooperative practice stabilizes the economic viability of both CSA farms. In contrast to the principles of solidarity found in CSAs, competitive relations may also occur between them. One example was a potential conflict in a part of northern Germany in which a comparatively large CSA felt threatened by a CSA start-up that intended to become similarly large or even larger.

To illustrate multi-farm CSA set-ups, we present two examples of CSC between several farms forming a CSA, one near Kiel (northern Germany) and one near Nuremberg (south-eastern Germany). In the Kiel case, members receive a range of products from several farms. The joint operations of these farms are financed by a single common solidarity-based pricing mechanism that includes all the members. In the Nuremberg case, the members themselves decide which products they would like to receive in return for their financial contribution. The CSA merely provides the organizational framework in the form of an online platform via which several local farmers offer their products to the CSA community on the basis of different partnership models.

After the initial start-up phase, the issue of extending a CSA's product range through cooperation becomes increasingly relevant. In addition to receiving their weekly share of the harvest, it is common for several members of a CSA to jointly order specific products such as coffee, cooking oils, or even non-regional fruit through direct purchase or via CSC. In the case of the CSA near Nuremberg, members can order products such as animal skins or asparagus from specific local farmers and citrus fruits from an Italian CSA. These orders generally follow a market-based logic. However, regular interaction and personal contact to the producers reduces both sides' dependency on fluctuating market mechanisms. In addition to these specific purchases, the CSA has established a subscription model for bread products by cooperating with a local bakery. This demonstrates that CSA does not rule out selective market interactions. One of the organizers justifies this combination of market-based relations and a separate community-supported structure in terms of the partnership

between a CSA farm and a non-CSA business having the potential to spread CSA principles more widely.

Another CSA project near Stuttgart has implemented a food co-op in the form of an online shop exclusively for its members, involving a long-term agreement between local farms and the CSA members. In addition to the regular range of vegetables they receive, all the CSA's members can buy additional products such as cereals, bread, lamb meat or herbal teas from certain local farms on a quarterly or monthly basis. In order to share the risk collectively with the cooperating farmers, additional products need to be ordered beforehand and are available through the pick-up point structure on a specific date. Even though the cooperating farmers do not distribute their products exclusively via this channel, they benefit nonetheless from certain CSA principles: a more stable income and a steadier demand that makes production planning easier. This form of cooperation through networking also helps CSA principles to be diffused throughout the region.

5.3 *Agricultural Service Providers (ASPs)*

A third level of relevant interaction is the support of institutions that can be described as agricultural service providers, or ASPs. Our studies revealed a broad range of ASPs that either serve—or (from the CSA practitioners' point of view) should serve—CSAs. We highlight just a few of them as examples.

As a non-formal ASP, the German CSA network offers largely free management consultancy, arranges support in the case of specific challenges, and facilitates contacts to longstanding pioneering CSAs for the purpose of exchanging information and gaining inspiration. Food policy councils are also helpful partners when it comes to providing coordination, networking, lobbying and initiating services: they can facilitate dialogue and offer a platform through which AFN-related actors such as CSA farms gain greater publicity and attract new members or consumers. We found a promising example of an ASP in western Germany, known as *Regionalwert*, or "local value". This organization promotes regional and organic businesses, mediating between local food initiatives and ethically-oriented investors. It cooperates with several CSAs in the region, supporting them in various ways. With regard to the procurement of resources, for example, *Regionalwert* organizations have become involved in (a) investment in and leasing of land, (b) the provision of capital for farm buildings or smaller investments such as greenhouses, (c) support with staff recruitment, and (d) the facilitation of pick-up points for members. These measures, along with the dissemination of information through the *Regionalwert* network, help to stabilize CSA operations. When a CSA has harvest surpluses, the network is used to advertise for new members. It serves as an intermediary that sounds out potential partners for vertical or horizontal cooperation. CSAs also benefit from the public relations work done by *Regionalwert*, which seeks to increase demand and to improve regulatory conditions for local food provision. In terms of development and innovation, one local *Regionalwert* organized a start-up process in which an existing farm

was reorganized to become a CSA farm. This farm was supported through an intensive consultation process. Holistic approaches of local ASPs such as *Regionalwert* are still an exception. Nonetheless, they serve to manifest the potential of co-creating entire regional AFNs.

6 Discussion

In our study we assessed the potential of regional cooperation to support the stabilization, diffusion and development of CSA, assuming that this leads in consequence to a greater degree of regional resilience, food security and food sovereignty. Our findings show that there are significant and increasing efforts among German CSAs to engage in cooperative relations with other actors in their region. This finding is similar to those of other studies that have looked at the development of CSA in other countries. Naturally, our study entailed a number of methodological restrictions that need to be discussed and considered when designing further research.

6.1 *Effects of Regional Cooperation*

Our findings support previous research (Galt et al. 2012), namely, that inter-organizational exchange enables a more comprehensive supply of food products within CSA projects, making them more attractive to (potential) members. Regarding product diversification, on-farm production depends on the CSA members' willingness to cover the additional costs or engage in voluntary work. However, the latter option generates internal transaction costs (whether financial or otherwise) due to the need for coordination. Our findings imply that these additional transaction costs should not outweigh the cost savings of volunteer labour.

When a CSA farm cannot produce a sufficient range of products for its members, sourcing products on the market is usually done only as a last resort, because it is generally seen as contradictory to the aim of overcoming market mechanisms. Cooperation with other AFN-related producers therefore seems an obvious solution. Yet our study shows that in many cases market-based relationships still seem necessary. Further research is needed to assess whether CSA members think this corrupts the idea of CSA and should be avoided or whether they see it as a "necessary evil" that helps farms to survive.

Regarding the unique institutional arrangements of CSAs, economic risks are shared among the CSA's members, whose financial contributions (the farms' revenue) are pledged in advance and serve to secure the farms' financial situation. Remarkably, the same goes for CSC with other partners along the value chain. This proves that risk-sharing in the context of CSA occurs not only in B2C but also in B2B partnerships.

Our findings also indicate that long-term agreements tend to convert into CSC over time, generating the most striking resilience-related impact of regional cooperation.

CSC enables production that would otherwise be uncompetitive in the free market. This applies, for example, to seed production and traditional bakeries that source their grain from local farms and are systematically displaced by convenience bakeries supplied from outside the region. When CSC is not possible, the second-best option seems to be some other way of working together or even sourcing products from the market, provided that this is done in a way that does not fundamentally contradict the CSA concept or alienate the members (some of whom may cancel their membership).

It is possible to identify various functions of ASPs in the CSA context: ASPs enable CSAs to become established by providing land, capital, (material) infrastructure, knowledge and public relations support. They also help CSAs to handle issues of organizational stability and to develop themselves further by initiating dialogue within a wider network. They also offer professional consultation. However, it turns out that the ASPs (especially formally constituted ones) potentially most suited to take on these roles do not yet do so. Our findings indicate that support from formal ASPs could potentially lift CSA out of its niche.

6.2 *CSA Cooperation Outside Germany*

Looking to the international context, examples of regional cooperation through CSA are found in many countries (European CSA Research Group 2016). At a time when the German CSA network had not even been founded, the development of CSA in the United States had advanced so far that cooperation between several CSAs was widely practised. A handbook for multi-farm CSAs was published in 2010 to provide producers with the “how-to’s and nuts and bolts of setting up and operating a cooperative CSA” (Perry and Franzblau 2010: 1). A historical view suggests that regional cooperation is part of the core of the CSA concept, as “[b]oth of the founding U.S. CSAs were multifarmer operations, with several growers working together on a shared piece of land” (Perry and Franzblau 2010: 17). A 2012 study of horizontal cooperation between several CSAs lists a variety of positive impacts: the ability to better meet consumer needs, to stabilize farms, to foster regional social cohesion and organic quality (Flora and Bregendahl 2012). A more recent study of CSA in the US shows that cooperation potentially increases the distance between producers and consumers (Woods et al. 2017). Finding ways to prevent this loss of direct connection seems essential for CSA farms engaging in regional cooperation.

Japanese CSA groups (known as teikei farms) offer a surprising example of the possibilities for horizontal cooperation. In the face of the 2011 Fukushima nuclear accident, teikei farms found a way to “handle radiation risks through cooperation from teikei partner farmers” (Kondoh 2015: 151).

Regarding the role of ASPs, the case of Austria provides an interesting example: “Since 2014 there is cooperation between the organic farmers’ association, Bio-Austria, and the federal government of upper Austria to actively inform farmers and consumers about alternative food networks like foodcoops and CSAs” (European CSA Research Group 2016: 14).

6.3 *Limitations*

Our research is subject to limitations. Qualitative research provides no robust basis for fully representative findings. Furthermore, we did not capture the entirety of CSAs in Germany, which further reduces representativeness. In addition, our sampling method of self-selection has the disadvantage that it only targets certain people and thus does not allow for variance maximization (Patton 2002). However, it can be assumed that the large number of surveys conducted in different contexts sufficiently reduces this bias. Supplementary studies have already started, in particular a comprehensive quantitative survey of all CSAs in collaboration with the German CSA network. An additional evaluation of the finalized framework by practitioners is planned as well.

Finally, further research could usefully explore whether the inter-organizational relationships we have examined can also be applied to cooperation with ASPs. Our research suggests that inter-organizational cooperation promotes greater regional resilience. It makes sense to test this supposition by means of a quantitative study of the ecological, social and economic effects of regional cooperation. The importance of CSC should not be overestimated given that on-farm production, regular buyer–seller relationships, and long-term agreements are typically used to establish an acceptable range of products. Although our research was less focused on continuing competitive relationships, these are still relevant. Further research based on studies in the US (Galt et al. 2016) could usefully supplement our analytical framework.

7 Conclusion

Our analysis suggests that regional cooperation affects the development and diffusion of CSA. It promotes (1) its stabilization, (2) its diffusion, and (3) a more extensive coverage of regional food supply. In this way it contributes systematically to an increase in regional resilience generally (considering its effects on awareness-raising, social cohesion, etc.) while specifically promoting food sovereignty in a qualitative sense and food security in a quantitative sense.

Beyond normative orientations in terms of ecology, social integrity, resilience and democratic participation, the cooperative relationships in the area of procurement highlighted in the present article open up two further economic perspectives. At least in the food sector, a return to small and decentralized structures of production seems possible. These have previously been associated with models of perfect and atomistic competition. In the context of the market economy, such cooperative relationships have been ascribed a high welfare-increasing impact based on the benchmark of efficiency. Oligopolistic or monopoly markets, on the other hand, have been said to have welfare-reducing tendencies due to cooperation (in particular price and quantity agreements) being used to exercise market power. Surprisingly, this dichotomy of welfare and competition theory is turned on its head twice by CSA: small production units are systematically predestined to establish cooperation in order to survive, and

at the same time this generates the highest conceivable welfare effects. Is it possible that CSA constitutes a decentralized and sustainable model of food provision that is not only viable (despite its small production units) but can also defy competitors by enabling cooperation that acts as a substitute for economies of scale?

Thus, mutual cooperation as part of a network could enable entrepreneurial “Davids” to successfully confront overpowering “Goliaths”. The fact that more and more examples of CSC exist can inspire the emergence of new CSAs as well as closer cooperation. This strategy is reproducible, yet depends on idealistic individuals or groups capable of putting the concept into practice despite the difficulties involved.

In addition, ASPs could act as promoters of both the development of CSA and their mutual cooperation. Chambers of Agriculture and similar authorities could act as change agents to promote emergence and diffusion processes, not only of CSA in particular, but of AFNs in general. If (European) agricultural policy were to focus on such a strategy of small units, for example by financing a network of ASPs, a resilient and sustainable food supply might possibly be achieved with a fraction of the current budget.

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