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# Do sustainable food system innovations foster inclusiveness and social cohesion? A comparative study

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**Introduction:** Existing food systems are not only responsible for severe environmental damage, but also face pressing social challenges, with people having uneven access to safe and healthy food, good working conditions, and political participation. These socio-ethical aspects play a key role in successful food transitions. So far, aspects of social cohesion and inclusiveness within social food innovations have rarely been analyzed in more depth. Many social innovations have emerged over the last few decades, such as land cooperatives, farm leasing models, community-supported agriculture, or citizen shareholder companies. Expectations towards these financing models vary from facilitating more investment in a sustainable and socially responsible agri-food sector and a shift towards more local food to the creation of transparent relationships between food producers and consumers.

**Objectives:** It is against this backdrop that this paper compares three different food innovations—citizen shareholder companies, community-supported agriculture, and food co-ops—regarding their inclusiveness, the degree of member involvement, and the quality of experienced connectedness.

**Methods:** Empirically, this paper draws on quantitative and qualitative data, including an online survey, two focus group discussions, and a broad literature search.

**Results:** Findings reveal that all food innovations show a rather low level of inclusiveness, although efforts are being made to overcome barriers to access. Food innovations generate social cohesion between different actors along the value-added chain, which is constituted differently in a more service-oriented versus a community-oriented model.

**Discussion:** Overall, these innovations provide key momentum towards the dominant food regime by rewarding producers for sustainable practices, establishing stronger producer–consumer relationships, and motivating consumers to assume shared responsibility. Based on the different approaches adopted, we consider the food innovations as complementary for food system transitions.

## KEYWORDS

social innovations, inclusiveness, social cohesion, citizen shareholder company, community supported agriculture, food co-ops, food system transition

## Introduction

The need to introduce changes to the global agri-food system is widely recognized since it is not only responsible for severe negative impacts for the environment, but also faces pressing social challenges, with people having uneven access to safe and healthy food, good working conditions, and political participation (IFPRI, 2020). These environmental and social imbalances are also captured by the United Nations Sustainable Development Goals, which call for an inclusive food transition to improve people's access to food, promote sustainable agriculture, and empower consumers (FAO, 2017).

There are different ways to initiate food system changes. Aside from reshaping the political or economic context of food systems, or counting on technological solutions, a growing body of studies highlights the importance of social innovations that focus on closer collaboration between producers and consumers (Smith and Seyfang, 2013; Jaeger-Erben et al., 2015; Moulaert et al., 2017).

Many of these social innovations have emerged over the last few decades in the form of land cooperatives, farm leasing models, community-supported agriculture, food co-ops, or citizen shareholder companies addressing the challenges of today's food systems. Expectations toward these financing models vary, ranging from increased investment in sustainable and socially responsible agri-food businesses (Behrendt et al., 2022) and a shift toward more local or regional food (Preiss et al., 2017) to the creation of trustworthy and solidarity-based relationships between food producers and consumers (Partzsch, 2018). These new institutional arrangements also show promise with regard to turning consumers into food citizens who actively take responsibility for the transformation of existing food systems (Renting et al., 2012).

In a recent and highly comprehensive literature review on sustainability transitions, Köhler et al. (2019) plead for greater recognition of socio-ethical aspects, including questions of accessibility and cohesion, in innovation processes. Although some research on food system transitions already exists that addresses these aspects, in large part, these studies only discuss social food innovations in terms of challenging social issues (poor food access, malnutrition, and inequalities) (Kirwan et al., 2013; Allen et al., 2017) or promoting inclusive participation and empowerment in reconnected food value chains (Renting et al., 2012). So far, hardly any research has analyzed the importance of the quality of relationships in, and accessibility of, social innovations for sustainable food transitions.

To address this shortcoming, this paper compares three different food innovations regarding 1) their inclusiveness, specifically in terms of ensuring equal opportunity to participate, and 2) their contribution to social cohesion, including a) the level of active involvement and b) connectedness among

members, capturing the quality of social relations within the social innovation (including relationships between involved consumers as well as between consumers and actors further along the value-added chain). In our discussion, we will consider the importance of inclusiveness and social cohesion in social innovations for food system transitions.

The cases of interest in this study are citizen shareholder companies (CSCs), community-supported agriculture (CSA) initiatives, and food co-ops. Each represents a social innovation that provides financing for sustainable agriculture and local production. These cases were chosen as they demonstrate various modes of producer-consumer cooperation and operate at different levels of the food system. The findings on CSCs are derived from our own empirical data (online survey, qualitative focus groups), while findings concerning the two other innovations are based on a broad literature search.

The following section introduces the key concepts of social innovation and food system transitions as well as inclusiveness and social cohesion, before we go on to describe the methods used for collecting and analyzing our empirical data. In our findings section, a brief overview of the food innovations (CSA, food co-ops, and CSCs) precedes an examination of the innovations' inclusiveness, degree of involvement, and connectedness. The final section discusses the implications of our findings for current research on social innovations in food transitions. The conclusion provides a reflection on the limitations of the study and several suggestions for further research.

## Theoretical background

### Social innovations in food system transitions

Research on food system transitions explores socio-technical pathways and innovative shifts in production and consumption systems and practices (Hinrichs, 2014). Considerable attention is given to the role of social innovation as a driver for the transition toward sustainable food systems (Bock, 2012; Smith and Seyfang, 2013; Moulaert et al., 2017).

The literature on food transition offers numerous definitions of social innovations. For our purposes, two frequently referenced approaches are considered. A first definition is based on the innovations' socially beneficial contributions toward sustainable development. It emphasizes the functional character of social innovations as they purposefully create novel solutions and enable structural improvements at a large scale (Moulaert et al., 2017). A second and more sociological-oriented approach defines innovations in a less normative but rather analytical sense. For instance, Howaldt and Schwarz (2010) describe social innovation as a "new configuration of social practices [...]" (22)

including organizational forms, understandings, and structures of social relationships as true alternatives to established routines (Jaeger-Erben et al., 2015).

Transition studies identify food innovations' varying potential to contribute to changes in current dominant food systems. From this point of view, the diffusion of innovations follows a path from protected niche-spaces<sup>1</sup> to the food regime<sup>2</sup> (Hinrichs, 2014). The velocity and vigor of innovation processes depends on their potential to react to current pressures exerted by the dominant food regime or market failures.

Our understanding of diffusion is grounded in transition research and refers to the development of social innovations "along three potential routes" (Seyfang and Longhurst, 2016, 4). Firstly, innovations scale up, for instance, through an increase in membership, market shares, sales, or activities. Secondly, they advance into other geographical regions or through the multiplication of similar initiatives in different social contexts. Thirdly, innovations are translated into the dominant regime and are (partially) adopted.

In accordance with Ingram et al. (2015), the diffusion of innovations depends on niche-regime interactions and their compatibility with the rationales and rules of the incumbent food regime. While incremental innovations are likely to diffuse rather quickly, this is more difficult for radical innovations. Additional factors that impact the unleashing of transformational potential are organizational capabilities (using existing networks to gain access to additional resources), communication strategies, available finances, and formal decision-making structures (Wunder et al., 2019). Another crucial factor is whether social learning processes are initiated and sustained among those involved. In transition research, it has been emphasized that social innovations increase their transformative capacity if knowledge is exchanged, people learn from each other and experiment with alternative practices and organizational forms (Loorbach et al., 2017). Köhler et al. (2019) underline the normative need for a stronger integration of a socio-ethical dimension in research on sustainability transitions. Some studies focusing on food system transitions have highlighted the role innovations play in responding to societal and distributional issues. This includes, for example, improving poor food access (Kirwan et al., 2013), diminishing malnutrition (Allen et al., 2017), or combating power imbalances in food value chains (Renting et al., 2012). Other studies are more concerned with enhancing the quality of social relations, creating pathways

for more participation in food value chains, and sustaining a stronger connectedness of consumers (Papaioikonomou and Ginieis, 2017). Social innovations in the context of urban food movements are emphasized for their ability to foster community engagement, solidarity, and political empowerment, which transforms the traditional role of the passive consumer into a more proactive one (Renting et al., 2012).

The analysis of the role that particular food innovations can play in integrating people and supporting their relationships makes it possible to assess their potential to target food justice concerns and foster cohesion, but also to reflect on their transformational capacities to contribute to food system transitions. However, so far, an analytical view on building social cohesive relations in social innovation processes, as well as the extent of their inclusiveness for food system transformation, remain, for the most part, unexplored.

This paper addresses these gaps by comparing different food innovations in terms of their capacity of to ensure equal opportunities for people to participate (inclusiveness), members' involvement, and the quality of interpersonal relationships between the members and with other actors from the value-added chain (social cohesiveness).

## Understanding inclusiveness and social cohesion

This paper draws on a concept of inclusiveness put forth by Talmage and Knopf (2017) to characterize one of the qualities of social food innovations. The authors describe inclusiveness as an indicator for the wellbeing of communities that provide equal opportunities for people to fully participate in or directly benefit from the community. Furthermore, inclusiveness is introduced as an outcome of inclusion processes, which strategically "leverages human diversity" (IBID, 9). Diversity itself highlights the socio-cultural and economic differences of members, which are seen as the resources of any community. Applied to our analysis of food innovations, inclusiveness builds on reaching out to a broad segment of the population without—explicitly or implicitly (e.g., due to their communicative, cultural, or socio-economic focus)—excluding any groups of people.

Foremost, the opportunities people have to participate in food innovations are related to the unequal distribution of individual resources (Schiefer and van der Noll, 2017). In other words, there is a risk that people with limited resources will be excluded. This could apply to those who do not possess the financial means, prior experience, or knowledge or who are lacking relevant social contact and support (Hinrichs and Kremer, 2002). Aside from these economic and social constraints, cultural aspects such as language, taste, or habits might also be decisive when it comes to addressing people in a way that incentivizes their participation (Galt et al.,

1 Niche spaces provide a protected environment where innovations are not obliged to operate under competitive market conditions. They might also receive support from incubator structures, public funding, research, or state subsidies (Hinrichs, 2014).

2 The concept of the food regime refers to currently dominant institutions, norms, and practices in which food is produced and consumed (Brunori et al., 2010).

2016). Moreover, participation opportunities can depend on spatial aspects, specifically the geographical accessibility of food innovations, which can become a barrier for less mobile people who live in remote regions with poor infrastructure (Markow et al., 2016). Voluntary involvement in food innovations might entail a considerable time investment, which, again, excludes those with limited time resources.

We are also interested in the concept of social cohesion with a specific focus on the quality of social relationships. Social cohesion receives considerable attention as a subject of ongoing social sciences research and also features prominently on government agendas, yet a consistent definition is still lacking. From a more general point of view, social cohesion refers to the connection of societal units and describes how “people in a society ‘cohere’ or ‘stick together’” (Chan et al., 2006, 289). Theoretically, it can be further understood as a multidimensional concept that includes several somewhat overlapping components. Those components relevant for this analysis will be presented below.

Following the arguments of Schiefer and van der Noll (2017), as well as Dragolov et al. (2016), social cohesion consists of a relational dimension, which can be broken down into the quality of relationships and interactions that people have on the group level. The mutual benefits of these connections are captured by the notion of social capital that facilitates cooperation among individuals for getting “things done” (Putnam, 2007; 138). Furthermore, cohesive social relations require a certain level of trust, which is viewed as people’s “expectancy that others’ behavior is predictable and is in principal lead by positive intentions” (Schiefer and van der Noll, 2017; 586).

Another important aspect of the relational dimension of social cohesion is active involvement. People can become more or less involved and in many different ways: from civic participation in social and pro-environmental organizations to activism in political food movements. Active involvement not only requires that people are personally committed, but also that they feel responsible for a common good while putting private interests aside (Chan et al., 2006).

Being part of a living community where people assume responsibilities for one another can lead to a sense of belonging and connectedness. Schiefer and van der Noll (2017) subsume this identification process under an ideational dimension of social cohesion. However, connectedness can also be conceptualized by linking it to the proximity concept, which is widely applied in innovation research and in literature about changes in producer–consumer relationships through Alternative Food Networks (AFN) (Edelmann et al., 2019; Gugerell and Penker, 2020). Referring to this concept, a first form of connectedness emanates from social proximity, which is based on personal connections, implying also informal communication and knowledge flows. Aside from the personal closeness of a supportive and tight-knit community, connectedness can also result from identifying with regions and

physical landscapes. This refers to a spatial view of community. Because long distances make face-to-face interactions or attending events more difficult, personal communities are highly dependent on close geographical proximity between members and places (Haney et al., 2015; Gernert et al., 2018). Lastly, connectedness can also result from common rules and practices as well as from shared values and understandings that are both reflected by the notion of either formal or informal institutional proximity. Due to the pursuit of common goals, members give a sense of purpose to their involvement, which is a major factor in identifying with the community (Papaoikonomou and Ginieis, 2017).

In our study, and on the basis of our theoretical considerations, we analyze and compare the level of inclusiveness and the generation of social cohesion by different social innovations. Table 1 provides a condensed overview of these concepts. The paper pursues the following research questions: Who participates in this type of social innovation, what are the access barriers, and which strategies exist to increase inclusiveness? To what extent are members involved and which responsibilities do they assume? How can the relationships within these initiatives be characterized and what is the basis for members’ feeling of connectedness?

## Case selection and methods

To study the aforementioned dimensions of social cohesion and inclusiveness in food system transitions, this paper compares the characteristics of three different food innovations. The empirical analysis mainly focuses on citizen shareholder companies (CSC) in Germany and compares these with two other social innovations: community-supported agriculture (CSA) and food co-ops. These cases were deliberately selected in accordance with several criteria. We needed to narrow down our search to cases that fall under the definition of food system innovations. All three selected cases aim for a sustainable food system transition and foster an alternative form of producer–consumer cooperation, while also addressing deficits in the food sector, including financing organic agriculture and establishing regional value chains. In line with our intention to compare different social food innovations, these cases represent various models of how consumers are involved in financing sustainable agriculture and supporting local producers. They differ in the level at which cooperation takes place (CSA: farm level; CSC and food co-ops: regional level). Since empirical analyses were only carried out for CSCs, we relied on available literature to conduct a comparison with the other two models. This was not the case for innovations such as land cooperatives or farm leasing models, and they have thus not been included in the comparison.

The results on CSA and food co-ops are based on secondary information from literature, which is a limitation of our comparative approach. Results may vary due to

TABLE 1 Applied dimensions and research questions.

Theoretical concepts	Applied dimensions	Research questions
Inclusiveness	Economic, social, cultural, and spatial inclusion/exclusion	Q1: Emphasis is put on who takes part in the social innovations, existing barriers, and strategies for inclusion.
Social cohesion – Involvement (Relational dimension)	Degree of involvement and uptake of responsibilities	Q2: Emphasis is put on people's involvement and commitment to take shared responsibility for a common good.
Social cohesion – Quality of social relations (Relational dimension)	Social relations and trust	Q3a: Emphasis is put on the quality of relationships and trust building.
Social cohesion – Identification (Ideational dimension)	Connectedness based on geographical, social, and institutional/value-based proximity	Q3b: Emphasis is put on the connectedness.

heterogenous approaches to obtaining data or can be affected by how “analytical concepts” are applied (Mills et al., 2006). Although we were careful to choose comparable literature (see below), this study does not aim to provide “best equivalency,” but intends to use CSA and food co-ops as a reference point to gain insights into the heterogeneous field of food system innovations that target social issues.

In the empirical analyses of CSCs, we applied a mixed-methods approach. This included an online survey as well as two focus group discussions (Kuckartz et al., 2009; Schulz et al., 2012). In line with a transdisciplinary research tradition, we initially approached the CSC officials and made a request to study their social innovation as one of our case studies. During research, the interests and perspectives of the CSC officials were taken into account and integrated into the design process. Based on the presentation of the empirical findings, their interests to develop their innovation toward higher inclusiveness and cohesion were discussed.

The quantitative data were gathered through an online survey of the shareholders of three regional CSCs between May and October 2021. Following our sampling approach, we contacted all CSC groups regarding the survey, but only the three groups in our analysis responded. When we conducted our survey, the selected CSCs were among the four largest regional groups in Germany in terms of shareholder numbers. They had also existed for at least 3 years and were still growing, while the other CSC groups were recently founded. A total number of 416 out of 2,338 contacted shareholders participated in the survey, which equals a respondent rate of slightly under 18%. Also considering the interests of the CSC officials, the questions focused on social cohesion dimensions (see Table 1) including the shareholders' initial motivation to buy shares, their preferences for information exchange and involvement, the quality of relationships and level of trust, their sense of connectedness as well as on what they had learned from participating in the CSC. To be able to analyze inclusiveness, a set of socio-demographic questions

on age, gender, living area, migration background, educational and professional qualifications, household size and income of shareholders was included. The data were analyzed by running descriptive statistics in SPSS. For the interpretation of findings, notes that had been taken from meetings with the CSC officials were additionally considered together with published reports and website information.

Furthermore, two focus group discussions with the shareholders of one CSC were carried out online in March 2022. Potential participants were randomly selected from a shareholder register to achieve higher diversity. The participants were assigned to two groups, which consisted of eight men and nine women. A short questionnaire, which had to be filled out in advance, showed us that the participants were of different ages (ranging between 30 and 70) and had been shareholders for varying periods, ranging from one up to several years.

The main purpose of the focus groups was to gain deeper insights into the main topics of the survey: inclusiveness and connectedness as well as quality of the relationships and involvement of the members. The discussions lasted two and a half hours. Both group discussions were videotaped and transcribed. The analysis involved a descriptive coding of the empirical material around the themes of connectedness, quality of social relationships, shareholder involvement, and aspects of in- and exclusion.

To be able to compare our findings on CSC with the two other food innovations (CSA and food co-ops), a broad literature search was carried out. Our search focused on literature that showed results on the socio-demographic background, motives, and values of members as well as the quality of relationships between members and cooperating entrepreneurs, and the degree of member involvement. The majority of articles referred to social innovations in Germany, Europe, or the US. Aside from online articles, this also included several book chapters and dissertations, a full-text search was conducted by using the databases of Google Scholar and Primo (the online catalog of TU Berlin). The following combination of search terms was used to identify relevant literature: “community

TABLE 2 Main characteristics of selected social food innovations.

	Citizen shareholder company (CSC)	Community supported agriculture (CSA)	Food co-op
<b>Function</b>	Financing organic agri-food enterprises based on social-ecological criteria	Securing the economic existence of organic farms by paying for weekly harvest shares in advance	Consumer-led cooperation that organizes collective food purchases
<b>Objectives</b>	Sustainable and regional food production, closing gaps in existing food value chains, solidarity-based relationships between producers and consumers	Supporting local and organic farming, providing access to healthy and high-quality food, democratic food control, closer producer–consumer relationships	Access to local organic and affordable produce, bypassing grocery chains, democratic food control, education
<b>Organizational and legal structures</b>	Joint stock company (AG) including board of directors (management), advisory board, and shareholders	Heterogeneity in terms of legal (“eG,” “GmbH,” or non-profit) and organizational models: service oriented, supportive, and self-organized	Heterogeneity in terms of legal (“eG,” “GmbH,” or non-profit) and organizational form as well as size
<b>Numbers</b>	Active in eight regions in Germany and one region in Austria, 3,000 shareholders, 100 cooperative agri-food enterprises, more than 10 million euros of share capital	Exists worldwide including 2,783 CSA farms in Europe and 400 CSA farms in Germany	Exists worldwide including 3,000 active food co-ops in Germany

supported agriculture” and “food co-ops” together with “socio-demographic,” “member,” “relationship,” and “community.” After an initial screening of the search results, we decided to reduce the number of publications based on their relevance to our research interest, publication date, and number of citations. Regarding indicators for inclusiveness, we only considered those studies that conducted member surveys and used the same standard socio-demographic variables we applied in our survey. In terms of the non-standardized qualitative findings on connectedness and involvement, we paid close attention to selecting and interpreting literature findings that had been conducted in an equivalent context (e.g., concerning size of innovations, location). A total of 37 documents were considered for analysis.

## Main characteristics of the selected social food innovations

### Citizen shareholder company

CSCs were initially founded in 2006 as an alternative to mainstream economic practices in industrialized agriculture (see Table 2). They aim to finance regional value creation and sustainable food production (Partzsch, 2018; Hiß, 2019). This is accomplished by selling shares to private investors (citizens) to finance sustainable food enterprises along the whole value chain, including organic farms, food manufacturers, stores, and delivery services. In their investment decisions, CSCs consider the social and ecological services provided by agri-food businesses instead of focusing on profitability and expected financial return. Another primary goal for the CSCs is to develop

regional economic spaces that close gaps in regional value chains, build shared markets, but also form new solidarity-based relationships between producers and consumers (Gothe, 2018).

CSCs are legally structured as joint stock companies (*Aktiengesellschaft* or AG), which means that they comply with national regulations and formal requirements regarding the German Financing and Stock Market Law (*Aktiengesetz*). These are similar to the regulations that apply to business models in other national settings, such as the “corporation model” in the US. All CSCs have a board of directors whose members are responsible for management tasks and a supervisory board that provides expertise from different fields. Despite the common goal and the similarities in their organizational structure, regional CSCs are run independently and make their own investment decisions. If a CSC becomes insolvent, shareholders cannot recover their investment.

As of today, there are CSCs in eight regions across the whole of Germany. There is one more CSC in Austria, but so far, the innovation has not expanded further into other national settings. Altogether, German CSCs encompass more than 3,000 shareholders, 100 supported enterprises, and around 10 million euros of share capital. After a relatively slow development phase that lasted into 2010s, a rapid increase in the number of CSCs has been observed in recent years (Regionalwert Impuls, 2022).

### Community-supported agriculture

As an alternative form of food production, CSA is characterized by a solidarity-based cooperation between consumers and local farmers. The idea behind CSA is that

consumers agree to pay for weekly harvest shares in advance so that the farmer is able to cover their business operation and labor costs. The concept was initially founded in Japan, Switzerland, and Germany in the 1960s, before further expanding to the US and, later, also to other European countries (Cone and Myhre, 2000; Ostrom, 2007; Schlicht et al., 2012.).

Today, a large number of CSA organizations exist worldwide, displaying a considerable heterogeneity in terms of their structure, size, operations, and legal forms [e.g., “eG, (registered cooperative)” “GmbH, (limited liability company)” or non-profit]. In accordance with Gruber (2020), three ideal organizational structures for CSA models can be identified (service oriented, supportive and self-organized), which are characterized by the workload and obligations to which members are committed.

Despite all of these differences, CSA is built on shared principles (DeLin and Ferguson, 1999; Schlicht et al., 2012). Organizations practice local and organic agriculture, including farming methods that protect biodiversity and soil fertility. They also aim to improve people’s food choices and diets by giving access to healthy and high-quality edibles (Flora and Bregendahl, 2012). Another intention is to enhance the role of consumers since CSA provides an opportunity for more participation and democratic control over food production (Ostrom, 2007). By reinforcing closer producer–consumer relationships, CSA creates trustworthiness and transparency, which establishes a basis for improved mutual understanding (Cox et al., 2008).

Overall, CSA models are quite popular and have expanded successfully in recent decades. In an EU-wide study, it was estimated that at least 2,783 operating CSA farms exist, which, during 2015, had supplied food to approximately half a million people (Volz et al., 2016). Researchers also expected the concept of CSA to gain more popularity in the following years. For Germany, the numbers point in a similar direction. The Network for Solidarity-Based Agriculture (2022) lists at least 396 operating CSA farms. This number indicates a substantial growth, especially when compared to the situation in 2010 when only 19 farms had officially been documented (see Schlicht et al., 2012).

## Food co-op

Food co-ops are jointly owned and also self-governed consumer co-operations that organize collective food purchases. Their activities range from collecting orders and buying mostly organic food products from regional farmers to distributing them among members (Rosol, 2020). The concept of food co-ops can be traced back to two different historical developments. The first mainly worker-owned cooperatives were formed as early as the 19<sup>th</sup> century to provide members with food at affordable prices (Knupfer, 2013). A second phase of food co-op formation was during the alternative food movement between

the 1960s and 1970s (Little et al., 2010). This renewed popularity of food co-ops resulted from a general critique of the “modern” food industry, intensive farming, and mass production. As a counterweight to the conventional forms of food production and consumption, these innovations aim at facilitating better access to organic and natural produce grown from local and small-scaled farms (Zitcer, 2015).

Today, food co-ops appear in different organizational and legal forms, but can also vary greatly in their size. They range from *ad hoc* purchasing groups based on informal agreements to professionalized producer–consumer cooperatives that comprise an entire network of producers, wholesalers, owned grocery shops, and other food-related stakeholders. An example of one of the larger cooperatives in Germany is the producer–consumer cooperative TAGWERK (2022), which runs several shops with regular employees.

Most current food co-ops pursue goals that are related to at least one of the following aspects: I) they are committed to ethical and organic, and thus sustainable, production and consumption; II) they bypass grocery chains aiming for cheaper food prices; III) their democratic and community-oriented structure is an avenue for civic action to reclaim control over the local food supply; IV) they pursue an educational approach that involves informing members, for instance, about healthy or sustainable food choices (Little et al., 2010; Opitz et al., 2017). According to the National Association of Food Cooperatives (BZfE, 2020), there are more than 3,000 active food co-ops in Germany.

## Findings

### Inclusiveness

The findings of the online survey with CSC shareholders point toward limited inclusiveness since the socio-demographic background of the shareholders is not representative of the German population. Table 3 shows a more or less balanced gender distribution, yet with slightly more male shareholders. Furthermore, the typical shareholder is in middle to older age groups. While almost all shareholders show a high level of education, there are almost no shareholders with a migrant background. What is more, the majority of shareholders live in larger cities and suburbs. When comparing these numbers with the socio-demographic data for Germany, it appears that younger people, people with a migrant background or a lower level of education as well as people living in rural areas remain underrepresented (see Table 3). Finally, the shareholders mainly belong to higher income groups: More than half of the shareholder households have an available net household income of €4,000 or more per month. On average, the shareholders have a net household income of €4,275 [compared to the average net household income of €3,681 in Germany (Destatis, 2022)].

TABLE 3 Socio-demographic data of shareholders and for Germany.

Socio-demographics	Characteristics	Total	Shareholders	%	Mean (SD)	Socio-demographics (Germany 2019–2022 <sup>a</sup> )	Numbers (%)
Gender	Male	414	236	56.7		Male	41.2 Mio (49.2)
	Female		174	41.8		Female	42.5 Mio (50.2)
	Divers		4	1		Divers	- <sup>2</sup>
Age in years	18–20	409	0	0	55.37 (0.67)	18–20	15.4 Mio (18.5)
	20–40		60	14.7		20–40	20.3 Mio (24.4)
	40–60		186	45.5		40–60	23 Mio (27.7)
	60–80		152	37.2		60–80	18.3 Mio (22)
	80+		11	2.7		80+	6.1 Mio (7.3)
Monthly net-household income in euro	up to 1,500	361	12	3.3	4,274.93 (85.623)	Average monthly net-household income in euro	3,681 (on average)
	1,500 to 2,000		21	5.8			
	2,000 to 3,000		57	15.8			
	3,000 to 4,000		80	22.2			
	4,000 to 5,000		58	16.1			
	5,000 to 6,000		55	15.2			
	6,000 and more		78	21.6			
Formal education	High school diploma	401	358	89.3		High school diploma	23.6 Mio (33.5)
	Secondary school diploma		39	9.7		Secondary school diploma	21.2 Mio (30)
	Lower secondary school diploma		4	1		Lower secondary school diploma	20.2 Mio (28.6)
Migrant background	Without	415	408	98.3		Without migrant background	59.5 Mio (72.7)
	With		7	1.7		With migrant background	22.3 Mio (27.2)
Living area	Larger city	415	207	49.9		Larger cities	32.7 Mio (39.4)
	Sub-urban		99	23.9		Sub-urban and medium or small cities	33.5 Mio
	Medium or small city		71	17.1			
	Rural area		38	9.2		Rural area	16.8 Mio (20.2)

<sup>a</sup>Destatis (2019, 2022).

Recent studies on German CSA farms and food co-ops indicate a similar socio-demographic composition of their members. Overall, their member structure reveals little diversity since most members are highly educated, economically advantaged, have no migration background, and live in cities or sub-urban areas (Blättel-Mink et al., 2017; Boddenberg et al., 2017; Diekmann and Theuvsen, 2019). However, there are differences in terms of gender and age structure. Studies on those food innovations point to a stronger representation of women and to a middle-aged membership that is on average slightly younger than in CSCs. Similar findings are shown by studies

from the US that analyzed the socio-demographic composition of members in CSA (Brehm and Eisenhauser, 2008; Haney et al., 2015; Galt et al., 2016) and food co-ops (Katchova and Woods, 2012; Zitcer, 2015).

There are many barriers to participating in this type of food innovation. For example, not everyone can afford to pay the subscription fees or shares. For CSCs, one share costs at least 500 euros, and CSA and food co-ops are also characterized by higher prices for organic food (Regionalwert AG Berlin-Brandenburg, 2022). However, a distinctive characteristic of food co-ops is that they usually offer organic food below market prices, which



makes them more attractive for members on small budgets. Co-ops can save money by buying in bulk, avoiding intermediate actors and obtaining wholesale prices (Little et al., 2010).

Besides economic constraints, the literature addresses further spatial and social-cultural obstacles in CSA and food co-ops, leading to the exclusion of certain groups of people (Kato, 2013; Papaoikonomou and Ginieis, 2017; Mert-Cakal and Miele, 2020). Firstly, studies point toward issues related to geographical distances. Some farms and depots in remote locations are difficult to reach, especially if people are less mobile or depend on public transport. Secondly, it is mentioned that a lack of know-how (Markow et al., 2016) or no prior experience with community activities could discourage people. For instance, Hibbert et al. (2001) identify a lack of self-efficacy as a hindering factor to becoming engaged in food co-ops as many do not feel confident enough to accept responsibilities in self-organized processes. Being unfamiliar with investment practices was also seen as an obstacle by the interviewed CSC shareholders. In both focus groups, the participants mentioned a lack of financial literacy and confidence as two important reasons that would particularly prevent women from becoming shareholders. This could be explained by the persistency of “traditional roles”: Shareholders in both focus groups reported the impression that men usually remain responsible for financial matters in relationships even if the woman had taken the initiative.

Thirdly, Galt et al. (2016) and Kato (2013) identify cultural barriers for joining CSA organizations; food co-ops might face similar hurdles. People have their own food preferences based on culinary traditions. Exclusion can thus occur, if the initiatives do not offer a product range that covers the heterogeneity of distinctive cultural tastes.

How do the analyzed food innovations respond to these inclusiveness-related challenges? One of the more important management activities of CSCs is to attract new shareholders who are willing to invest their money. However, we were unable to identify a strong intention on part of CSC management to become more inclusive. For instance, the management of two CSCs reported at a work meeting that they do not actively reach out to people from a diverse background due to having limited time. Therefore, CSCs mainly rely on a pragmatic approach that involves addressing well-known target groups, including “politically engaged people,” “young families,” and “passionate gourmets.” One of the CSCs had a significantly larger percentage of men among its shareholders. After we had shared the results with them, they showed considerable interest in addressing women more explicitly and asked for additional research in this field. Designing gender-specific focus groups was a response to this request.

Unlike the CSCs studied, there are many CSA farms that have purposively implemented inclusion strategies in order to challenge income barriers and reach the economically disadvantaged (Forbes and Harmon, 2008; Boddenberg et al., 2017). CSA initiatives advocate a concept of the solidarity-based

economy, which provides people with equal opportunities to participate regardless of their background. For instance, this is reflected in the common practice of “bidding rounds” among some German CSA organizations. Bidding rounds serve the purpose of collecting the sum of capital to cover the annual costs of the farm and the farmer’s income. However, it is left to the single members to decide how much they can afford to pay (Heyland, 2017). Other CSA models follow different approaches, which include financial charges based on members’ income, internal money redistribution, subsidized membership, or the donation of surplus food (Guthman et al., 2006; Forbes and Harmon, 2008; Flora and Bregendahl, 2012).

Similar to CSA models, food co-ops use several strategies to increase inclusiveness as one of their core principles is to provide healthy and high-quality organic products at reasonable prices (Brunori et al., 2010). For instance, references are made to reduced fees for deprived households or price discounts in exchange for voluntary labor (Zitcer, 2015). However, Zitcer (2015) also describes the disadvantages inherent to this form of volunteering. Even if voluntary work provided by members lowers prices and makes food more affordable, people who do not have any spare time, for instance, because they have small children or demanding jobs, are still excluded.

## Social cohesion

In this section, we examine the level of member involvement, including learning processes as well as their feelings of connectedness as dimensions of social cohesion.

### Involvement

The findings on CSCs show that shareholders can be characterized by a rather low degree of active involvement. In total 79% of shareholders rarely or never acquire knowledge by attending events in person or through personal contact, preferring instead to stay informed by reading newsletters. Moreover, when specifically asked during focus groups to suggest ideas for supporting the CSCs, the majority of shareholders were willing to generate awareness for the company at work or among friends and family, but not to become more proactively involved, for instance, by organizing community events. Many mentioned considerable time constraints, long distances, or their commitment to other organizations as reasons for remaining in the background. Limited involvement on part of shareholders was also recognized by the management of the CSCs, according to whom only a handful of shareholders regularly show up despite their efforts to facilitate personal relationships between shareholders, management, and the producers. This includes the organization of farm visits, “one-to-one” meetings (with single farmers or managers of food enterprises), or events and the use of profiles, which shine a

light on the people behind the financially supported enterprises (Regionalwert AG Rheinland, 2022).

Given that the organization is legally structured as a stock cooperation, the involvement of shareholders is primarily restricted to formal rights. In accordance with official stock market regulation, this involves the right to participate and vote at the annual general meeting and the right to have access to financial information, which can be used to hold the management to account for their actions. Lastly, shareholders are entitled to receive dividend payments if a profit is generated.

In their role as “concerned sponsors,” shareholders take on responsibility by investing money to support organic food production and improve food system sustainability. Although they have some expectations regarding financial returns, the primary intention is to show solidarity toward producers while also creating a positive social and environmental impact. The focus groups showed that shareholders were particularly convinced by the combination of environmental benefits, solidarity, and regional value creation, leading to their decision to buy shares. Thus, their investments are oriented toward a common good that provides public instead of private benefits. This is also shown by the survey results on shareholders’ initial motivation to join the CSCs: While financial returns were a decisive factor for less than 2%, the most important motives mentioned were supporting regional organic agriculture (30%) and financing alternative business models (17%). However, some shareholders in the group discussions indicated that they do not see their engagement as a donation and expect that the CSC will be economically successful in the future.

Compared to the role of shareholders in CSCs, members of CSA initiatives are more proactively involved, yet their level of involvement mainly depends on the type of CSA organization (service oriented, supportive, or self-organized). Most of the members joined service oriented CSA organizations because of the convenience of gaining access to fresh and healthy food (Hinrichs and Kremer, 2002). This thus resembles a rather traditional consumer role. The members’ engagement is mostly limited to collecting their weekly share of produce at pickup locations, visiting the farm, and participating in informal meetings. Only a few service-oriented CSA models offer the possibility of on-farm work, which is not mandatory but provides an opportunity to experience agricultural labor firsthand. Supportive CSA models are often initiated by consumers and encompass a higher level of membership engagement and involvement. Plenum meetings, to which all members are invited, are integral. These meetings give members the opportunity to discuss and vote on decisions together with the farmer. This concerns business operations and production methods or might also be related to the question of which crops should be grown (Mert-Cakal and Miele, 2020). Thirdly, the self-organized CSA models show the highest level of member involvement. Aside from farm

work being mandatory, members are fully responsible for running the CSA initiative and the organization behind it. This includes various tasks, such as distributing shares, writing working plans, budgeting, organizing events, advertising, and networking (Opitz et al., 2017). Members are usually expected to commit a high level of time and energy, which often leads to frictions within the community as normally a core group of particularly motivated members take on most of the tasks. Frictions may arise in the form of complaints about those members who neglect community duties (Heyland, 2017).

Another part of CSA models are bidding rounds in which harvest shares and monthly member fees for the upcoming year are determined by contract. Together, the monetary contributions must cover the farm’s labor costs and operation expenses in advance. By agreeing to these terms, members share the risks that are associated with agricultural production, including crop failure. Just as in CSCs, this alternative form of financing reveals a “*strong sense of civic responsibility*” (Cone and Myhre, 2000, 194). If harvest losses occur, members show solidarity toward food producers by bearing the risk of money loss without any return, and thus supporting the long-term existence of the farms.

The roles of members in food co-ops are similar to those in CSA organizations. The level of involvement, time, and effort put into voluntary activities mostly depends on the type and size of the food co-op. Therefore, some food co-ops emphasize that “*no responsibilities [are] attached to membership*” (Schrank, 2018, 156), whereas others depend on the proactive engagement of their members (Caraher et al., 2014). In smaller food co-ops, members are mainly occupied with organizing the collective food purchases. Unlike CSA, food co-ops purchase their items in a rather straightforward manner from different farmers and food suppliers that have been selected by the members based on ecological and social criteria. The engagement further involves placing food orders and agreeing on delivery contracts, collecting the payments, and eventually picking up the food (Opitz et al., 2017; Rosol, 2020). As membership grows, it becomes necessary for food co-ops to rent a location that creates space for food to be stored in larger quantities. Members take on the additional tasks of storing products, cleaning, and organizing the depot, as well as managing finances. The largest types of food co-ops run their own supermarkets and must cope with logistical challenges as well as provide customer service. Most of these supermarkets are, however, also partially run by regular employees.

Similar to CSA, many food co-ops are also innovations based on democratic decision-making processes. Thus, regular meetings are usually organized either in the form of smaller working groups or larger plenum sessions. They provide each member with information, offer room for

discussion, and provide voting power on important matters regarding the future development of the food co-op (Rosol, 2020).

Food co-op members also aim to support community goods, but not in the form of responsible investments or shared production risks. In fact, many studies report that food co-ops show solidarity by accepting “fair” prices that guarantee sufficient earnings for the suppliers (Brunori et al., 2010; Fonte, 2013; Papaioikonomou and Ginieis, 2017). It also prohibits food co-op members from negotiating prices or putting pressure on suppliers, for instance, by asking for unilateral discounts.

### Impacts of involvement: Social learning and change of food-related practices

Several studies indicate that participation in CSA and food co-ops has a positive impact on the membership because it is connected to healthier and more sustainable buying, cooking, and eating behavior (Ostrom, 2007; Allen et al., 2017; Opitz et al., 2017). This holds particularly true for low-income members who otherwise have only limited access to fresh and regional food (Hinrichs and Kremer, 2002). Moreover, CSA and food co-op membership also stimulates various learning effects that go beyond the question of where food comes from. Members train practical skills not only for cultivating food or organizing retail, but they also learn how to cook with seasonal products and gain more knowledge about nutritional values (Opitz et al., 2017). A better understanding of agri-food production conditions raises members’ awareness of and appreciation for the work of farmers and further actors along the value chain. Moreover, these innovations can be understood as learning spaces for acquiring transformational knowledge by allowing members to experiment with alternative means of food production and self-organizing best practices. These settings can draw members’ attention toward the “wicked” issue of non-sustainable food systems and strengthen food democracy by empowering members to formulate their own political demands (Kropp and Müller, 2018).

For the CSCs, the survey findings show that shareholders gain a better understanding of the economic situation facing organic food enterprises. Many of the respondents agreed or rather agreed on having learned more about the situation of regional agri-food businesses, including their financial needs (68.1%) and the major challenges they face (60.9%). To some extent, the shareholders also indicated that they had moderately changed their consumption behavior toward buying more organic (50.2%) and regional food items (62%). However, we assume that the shareholders had already practiced sustainable forms of consumption prior to their engagement.

### Connectedness

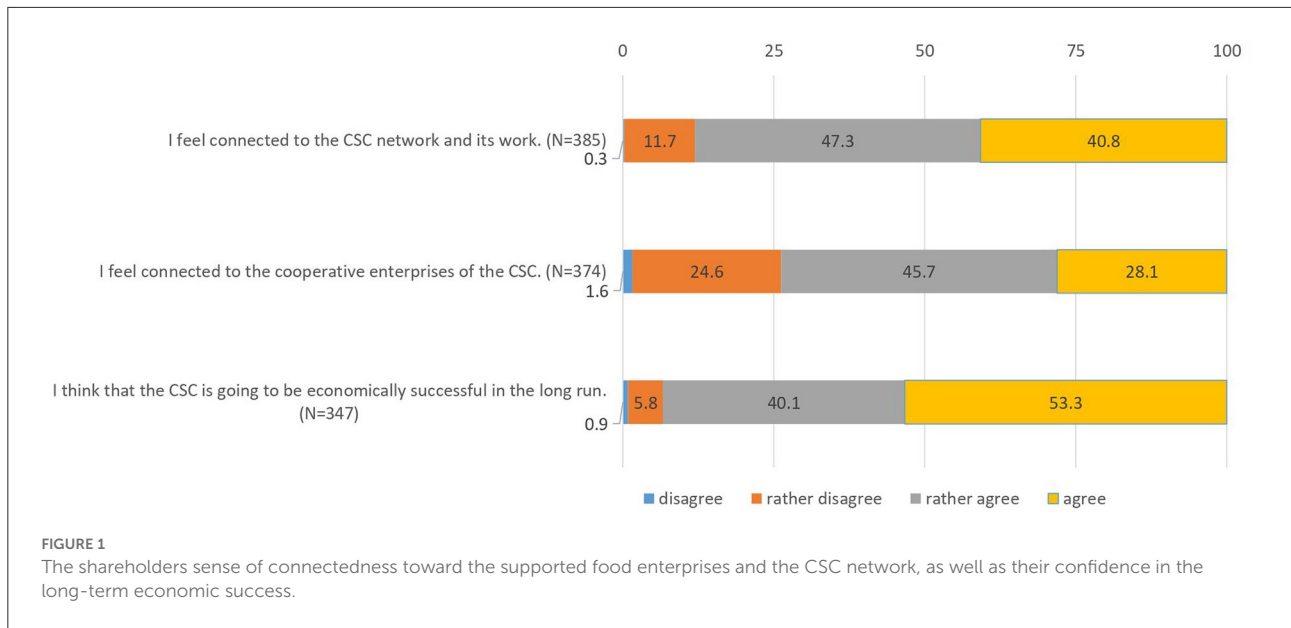
Because of the limited proactive and personal engagement in CSCs, there is only moderate contact among shareholders and with other actors in the value chain (Behrendt et al., 2022). The survey findings show that a large proportion (79.5%) of the shareholders never or rarely obtain information through personal contact. This is also in line with findings from the focus groups: Close relationships were rarely mentioned as a decisive factor for feeling connected with the CSC.

Despite the absence of personal relationships, Figure 1 shows that a majority of the interviewed shareholders feel strongly connected with the financed food enterprises and, to lesser extent, with the CSC network. This is associated with shareholders trusting the management decisions since most of them believe in the future economic success of their respective CSC.

Extensive information offers play an important role in strengthening these feelings of connectedness and trust. The survey data show positive and significant correlations between how well members feel they are informed about investments ( $p < 0.001$ ), business development ( $p < 0.001$ ), and generated socio-ecological value ( $p < 0.001$ ) and their sense of connectedness to the CSC network. In the focus groups, a member emphasized the relevance of transparent information as a sign of appreciation that leads to her feeling more connected. The management of CSCs emphasized maintaining trustworthy relationships with shareholders by providing them with comprehensive and transparent information. Much effort is put into sharing new information on the website and *via* a newsletter, as well as publishing annual status reports. These channels are used to inform shareholders of the long-term development of the CSCs, their investment decisions, and the socio-ecological performances of the supported food enterprises (see Fritz and Kaphengst, 2020).

The focus groups showed that, to a lesser extent, shareholders also feel emotionally connected to the geographical region, especially the regional cultural landscape. In this context, Behrendt et al. (2022) also point out that shareholders prefer to invest in regional businesses despite having no social contact either to other investors, the management, or to the supported food enterprises.

A particularly important factor for attachment to CSCs might result from a broad consensus about the pursued common goals, which can be summarized under the two aspects of promoting regional organic farming as well as establishing regional value chains. Almost all of the interviewed shareholders believed it is important to promote organic agriculture (92.9%), regional value chains (86%), and biodiversity (85.7%). However, the shareholders are also connected by a common critical attitude toward the conventional agri-food system and related policies. A majority is convinced that current agriculture does not promote animal welfare and climate protection, while



they also think that agricultural policies are mainly oriented toward the interests of the food industry. Criticism was also articulated in the focus groups, but mostly from men: They oppose industrial agriculture for “ruining the environment” and resulting in a problematic concentration of land ownership.

A considerably large body of research shows that even in CSA and food co-ops connectedness depends on maintaining trust by providing satisfying information (Thorsøe and Kjeldsen, 2016; Gugerell and Penker, 2020). Compared to CSCs, members in CSA and food co-ops have closer and more personal relationships with each other and with the farmers. This is consistent with studies that show how trustworthiness and feeling connected are sustained by personal encounters during physical activities, such as member voluntary work, decision-making, and organizing (Macias, 2008; Haney et al., 2015; Thorsøe and Kjeldsen, 2016; Papaioikonomou and Ginieis, 2017). In a study on food co-ops in Philadelphia (US), one of the members described this integrative moment of working toward a common goal as follows: “[...] Having all these people work together for so long, that made [the cooperative] a closer community. [...] there is no substitute for working together” (Zitcer, 2015, 818). Members therefore identify less with a specific geographical area but with local sites. This form of place attachment is generated from the individual experiences of members within close, intimate relationships, interactions, and work (Schnell, 2013).

Similar to shareholders in CSCs, CSA as well as food co-op members pursue common goals. The most important motifs mentioned in the literature for CSA and food co-op members are local business support for an organic and seasonal production, access to healthy and high-quality food, protecting the environment, as well as regaining control over

food supply. Many members also share a critical attitude toward non-sustainable farming practices and the dominance of conventional retailing (Cox et al., 2008; Brehm and Eisenhauser, 2008; Zoll et al., 2018; Carlson and Bitsch, 2019).

In contrast to the CSC shareholders, the members of CSA seek to be part of community life, which allows them to contact each other and to become personally acquainted with producers (Flora and Bregendahl, 2012; Pole and Gray, 2013). This, for instance, becomes apparent in a statement made by a member-owner of a food co-op in Indiana (US), who describes the initiative as “a hub for people to meet, have conversations and interactions with people you know, [and that] enriches your life” (Schrank, 2018, 165). Another common trait among CSA and food co-op members is that they advocate alternative food practices that prioritize social relationships over the dominance of market exchange and profit generation (Ostrom, 2007; Carlson and Bitsch, 2019). Their mission of food-decommodification involves replacing traditional grocery shoppers with citizens who are concerned about an appropriate food production and distribution system (Schnell, 2013; Boddenberg et al., 2017).

Table 4 summarizes the results on inclusiveness, involvement, and connectedness in the three types of social innovation.

## Discussion and conclusion

Based on the results shown in Table 4, we will now discuss differences, similarities, and relationships between inclusiveness and social cohesion in food innovations. In subsection Difference in innovations’ potential to bring about food system

TABLE 4 Inclusiveness and social cohesion in food innovations.

	<b>Citizen shareholder company (CSC)</b>	<b>Community supported agriculture (CSA)</b>	<b>Food co-op</b>
<b>Inclusiveness</b>	<p><b>Limited inclusiveness</b></p> <p><b>Socio-demographics:</b> More men, middle-to-old aged, high formal education, little ethnic diversity, above average income, reside in urban areas</p> <p><b>Potential barriers:</b> Economic constraints, limited experience in investment and financial literacy</p> <p><b>Inclusion strategies:</b> Moderate interest to address different middle class target groups</p>	<p><b>(Rather) limited inclusiveness</b></p> <p><b>Socio-demographics:</b> More women, middle aged, high formal education, little ethnic diversity, above average income, reside in urban areas</p> <p><b>Potential barriers:</b> Economic, spatial, and time constraints, limited experience in farming and community work, cultural barriers (e.g., individual food preferences)</p> <p><b>Inclusion strategies:</b> Solidarity financing in bidding rounds: financial support based on what members can afford, redistributions, subsidizing</p>	<p><b>(Rather) limited inclusiveness</b></p> <p><b>Socio-demographics:</b> More women, middle aged, high formal education, little ethnic diversity, above average income, reside in urban areas</p> <p><b>Potential barriers:</b> (Partially) economic, spatial, and time constraints, cultural barriers, limited experience in community work, cultural barriers (e.g., individual food preferences)</p> <p><b>Inclusion strategies:</b> Price discounts in exchange for voluntary labor</p>
<b>Involvement</b>	<p><b>Low degree of active involvement</b></p> <p><b>Activities:</b> Limited motivation to organize events, low attendance rate at personal meetings, involvement is limited to shareholder rights (e.g., voting and attending annual meetings, access to financial information)</p> <p><b>Showing solidarity toward producers:</b> Investing in social-ecological impact instead of expecting profit, sharing risks</p> <p><b>Impacts:</b> Better understanding of the financial situation of sustainable agri-food businesses, moderate change in consumer behavior</p>	<p><b>Low, medium, or high degree of involvement and proactive support:</b> (depending on the CSA model and member motivation)</p> <p><b>Activities:</b> Organizing food pickups, assisting farm work, attending member meetings, plena, and bidding rounds, carrying out organizational tasks</p> <p><b>Showing solidarity toward producers:</b> Covering farmer expenses in advance, sharing risks</p> <p><b>Impacts:</b> Access to organic food and change in consumer behavior toward healthier and more sustainable habits, more experiential knowledge on organic and healthy produce and farming, consumer education (cooking skills, nutrition knowledge) and empowerment</p>	<p><b>Low, medium, or high degree of involvement and proactive support:</b> (depending on the organization and size as well as member motivation)</p> <p><b>Activities:</b> Organizing collective food purchases (food orders, delivery contracts, payment, food pickups), storing food, managing finances, attending meetings and plena, assuming organizational tasks</p> <p><b>Showing solidarity toward producers:</b> Accepting “fair” supplier prices without negotiating</p> <p><b>Impacts:</b> Access to organic food and change in consumer behavior toward healthier and more sustainable habits, more experiential knowledge of organic and healthy produce and organizing food retail, consumer education (cooking skills, nutrition knowledge) and empowerment</p>
<b>Connected-ness</b>	<p><b>Connectedness despite limited personal relationships</b></p> <p><b>Almost no personal interaction, but high level of importance placed on extensive information and transparency.</b></p> <p><b>Identification with regional context</b></p> <p><b>Common goals:</b> Promoting small-scale and sustainable regional farming as well as establishing regional value-added chains and increasing biodiversity <b>Common criticism:</b> Tends toward conventional agriculture and policies</p>	<p><b>Connectedness based on personal relationships</b></p> <p><b>Personal interactions and joint work</b></p> <p><b>Identification with local sites</b></p> <p><b>Common goals:</b> Supporting organic, seasonal, and local production, providing access to healthy and high-quality food, environmental protection, regaining control over food supply, seeking community life and food decommmodification</p> <p><b>Common criticism:</b> Critique of conventional farming</p>	<p><b>Connectedness based on personal relationships</b></p> <p><b>Personal interactions and joint work</b></p> <p><b>Identification with local sites</b></p> <p><b>Common goals:</b> Supporting organic, seasonal, and local production, providing access to healthy and high-quality food, environmental protection, regaining control over food supply, seeking community life and food decommmodification <b>Common criticism:</b> Critique of retail dominance</p>

transitions, we address the role these innovations can play for food system transitions alongside the aspects of envisioned change, connectedness, organizational capabilities, and social learning. Finally, we draw attention to some methodological constraints of the study and provide a brief outlook on possible future research.

## Inclusiveness and social cohesion in food innovations

The three studied food innovations seem to recognize the issue of their low or rather low level of inclusiveness, confirming the overall bias toward middle-class, white, and highly educated members (Hinrichs and Kremer, 2002). Reaching people with different socio-economic and cultural backgrounds, however, requires the implementation of strategies for inclusion.

CSA and food co-ops show various attempts at reducing economic barriers, for instance by means of bidding rounds, symbolic membership fees, and price discounts in exchange for work (Mert-Cakal and Miele, 2020). From our point of view, fostering a socio-cultural environment of inclusiveness is as important as overcoming economic barriers. Zitcer (2015) draws attention to unexperienced people becoming intimidated. Similarly, the findings for CSCs show that a lack of self-esteem and knowledge about financial investments, especially among women, could discourage people from subscribing. The initiatives could address these issues by using simplified language and building relationships that are open to feedback. More sensitive language also allows various perspectives to be captured based on socio-cultural differences (Kato, 2013). Thus, effective inclusion strategies should focus on open and differentiated forms of communication. Public relations can help organizations reach a wider audience by embracing a symbolic language that communicates information by using value laden messages and visual elements. Yet, the organizations' limited personal resources remain a key problem, which explains a tendency to focus on pragmatic recruitment strategies such as "word of mouth" or, in the case of CSCs, addressing well-known target groups.

Each of the three social innovations shows varying potential to reach higher inclusiveness. CSCs are faced with the challenge of shareholders being mainly incentivized by their ideological commitment, whereas the advantage of food co-ops and CSA is that they can additionally address the dietary needs of low-income consumers who are usually struggling to gain access to high-quality food (Guthman et al., 2006). On the other hand, becoming a shareholder does not necessarily require personal presence nor does it involve any time-consuming community activities, which makes involvement more attractive for those who are faced with heavy workloads (Pole and Gray, 2013). Since acquiring shares (financial participation) lies at the core

of involvement in a CSC it is rather obvious that reaching out to low-income groups will remain difficult. However, shareholders with a diverse cultural and educational background could be addressed through differentiated communication strategies.

Another interesting point to consider is the link between social cohesion and membership numbers in food co-ops and CSA innovations. According to Papaioikonomou and Ginieis (2017), large groups self-managing food purchases, delivery, or farm work "[...] cannot function on the basis of consensus and equal participation" (62) due to rising transaction costs. Furthermore, for larger CSA farms, it becomes more difficult to facilitate direct encounters, which are essential for building close and trustworthy producer–consumer relationships (Haney et al., 2015). This lack of personal proximity might also lead to dissatisfied members that feel disconnected and are thus more likely to leave the community (Flora and Bregendahl, 2012).

In contrast, it seems to be less important for CSCs to provide spaces of encounter for identification processes, since they are mainly based on common interests and goals (Behrendt et al., 2022). As a consequence, CSCs are less affected by larger membership numbers as long as transparent information is available for trust building and maintaining connectedness (Thorsøe and Kjeldsen, 2016).

Moreover, there is a logical trade-off between maintaining social cohesion and increasing the inclusiveness of social innovations. As shown in the results, a homogenous community of people who "think alike" constitutes trust and a high degree of feeling connected, which reduces the risk of conflict and disintegrating tendencies. However, this homogeneity is associated with a low level of inclusiveness risks of excluding people from different socio-economic and socio-cultural groups. To address this trade-off, other aspects such as tolerance or the acceptance of diversity emerge as vital conditions for innovations that are growing and becoming more inclusive.

Following the definition by Schiefer and van der Noll (2017), active participation as a part of social cohesion involves more than pure membership since it also means taking responsibility and a longer-term commitment. In this sense, our comparison of the food innovations has shown that consumer involvement can take different forms. It can be measured as practical engagement, which is based on community activities, joint work, self-management, and organizational decision-making. As the CSC model demonstrates, however, another way for consumers to become involved can be through alignment with legal ownerships and financial contributions arising from solidarity, without further activities in management or the supported enterprises (Partzsch, 2018). We also want to draw attention to the fact that forms of consumer involvement in innovation processes also depend on the respective organizational context. Although involvement depends on a deliberate choice to become more or less engaged, consumer roles are, to a certain extent, a product of the organizational context which may—or may not—encourage different possibilities for active involvement.

## Difference in innovations' potential to bring about food system transition

Our results have several implications for the transformational pathways of the studied food innovations and their potential for diffusion. All three social innovations offer alternative modes of food production and consumption that address tensions in the food regime and strive for radical change (Ingram et al., 2015).

The CSCs aim to bring about change in the finance sector, which so far has failed to adequately compensate the costs of adopting sustainable agriculture and food practices. The decision to invest money is based on a consideration of social and ecological services as well as the economic performance of the organic enterprises. In the long run, the goal is to compensate the enterprises financially for their efforts (Hiß, 2019). CSCs are promoting a food economy of the common good that serves societal needs but does not externalize the social-ecological costs of agri-food production. Currently, CSCs but also the supported enterprises, which act under competitive market conditions, are facing high financial pressure.

The diffusion capacity of CSCs therefore largely depends on convincing people to take on personal responsibility by financing eco-friendly and socially responsible food production. Although social and ecological benefits are seen (and communicated) as an increase in the shareholder value, it does not fully substitute expectations of financial return or other forms of revenue. As a consequence, the model is only attractive for those who are looking for ethical and sustainable but less profitable investments.

On the other hand, shareholders change conventional food supply structures with their investments but remain traditional end-users when it comes to their daily food practices. In this area, the other two social innovations of CSA and food co-ops show a more radical approach.

Members can take the role of supporters who are proactively engaged in self-organized community life. Gernert et al. (2018) stress the role that these alternative innovations play in steering fundamental "system change" instead of incremental regime adjustments. In contrast to the dominance of globalized agri-food systems, both innovations also build their own decentralized and self-governed infrastructures for food production and distribution. The producer–consumer relationships in CSA and food co-ops are based on solidarity in terms of risk sharing and fair pricing: In contrast to the mainstream food economy, food is not primarily sold as a commodity for the purpose of profit generation but to satisfy basic needs and achieve producer–consumer connections. The diffusion of these innovations is usually challenged by finding and retaining motivated members who are willing to take an active part in building new community structures. There

are, of course, exceptions. For instance, in food co-ops that have developed into larger corporations, members can become regular customers without changing their daily food practices.

As we have shown previously, CSA and food co-ops are typically based on more personal relationships and shared goals that are constitutive for their members' sense of connectedness. However, some studies reflect on how internal social proximities, specifically closely bonded relationships, might hamper the diffusion of innovations (Ingram et al., 2015; Gugereff and Penker, 2020). If innovations aim at influencing the incumbent regime, it is important to build wider networks that reach beyond their established community, for instance, through a collaboration with conventional food actors and institutions. Thus, it is crucial that innovations position themselves as alternatives without remaining isolated.

CSA and food co-ops are bound to local places, which corresponds with a physical co-presence that is required to carry out community duties (Gernert et al., 2018). Our empirical study on CSCs showed that geographical proximity also plays a considerable role for the shareholders and the management of such organizations. Regional attachment is an important argument that influences the initial investment decision of shareholders (Behrendt et al., 2022) and which explains the intention of CSCs to operate and develop within regions. Instead of attracting a higher number of members, it is important for the diffusion of all three social innovations that they multiply by setting up initiatives in more regions. For this purpose, the CSC network has established a nationwide structure in the form of the "Regionalwert-Impuls," which encourages the founding of new initiatives. In Germany, a similar role is played for CSA initiatives by the Network for Solidarity-Based Agriculture (2022).

CSCs make use of the current structures of the regime and adherences to financing and stock market regulations. Given that they take the legal form of a stock company, CSCs consist of formal relationships and well-defined roles, which builds a trustworthy environment but also sets clear expectations for involved actors and increases reliability (Jaeger-Erben et al., 2015; Wunder et al., 2019). Both of these aspects speak for an effective organization with high potential to enter the food regime. Due to the more democratic approaches in some of the CSA and food co-ops, the organizational capability depends on the efficiency of joint decision-making processes. At the same time, these innovations, which rely heavily on active member engagement, are at risk of overburdening their members who have only limited personal or financial resources.

Besides being responsible for attracting more shareholders, the CSC management also serves as an intermediate actor. In this role, they develop regional networks to create a common market for goods, while also reaching out to political institutions, civil society, and media representatives, which mobilizes additional (financial, human) resources and raises

public attention (Gernert et al., 2018). There is also a well-established CSA network in Germany, but similar national structures do not (yet) exist for food co-ops, which might deprive them of valuable support and funding (Celata and Sanna, 2018).

Finally, participation in these innovations goes hand in hand with different social learnings as an important element of sustainability transitions (see Section Social innovations in food system transitions). CSA and food co-ops aim to change practices and empower communities based on close producer–consumer relationships. As a consequence of these learning processes, they transition from passive consumers to active food citizens who have better knowledge of seasonal and healthy food (Renting et al., 2012; Opitz et al., 2017). The producers can also experiment with alternative growing and food processing practices that take socio-ecological implications into account. This is because they are less dependent on agricultural subsidies while also not operating under the mere maxim of economic profitability as long as CSA members provide the necessary financial means (Gruber, 2020). Learning processes also include experimenting with price negotiations between producers and consumers that address the question of who takes how much risk.

Besides incentivizing farming practices toward sustainability *via* sustainability reports, the CSC innovation also focuses on advocating structural shifts within the existing food system. Organic farmers are granted access to financial resources, which enables them to start or maintain businesses that can fill supply gaps along regional value chains (Böhm and Funcke, 2017; Celata and Sanna, 2018). This is also fostered by strengthening the contact between the supported enterprises in the CCS network. Through reading reports and staying informed, the shareholders learn that organic agriculture is more labor-intensive, which makes them understand the importance of monetizing the environmental and social benefits that the cooperating enterprises provide.

It should be noted that the validity of our interpretations in this section might be limited as empirical data were only collected for the CSCs, whereas all other findings are derived from a literature search. It is important to state that the literature we considered did not exclusively focus on questions regarding social cohesion and inclusiveness. It was also necessary for our analytical comparison to generalize from the organizational heterogeneity of CSA and food co-ops. Another shortcoming concerns our online survey, which did not reach the originally intended number of participations mainly due to missing contact data. This could lead to a bias in the sample and thus makes it less representative of the shareholders from all CSC innovations. Additional surveys among existing CSCs and other food innovations are required to strengthen the validity of our findings.

## Conclusion

The aim of this paper was to examine how different social food innovations contribute to inclusiveness and social cohesion in the context of food system transitions. As shown, inclusiveness is not prioritized by most of the food innovations, which instead of being universal target particular groups. However, some of the CSA initiatives and food co-ops have deployed explicitly inclusive strategies. Moreover, the social innovations successfully foster solidarity and trustworthy relationships between consumers and food producers, but they do so this in different ways. While CSCs are service-oriented innovations with defined responsibilities and a focus on providing members with transparent information, food co-ops and CSA take a more community-based approach, relying on interpersonal relationships and civic engagement.

Food system transitions might need social innovations that complement each other by taking different change pathways and providing opportunities for people with different motivations and resources to become an active part in this process. As a result, future research could examine more systematically the complementary potential of these but also further social agri-food innovations and encourage better cooperation to jointly achieve greater impact.

Based on our findings, this paper uncovers some policy implications at the national but also EU level regarding support for these social innovations and thereby increasing opportunities for the inclusion and participation of diverse population groups.

More generally, there is an urgent need to reconsider current policies on agricultural finance. Transition toward more sustainable agriculture enables an economy that provides sufficient monetary incentives for enterprises to produce socio-ecological value and contribute to rural development instead of maximizing individual profits. At the same time, market prices would need to reflect the true costs of food production. This would make it easier for sustainable enterprises to operate profitably. Consequently, alternative financing models such as CSCs might eventually no longer be necessary.

Regional programs could promote more cooperation in sustainable food value chains with a particular focus on the better integration of small-scale producers. A good example of the institutionalization of these efforts is the recently implemented “value chain management” program, which is funded by the “Bundesprogramm Ökologischer Landbau (the German government’s federal program for organic farming)” to promote the development of the German organic food sector. This management scheme focuses on supporting the establishment of regional value chains, which creates the potential for regional job opportunities, increased income, and stable rural communities.

All three social innovations depend on more active support, primarily from local or regional authorities, such as greater



recognition of the positive impacts they have on regional economies and their potential to revitalize rural areas and stimulate community development. Municipal governments could support this by providing easy-to-access information about the social innovations and built partnerships among local stakeholders for the purpose of reaching wider audiences. Since many of these social innovations struggle to be able to acquire sufficient land, municipal governments might also consider helping them to access public farmland. Supporting these social innovations in becoming more inclusive and cohesive remains an important task that requires concrete action. Recommendations refer to the support of community-building activities, broad opportunities for participation, and appropriate communication strategies that address people with diverse interests and backgrounds.

## Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author/s.

## Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. The patients/participants provided their written informed consent to participate in this study.

## Author contributions

BH and MS contributed to the conception of the research design, edited, and revised the text. BH was responsible for data collection, analysis, and prepared the initial draft for the manuscript under supervision of MS. All authors

contributed to manuscript revision, read, and approved the submitted version.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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