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Evaluating practice-based intervention strategies for collaborative sustainable food supply chains: international experiences

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ABSTRACT

Achieving sustainable food supply chains is a global policy priority in response to climate change, resource depletion, biodiversity loss and social inequities embedded in contemporary food systems. However, many interventions remain narrowly focused on individual behavior change rather than on practices and collaborations. This study adopts a social practice theory lens to evaluate practice-based interventions aimed at promoting collaborative sustainable food supply chains (SFSCs) across five countries: Thailand, Taiwan, Germany, Turkey and Sweden. It examines how practice-based interventions informed by social practice theory can support the development of collaborative SFSCs across diverse national contexts. This research uses a framework of three modes of practice change: (1) re-crafting practices, (2) substituting practices and (3) changing how practices interlock. This study analyzes how collaborative intervention strategies address sustainability challenges in food supply chains. The research team follows a critical engaged research approach, working actively with stakeholders to co-create intervention strategies. Data were collected through visioning and back-casting workshops, interviews and stakeholder consultations. The findings show that interventions change how practices interlock, through the reorganization of relationships, revised coordination mechanisms and altered governance arrangements among stakeholders. While contextual conditions in each case shaped the form of interventions, collaboration emerged as a key enabling mechanism for the expansion of SFSCs. This study contributes to social practice theory by operationalizing an analytical and intervention-oriented framework for collaborative food supply chains. The findings offer lessons for policymakers and practitioners by demonstrating how co-created, practice-oriented intervention strategies can support a sustainable transition across varied food systems.

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Food supply chain; sustainability; collaboration; social practices; practice-based intervention; transdisciplinary research

1. Introduction

Sustainability challenges—including climate change, pollution, land degradation, water scarcity and biodiversity loss—are closely linked to systems of food production and consumption (Hargreaves 2011; Arora et al. 2018). These sustainability challenges have been further intensified by recent global crises such as war (Lin et al. 2023) and the pandemic (Swinnen and McDermott 2020), which have also disrupted food supply chains (FSCs), causing worldwide food insecurity (Toromade et al. 2024). Addressing these intertwined environmental and social challenges requires fundamental changes in how food is produced, distributed and consumed. Consequently, both food producers and consumers are increasingly interested in moving away from unsustainable practices and toward more resilient and sustainable food systems.

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Highlights

- This study employs social practice theory to evaluate collaborative interventions for sustainable food supply chains in five international contexts.
- The research utilizes a framework of three practice-based intervention types—re-crafting, substituting and interlocking practices—to analyze systemic changes in food-related behaviors.
- All five interventions—across Thailand, Taiwan, Germany, Turkey and Sweden—demonstrated changes in how food-related practices interlock, highlighting the systemic nature of sustainable transitions in food supply chains.
- Comparative case studies from Thailand, Taiwan, Germany, Turkey and Sweden provide context-specific insights into how to (re)organize food supply chains in more sustainable ways, contributing to global sustainability.

Conventional policy approaches to promote sustainable consumption, such as information campaigns, behavioural nudges, market-based incentives and regulatory measures, have been widely criticized for their narrow focus on individual choice while neglecting the broader social, material and institutional contexts in which consumption occurs (Keller et al. 2016; Kantamaturapoj et al. 2022). In response, scholars such as Hargreaves (2011), Spurling et al. (2013) and Welch and Yates (2018) have increasingly argued for a shift away from individualistic behaviour-change models toward approaches that emphasize collective action, social organization and everyday practices as key levers of sustainable transitions.

Within this broader shift, social practice theory has gained prominence as a lens for understanding food-related activities. Rather than focusing on attitudes or preferences, this approach conceptualizes consumption as a set of routine practices shaped by the dynamic interplay between human agency, social norms, material arrangements and institutional structures (Liu et al. 2016). Previous research has applied a social practice perspective to examine food consumption and food business practices, highlighting how trust, skills, infrastructure and meanings shape everyday food-related activities across different contexts (Delormier et al. 2009; Fonte 2013; Kantamaturapoj and Marshall 2020; Wertheim-Heck and Raneri 2020; Kantamaturapoj et al. 2022; Doidge et al. 2023). Collectively, these studies demonstrate the analytical strength of practice theory in explaining why food practices persist or change, and how sustainability outcomes are socially produced.

At the same time, collaborative food supply chains, defined as arrangements in which food system actors work together beyond traditional commercial relationships, are increasingly recognized as a promising pathway toward sustainability (Matopoulos et al. 2007). Empirical studies highlight that collaborative models can generate multiple benefits across economic, environmental and social dimensions. Examples include farmer producer organizations in India that foster innovation and sustainability outcomes (Krishnan et al. 2021), community-based food networks in China that support environmental conservation and biodiversity (Song et al. 2014) and dairy cooperatives in Poland that promote stakeholder collaboration and generate social, environmental and economic improvements (Fiore et al. 2020). These findings underline the potential of collaboration to advance sustainability within food supply chains.

Despite these advances, an important research gap remains. While many researchers have applied a social practice approach to examine food consumption and food business practices (Delormier et al. 2009; Fonte 2013; Kantamaturapoj and Marshall 2020; Wertheim-Heck and Raneri 2020; Kantamaturapoj et al. 2022; Doidge et al. 2023), its application to intervention strategies aimed at fostering sustainability in collaborative FSCs has received limited attention. In particular, there is a lack of comparative research examining how FSC practice-based intervention strategies can support sustainability across FSCs in different national and institutional contexts.

To address this gap, the objective of this article is to evaluate practice-based intervention strategies for improving collaborative sustainable food supply chains (SFSCs) across five countries: Thailand, Taiwan, Germany, Turkey and Sweden. The study is guided by the following research question: How can practice-based interventions informed by social practice theory support the development of collaborative SFSCs across different contexts?

By shifting the focus from practice analysis to intervention design, this study contributes to social practice literature by operationalizing practice theory in the context of collaborative FSCs. Furthermore, through a comparative analysis of five collaborative business case studies, the article provides empirical insights into how practice-based intervention strategies can promote sustainability across diverse FSCs and contexts.

2. Literature review

This research explores the possibility of practice-based intervention strategies in advancing sustainable food supply chains (SFSCs). The literature review focuses on the following three elements: collaborative sustainable food supply chains (2.1), governance as a mechanism for driving SFSCs (2.2) and the application of a social practice approach as a practice-based intervention strategy (2.3).

2.1. Collaboration in sustainable food supply chains

SFSCs have increasingly become a research topic due to global concerns about food security and sustainability. SFSCs are concerned with managing information, materials, activities and capital flows of standard FSCs while bearing in mind the three pillars of sustainable development: economy, environment and society (Beske et al. 2014). In general, conventional FSCs are dynamic and complex, involving many stakeholders, including farmers, producers, retailers, consumers and governmental agencies (Sezer et al. 2024). To enhance sustainability in the FSCs, we highlight collaboration as an important aspect, particularly considering recent global crises (Duong et al. 2025).

When investigating the collaboration between stakeholders in the supply chains, Roehrich et al. (2024) reveal two connotations: (1) cooperation—aligning interests and values among stakeholders to set a common goal and (2) coordination—adjusting and aligning tasks of stakeholders to accomplish a common goal. Collaboration can be classified into two types in the FSCs: vertical and horizontal collaborations (León-Bravo et al. 2017; Widadie et al. 2022). Vertical collaboration is concerned with establishing collaboration with stakeholders from upstream to downstream of the supply chain, while horizontal collaboration is about establishing collaboration with the stakeholders who are not in direct contact with the flow of cash and materials, such as government, NGOs, associations and competitors (Dania et al. 2016). Collaboration plays a crucial role in the process of making the food supply more sustainable as it enables the exchange of information, resources and knowledge between stakeholders in the FSC (Dania et al. 2016; Camel et al. 2024).

Literature on collaboration in SFSCs is divided. One set of research examines the actual impacts of collaboration (e.g. reducing resource use and waste, and promoting food security). Another subset of the research focuses on the influential factors in collaborations (e.g. building trust among stakeholders and firm strategies) (Duong et al. 2025). Duong et al. (2025) also identified that research on sustainability transitions is urgent, with a call to focus on social sustainability practices organized by multiple stakeholders, roles of stakeholder communication in sustainability transitions and mechanisms for promoting cooperation in food supply chains. These are primarily issues of governance, which is covered in the next section.

2.2. Governance in collaborative sustainable food supply chains

Sustainability in FSCs is commonly examined via four different dimensions: governance, economics, environment and socio-culture (Thongplew et al. 2025). Among these dimensions, governance plays a central role in collaborative SFSCs, as it shapes how stakeholders coordinate, negotiate responsibility as well as address sustainability concerns and issues in SFSCs. Governance therefore provides the conditions under which collaborative interventions can be initiated and implemented.

Existing literature conceptualizes governance in SFSCs as encompassing organizational processes and interaction of stakeholders, including decision-making structures, coordination mechanisms and trust building among stakeholders (Bui et al. 2019). These elements are relevant for collaboration, where alignment among diverse stakeholders is necessary to support shared sustainability goals. Prior research has addressed governance in SFSCs across several interrelated areas. These include communication and information sharing mechanisms that facilitate coordination among stakeholders (Azevedo et al. 2018; Yontar and Ersöz 2021), the formation of partnerships (Ashton 2022; Tay et al. 2024) and trust-building mechanisms such as certification and traceability systems (Segura et al. 2020; Diéguez-Santana et al. 2022). Other studies on governance in SFSCs also highlighted the roles of local policy actors in promoting sustainable foods (Sibbing et al. 2021), the inclusion of marginalized stakeholders and organizing

stakeholders towards sustainability (Bui et al. 2019) and the distribution of power and influence among different (levels of) stakeholders in the supply chains (Siegel and Lima 2020; Omar and Thorsøe 2024).

As reported in numerous studies, shaping and making FSCs more sustainable has been achieved through the inclusion of various multi-level stakeholders (including non-governmental agencies, governmental organizations and international policy agendas) in mobilizing resources to achieve sustainability initiatives. Based on these results, making FSCs more sustainable can be understood and studied by the social practice approach, which highlights the interconnectedness between (shared) practices and material arrangement.

2.3. Social practice approach for developing intervention strategies in the collaborative sustainable food supply chains

Social practices refer to everyday life activities that are constructed and embedded in society, which are shaped by culture and meanings, materials, institutions and infrastructure (Spaargaren 2011; Shove et al. 2012). Everyday practices are performed as a result of the negotiation of individual agency and social contexts. Most current governmental policies and strategies have been developed based on the ABC approach (attitude, behaviour and choice)—attitudes (A) of individuals drive the behaviour (B) that individuals choose (C) to adopt (Shove 2010). The ABC approach focuses solely on either the individual cognitive factor or economic and social variables, resulting in policies and strategies prescribing raising awareness and incentive arrangements to motivate people to adopt sustainable behaviours and practices. With a myopic focus causing value-action gaps, researchers have questioned its efficacy (Shove 2010; Spurling et al. 2013; Strengers and Maller 2015; Keller et al. 2016) and have called for more effective sustainable consumption policies and strategies (including within food systems) developed through a social practice approach (Shove 2010; Keller et al. 2016). This shifts the focus from addressing actor decision-making towards configurations of social practices, such as the interlocking of materials, meaning and competences (Shove 2003).

According to Shove et al. (2012), three main elements make up each social practice: (1) materials, (2) competences and (3) meanings. These three elements interact to construct everyday practices. Materials refer to physical objects and resources used in the execution and operation of sustainable practices. Competences are knowledge and ability to perform and execute sustainable practices. Meanings are the significance and symbolic roles of sustainable practices in society at large. The units of analysis for policies of a social practice approach are framed within practices (actions), such as eating, commuting and laundering. Rather than targeting individual actions or behaviours as prescribed by ABC-based interventions (e.g. providing only information), practice-based interventions are more systematic in addressing many aspects connected to each practice, including social and cultural aspects. When it comes to (sustainable) FSCs, various practices become relevant, including farming (Huttunen 2019; Sharifzadeh et al. 2023), ingredient and food shopping (Blake et al. 2010; Adeosun et al. 2022), food preparation and cooking (Wolfson et al. 2017; Van Kesteren and Evans 2020) and eating (Delormier et al. 2009; Wills et al. 2011).

Many studies apply a social practice approach to explore issues of food (Castelo et al. 2021; Standal and Westskog 2022; Martínez et al. 2024); however, the application focusing on SFSCs is limited. Few existing SFSCs studies looked into the roles and interactions of strategic stakeholders (Hyland and Macken-Walsh 2022), the roles of intermediaries in food provision (Parekh and Klintman 2021) and the formulation of partnerships for promoting sustainability (Zwart et al. 2021). Therefore, applying a social practice approach and examining practice-based intervention strategies for enhancing sustainability in SFSCs addresses a significant gap in the literature.

The research team has employed a social practice approach to develop policy intervention strategies. Spurling et al. (2013) propose three framings to analyze and interpret different types of social practice-based interventions: 1) re-crafting practices, 2) substituting practices and 3) changing how practices interlock. These framings are helpful to interpret practice-based interventions for SFSCs (Kantamaturapoj et al. 2022). Based on Spurling et al. (2013), the details of three practice-based framings are summarized as follows:

Re-crafting practices emphasizes the reduction of resource use of the existing practices by changing element(s) constructing the practices. Interventions of this frame can include: removing, introducing, or combining elements, or constituting the practice to phase out unsustainable versions and/or promoting sustainable ones. For example, re-crafting might include introducing skills and cultural conventions

together with new technologies to encourage more sustainable practices. In this way, it is important to figure out how the elements that constitute the practices are combined to deliver a result for resource reduction.

Substituting practices focuses on replacing less sustainable practices with more sustainable ones. To achieve it, two options are possible: 1) organizing relevant factors (time, space and resources) for a more sustainable practice and 2) encouraging better options for a more sustainable practice. An example of the first option would be replacing bathing with showering in new apartments by not installing bathtubs, but installing shower rooms (shower boxes). For the second option, one example might be substituting resource-intensive eating practices with more sustainable ones by focusing on organizing the preferred/dominant eating mode (e.g. eating out) to be more sustainable.

Changing how practices interlock is discovering how practices interlock with one another. Infrastructure (influencing where practices take place) and institutions (influencing when practices take place) play crucial roles in the interlock of practices. Practices interlock in two ways: 1) sequences of practices and 2) synchronization of practices. An example of sequences of practices is the schedules of daily life that are partly determined by institutions and organizations, such as working hours and opening hours of shops. The example of synchronization of practices is the use of electricity by millions of people in the morning rush hours, causing energy peak loads. Such sequences and synchronization of daily life practices have implications that can be used to design practice-based interventions to promote sustainability.

In sum, these practice-based interventions in collaborative SFSCs for enhancing sustainability are about leveraging, configuring and interlocking relevant materials, competences and meanings of different practices in SFSCs. As SFSCs involve many stakeholders, the design of practice-based intervention strategies has to be aligned with stakeholders' sustainability interests and values, while accommodating their related (sustainable) practices and actions to achieve a shared goal.

3. Methodology

This study follows a critical engaged research approach (Zwart et al. 2021) by actively working with stakeholders to design and implement interventions aimed at improving sustainability in food supply chains. Rather than observing practices from a distance, the researchers engage directly with producers, businesses, public actors and civil society through workshops, interviews and consultations to address real-world challenges. This approach reflects a commitment to generating practical change while also critically examining and reshaping existing supply chain practices. The research team regards this study as transdisciplinary research because problems in the FSC are complex and cannot be addressed by a single discipline alone (Touboulic et al. 2020). Accordingly, the research team brings together scholars from multiple fields, including the social sciences, management and sustainability sciences. In addition, across all five countries, the study incorporates active input from practitioners outside academia in both the research design and data collection processes (Wickson et al. 2006).

This research develops practice-based interventions for collaborative sustainable FSCs in five countries: Thailand, Taiwan, Germany, Turkey and Sweden. The five cases were selected because these cases are involved in the international Belmont Forum SSCP project entitled "Co-creation of sustainable food supply chains through cooperative business models and governance (CO-SFSC)". While working and sharing information and experiences across five countries, one of the key outcomes of the CO-SFSC project for each country is to identify and implement an intervention to promote sustainability in a local FSC through the co-creation process with stakeholders. The cases' commonality is in the attempt to enhance the sustainability of the five FSCs. The stakeholders in each of the five supply chains work together to enhance sustainability levels in the supply chains. The characteristics of each of the cases are diverse, so this research offers an interesting view on how different FSCs (and their stakeholders) develop practice-based interventions in different contexts.

To explore and develop practice-based interventions, three steps (Figure 1) were taken to collect and analyze data: (1) realizing the shared vision of the stakeholders in the FSCs (e.g. visioning workshops, interviews, participant observation), (2) formulating strategies to reach the shared future vision (e.g. back-casting workshops, interviews, participant observation) and (3) developing and implementing the practice-based intervention (e.g. interviews and consultations). These three steps were carried out through a combination of methodologies, including visioning workshops and consultation interviews with the

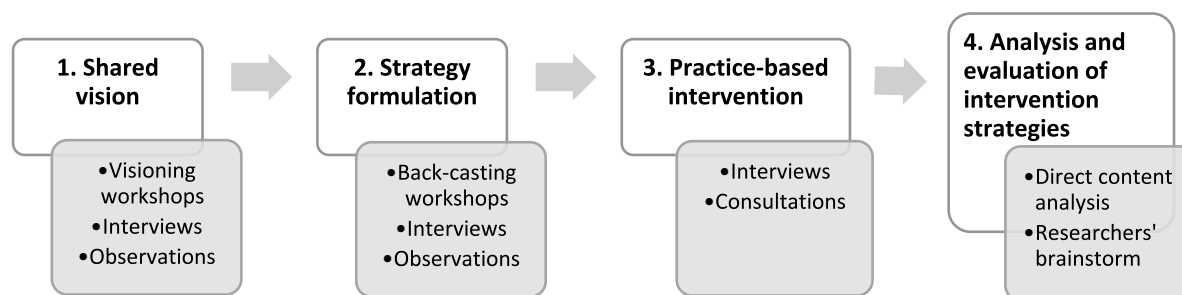


Figure 1. Methodological approach to the development and analysis of practice-based intervention strategies.

stakeholders during 2023–2025. It should be noted that, as of the time of writing this article, different stages of five interventions were observed. Few interventions were initiated and showed preliminary results, while a few were implemented and yielded concrete results such as the adoption of new practices.

Visioning and back-casting workshops are modified from a multi-phased, participatory methodology pioneered by Brandt et al. (2013) and Davies (2014). The visioning workshop was meant to understand how different stakeholders in the FSCs perceive the possible futures with an emphasis on advancing toward sustainability. Representatives of key stakeholders in the FSC of each case participated in these workshops, which began with the presentation of the current stages of FSCs regarding sustainability. Subsequently, participants were asked to consider the future of their conventional FSCs—what SFSCs would be like. Following the visioning workshop, the back-casting workshop was conducted to search for alternatives to reach the vision of SFSCs. It began with an activity in which participants identified the most essential elements for enabling a shift toward the future vision. These elements served as guidance for reflection throughout the back-casting process. Subsequently, participants formulated strategic pathways to bridge the gap between the present and the desired future. These proposed strategies were reviewed and refined during the group discussion, where collective feedback led to revisions. Both visioning and back-casting workshops created significant foundations for building achievable, co-created practice-based intervention strategies meant to transform current FSCs into more sustainable ones.

A series of semi-structured, face-to-face interviews were conducted with the key stakeholders. The stakeholders include governmental agencies, cooperative members, farmers, business owners and consumers. The purposes of interviews are different from one case to another. Overall, the interviews across the five cases addressed the future vision of SFSCs, and focused on gaining inputs to design interventions, and consult for finalizing the planned interventions. Examples of key interview questions include “What is the sustainable FSC that you foresee?”, “What are the important issues to be addressed to achieve a sustainable FSC?” and “Do you think the proposed intervention strategies are suitable to implement to enhance sustainability in the FSC?”

The collected data were transcribed and coded prior to analysis. The researchers employed a directed content analysis, using prior research to develop the initial coding scheme. Specifically, the three practice-based framings proposed by Davies and Doyle (2016), (1) re-crafting practices, (2) substituting practices and (3) changing how practices interlock, were used as the analytical framework for this study. The data were mapped onto these frames to examine how the intervention strategies aligned with each category. All researchers jointly analyzed and interpreted the data to enhance the consistency and reliability of the analysis.

The focus of the FSC, the method to obtain intervention strategies, and the participants of each country are summarized in Table 1.

4. Results and discussion

4.1. Cases from five countries

4.1.1. Thailand

4.1.1.1. Case description. The case of Thailand focuses on the organic restaurant supply chain in Phuket, organized in a network by the Thai Organic Consumer Association (TOCA), an NGO advocating for organic food. The organic restaurant supply chain in Phuket has an imbalance between the provisioning system and the consumption side. For provisioning, the quantity and variety of raw materials are available in limited

Table 1. Summary of methods and participants from each country.

Country	Study site	FSC	Reason of supply chain selection	Source of Intervention	Collaboration type	Method to obtain intervention	Data collection period	Participants
Thailand	Phuket	Restaurant supply chain (provincial level)	The case was purposely selected because organic food in Thailand remains a niche market, largely limited to fresh products, while urban consumers—health-conscious, well-educated, time-constrained and with purchasing power—predominantly eat out. Given the limited availability of organic food in restaurants, this setting presents a strategic opportunity to promote organic food consumption in Thailand.	Developed by researchers and practice partner	Vertical collaboration to form new horizontal collaboration	Visioning and back-casting workshop: 3 sub-groups to share visions for the sustainable restaurant supply chain and to formulate strategies to achieve the visions of sustainable restaurant supply chains 4 In-depth interviews and consultations with local stakeholders to select the most practical intervention.	July 2024	22 participants (3 organic farmers, 6 organic restaurants, 6 government officers, 4 NGOs/consumers and 3 academics)
Taiwan	Beidou	Soybean supply chain (small business supply chain level)	The case was selected as a quintessential model of Taiwan's sustainable agri-business, as it received the 2024 National Environmental Sustainability Award—a remarkable achievement for a small-scale enterprise. This case demonstrates how government-subsidized interventions successfully facilitate different supply chain models.	Developed by practice partners	Vertical collaboration to form new horizontal collaboration	5 In-depth interviews and consultations with the key stakeholder, soybean farmers and relevant agencies	March 2024–May 2025	5 key informants (3 soybean farmers, 1 central governmental agency and 1 local governmental agency)
Germany	Karlsruhe	Supply chains for raw and preprocessed vegetables for canteens, focus product: carrot (municipality level)	The case was selected on the one hand due to our local anchoring in Karlsruhe and based on connections with local stakeholders built in previous projects, on the other hand based on the core research goal of building SFSC and how cooperative structures contribute to this. This corresponded with the aim of the involved practice partners to build a supportive local ecosystem and structures like a bundle for connecting stakeholders and production and consumption.	Developed by researchers and practice partners	Vertical and horizontal collaboration to form a new SFSC	Visioning and back-casting workshops: a series of small workshops with the key stakeholders, including FoodCircle and KA.Wert to analyze of the current supply chains of vegetables, to formulate visions of FoodCircle established as an intermediary and to reflect the needs, challenges and solutions.	October 2023–December 2024	October 2023's workshop with 5 participants. March 2024's workshop with 15 participants. December 2024's workshop with 30 participants.
							January 2025	10 researchers and key stakeholders.

(Continued)

Table 1. (Continued)

Country	Study site	FSC	Reason of supply chain selection	Source of Intervention	Collaboration type	Method to obtain intervention	Data collection period	Participants
Turkey	Istanbul (with participants from Ankara, Izmir, Antalya)	Consumer cooperative supply chain (regional level)	This case was selected to address structural challenges to the sustainability of the national agri-food system, which includes weak bargaining power of small producers, limited public support for cooperatives and fragmented food governance, the project brought together municipalities, cooperatives and civil society actors from Turkey's major metropolitan areas. The selected municipalities and cooperatives were purposefully chosen because they are actively engaged in promoting food supply chain sustainability in large urban contexts, either through ongoing policy initiatives or through grassroots, practice-based cooperative initiatives oriented towards sustainable food systems. This focus allows the project to evaluate participatory interventions under structurally constrained conditions that are relevant for Turkey and analytically informative for other contexts facing similar sustainability and governance challenges.	Developed by researchers	Vertical and horizontal collaboration to enhance governance of the SFSC	Workshop with FoodCircle focused on business models. Regular meetings with key stakeholders. Bioregional fair to bringing together all stakeholders in supply chain.	January 2025	10 researchers and key stakeholders.
					11 Interviews with stakeholders		December 2024	2–3 researchers and 1–2 key stakeholders.
					Visioning and back-casting workshop: 3 sub-groups to analyze the current state of FSC, to discuss common concerns and suggestions and to form the basis for designing an intervention aimed at strengthening dialogue, cooperation, coordination and trust among actors.	December 2023	84 participants (27 showcase businesses, 16 communal catering companies, 13 agricultural companies, 15 food retail companies and 13 food processing companies), 11 key-informants (10 farmers and 1 chef), 5 Focus group discussions with 15 participants (5 producer cooperatives, 4 municipal employees, 1 citizens' assembly member and 5 consumer cooperatives).	
Sweden	Södertälje	Municipal supply chain (municipality level)	Public food procurement for public meals served in municipalities is seen as an important policy tool in Sweden for increasing the sustainability of the	Developed by practice partners (researchers observed and	Vertical and horizontal collaboration	Participant observations at meetings and workshops at the	February–April 2024	10 participants (5 municipal employees/ project leaders, 1 farmer, 1 local logistics, 2 civil

Table 1. (Continued)

Country	Study site	FSC	Reason of supply chain selection	Source of Intervention	Collaboration type	Method to obtain intervention	Data collection period	Participants
			country's food systems, including by supporting local and regional food systems (Spurling et al. 2013). Despite this, many policies aim for public food procurement are difficult to achieve in practice (Andersson et al. 2025). Södertälje municipality is also a forerunner municipality in relation to working with the food system sustainability, and with public food procurement practices in local and regional supply chains. It is therefore of interest and value to study the ongoing efforts of the municipality in this study.	supported the intervention)	to reorganize the SFSC	municipality and a local wholesale facility 5 interviews and informal discussions with key stakeholders from the municipality and civil society	March–May 2024	society and 1 project consultant). 5 key informants.

amounts and product types. This is because there are few organic farming activities in the area and most local organic farmers are small farmers. As a result of this bottleneck, the provision of organic foods is available only in a few restaurants with limited food varieties, and the majority of organic food ingredients used in restaurants are transported from other provinces. The consumer demand for organic foods in restaurants is on the rise. Due to the sustainability concerns and the adoption of eating-out practices of Thai consumers and foreign tourists, there is an increasing demand for organic food in restaurants. Due to this demand, restaurants have tried to secure more (local) organic ingredients to prepare menus for consumers.

4.1.1.2. Proposed intervention strategies. This collaborative practice-based intervention strategy addresses the practice of eating-out. The results of visioning and back-casting workshops revealed the need to develop local organic food production-consumption, more tourism activity and to develop the connection between farmers, restaurants and consumers. Researchers then took the stakeholders' interests into consideration for designing an implementable practice-based intervention. Through in-depth consultations, interviews with local stakeholders, a small practice-based intervention was developed as "Matching local organic farmers with a coffee shop for utilizing local organic fruits in beverages". Phuket *Garcinia* or buffalo orange (also known as Som-Kwai), a local fruit traditionally used for cooking, was identified as a suitable choice as it lacks market recognition but has market potential. Designated as the third Geographical Indication (GI) product of Phuket in 2024 (Stein and Polychronakis 2024; Phuket News 2025), Som-Kwai was a viable candidate for enhancing gastronomic tourism.

4.1.1.3. Implementation and feedback. Through the horizontal collaboration with TOCA to establish new vertical collaboration between the local organic farmer group (Bangwan Development Agricultural Women's Group Community Enterprise) and a café in the Phuket Provincial Prison (Hub Poei) operating for developing skills and vocational training for inmates, the intervention strategy aims at using organic Som-Kwai in the drink menus. In doing so, the local farmer group and the shop were matched to form a new cooperative relationship regarding the provisioning of Som-Kwai. Moreover, new beverage recipes using organic Som-Kwai were developed to ensure a distinctive, flavourful taste. These were about ensuring the availability of organic material for consumption. Lastly, consumers' communication on the health benefits and sustainability (e.g. locality, organic products and supporting local farmers) was used to engage consumers on sustainability issues. This last step was meant to enhance competences and meanings for consumers to drink new local organic drinks. By matching the local farmers with the café and addressing consumers' interests in organic food and sustainability, researchers expected that the intervention would address several aspects of sustainability in the restaurant supply chain, including governance (information sharing and forming partnerships), economics (farmers' income, restaurant competitiveness and local economic promotion), environment (food miles) and socio-culture (local food culture).

4.1.1.4. Reflection on the social practice approach framings. This collaborative practice-based intervention is categorized as a "substituting practice" because it involves replacing conventional fruits with organic ones—a more sustainable choice. Additionally, the intervention represents a shift in "changing how practices interlock" for the eating-out practice in the coffee shop setting. The intervention addresses the connectedness between practices in the restaurant supply chain. Connecting the organic farmers with the café to offer new local, organic drinks altered the farming practice of farmers, the ingredient sourcing practice of the café and the brewing practices of the café. All of these points of connection were changed to match eating-out practices.

4.1.2. Taiwan

4.1.2.1. Case description. Taiwan's case looks into the development of the local soybean supply chain for improving food self-sufficiency and sustainability, facilitated by collaborative efforts between government policies and a soybean enterprise (Taiwan Soybean Farmer, TSF). This case examines how TSF utilizes food and agriculture education as a practice-based intervention to reshape selling and purchasing routines. Historically, rice farming has been deeply embedded in Taiwan's agricultural landscape and identity. However, ongoing urbanization, industrial restructuring (promoting the semiconductor industry), climate change and shifting dietary habits have strained Taiwan's limited water resources. In response to the challenges, the Taiwanese

government enacted the Big Granary Programme in 2016 (Bangkok Post 2025), aiming to encourage farmers to transition from traditional water-intensive crops, like paddy rice, to more water-efficient alternatives. Insights from interviews with the Director General of the Department of Resources Sustainability, Ministry of Agriculture, highlighted the difficulties in the production of domestically produced soybeans—despite their freshness and non-genetically modified status—to compete against cheaper imported soybeans. Therefore, targeted market segmentation strategies are essential to enhance consumer interest in local soybean products. Through financial subsidies, assistance in crop diversification and the development of marketing channels, the Big Granary Programme seeks to guide agricultural production with the national sustainability goals.

4.1.2.2. Proposed intervention strategies. This practice-based intervention strategy targets the consumption practice of local soybean products. Against the policy background, the owner of TSF established a small-scale agricultural enterprise in Beidou township in 2017, specializing in soybean cultivation and production, adhering to organic farming practices. A key informant from the Rural Development and Soil and Water Conservation (providing agricultural industry guidance and subsidies) emphasized the agency's substantial financial support and assistance provided to TSF, significantly facilitating the promotion of soybean food and agricultural education. As a new local FSC, TSF not only focused on soybean cultivation but also emphasized the expansion of local soybean products. The enterprise was founded on three interrelated core values: local agriculture, healthy food culture and holistic agri-food education. Based on these values, the research team employed a practice-based intervention called “Promoting Soybean Plantation and Production through Societal Engagement” for promoting local soybean products. The intervention was manifested as co-creation activities to educate and engage consumers in local soybean cultivation and food-making. Activities included guided eco-farm tours, creating a local soybean diet map, organizing tofu pudding-making workshops and hosting a rural sports festival in soybean fields.

4.1.2.3. Implementation and feedback. This intervention aims to integrate sustainability into everyday practices, school education and community activities, while enhancing local cultural relevance and environmental awareness. It was done by engaging with stakeholders through vertical and horizontal collaboration. Examples include: the local soybean diet map shows local soybeans' life cycle and different soybean products (educating consumers on how soybeans are grown and utilized), hosting several educational programmes and activities on local soybeans (strengthening the relationship of stakeholders and connecting the production and consumption sides) and organizing tofu pudding-making workshops and guided farm tours (redefining the meanings and functions of local soybeans, moving toward active, sustainable consumption practices). These hands-on workshops and farm visits helped consumers engage in permaculture practices and increased environmental stewardship. Additionally, TSF promoted innovative soybean products, such as soybean noodles and long-life soy milk, as practical and sustainable alternatives and applied community-based educational events and school procurement contracts to replace conventional retail channels, reshaping the cultural and commercial pathways of local soybean product consumption. Furthermore, TSF integrated agriculture with broader community practices—education, recreation and health—demonstrating how practices interlock to form a coherent, sustainable lifestyle.

In sum, TSF addresses the three elements of selling and purchasing practices regarding local soybeans: introducing new materials (e.g. local tofus), enhancing competences of consumers to access more sustainable soybean products (e.g. knowledge provision activities and new sale channels), and creating meanings of sustainable soybean consumption (e.g. organized cultural activities). For more than eight years since its inception, the intervention of TSF has brought success to local soybean production as the supply chain network has expanded and the sales have increased.

4.1.2.4. Reflection on the social practice approach framings. This collaborative practice-based intervention is categorized as “changing how practices interlock” because it systematically connects agricultural production with broader community practices—education, recreation and health. TSF's activities—including soybean diet mapping, tofu pudding workshops, guided eco-farm tours and rural sports festivals—strengthen interactions among farmers, local consumers, educational institutions and

governmental agencies. By enhancing collaboration and stakeholder dialogue, previously fragmented agricultural and community practices are integrated into cohesive, sustainable networks and lifestyles. Furthermore, TSF's intervention also embodies "substituting practices" by developing new local soybean products and sale channels, replacing conventional channels with community-driven educational events and institutional procurement channels, thus reshaping cultural and commercial consumption patterns toward sustainability. These collective efforts foster cooperative relationships, improve sustainability competences and deeply embed cultural and environmental values within local community practices.

4.1.3. Germany

4.1.3.1. Case description. The German case in Karlsruhe focuses on the regional FSC of organic vegetables. One issue in the organic produce supply chain in the Karlsruhe region is that organic products reach only a limited number of consumers, despite the presence of a significant number of organic farmers and producers in the region (Council of Agriculture 2017). This reflects a significant gap in communication and logistics in the supply chain—a demand–supply mismatch. Therefore, the researchers and local key stakeholders aim to develop the regional FSC for organic vegetables to not only increase food sovereignty and the sustainability of local businesses, but also to contribute to climate neutrality while providing a healthy diet. To do so, the intervention strategies were set to address the purchasing practices of local canteens.

4.1.3.2. Proposed intervention strategies. Through transdisciplinary collaborations with producers and consumers, the intervention strategy "Establishing regional FSCs for organic vegetables through supply chain analysis, building of networks and accompanying the creation of a bundler" aims to replace conventional products with more sustainable ones and to close gaps in communication, knowledge and logistics. By bringing regional organic ingredients to consumers, especially in canteens, the intervention was developed to transform restaurants' purchasing practices by addressing these gaps at two levels. First, a specific product level—carrots by using one canteen as an example. Second, a more general level was to match consumer demand with production capacity, including other products, thereby increasing production and consumption in the region. To achieve this, the collaborative partners worked to create a regional network, establish direct contact and build trust between producers and consumers.

4.1.3.3. Implementation and feedback. To implement the intervention strategy at the product-specific level, the team facilitated an exchange between a food supplier and the canteen's chef and successfully replaced a portion of the carrots used in the canteen with regional organic products. This change is also being communicated in the canteen to raise customer awareness. As for matching demand with supply, the research team assisted a key stakeholder—KA.Wert—organize a Bioregional Fair, which provided a forum for food production companies in the catering sector. The focus was on expanding direct marketing opportunities and showing the "face", or the story of the farmer behind the products. After consultation with wholesalers, intensive discussions were held on the procurement of bioregional food, and the majority of canteens will source from retailers for the next season. The event included various presentations from practitioners and researchers.

The expected result of the intervention is to establish the collective network of a local organic supplies centred in Karlsruhe for the bundling of organic food (products) in the region—resale and further processing. This will occur through the initiative called FoodCircle (the main stakeholder), a non-profit intermediary to promote sustainable bioregional food supply. In interviews, farmers and canteens expressed a strong need for such a bundler. Additionally, the vision was to set up a central market of regional organic products. The FoodCircle will consist of a food hall featuring regional organic products as unpackaged as possible and with transparent origins, a kitchen, a factory, a bistro and a knowledge and training centre. The core activity of FoodCircle will be the procurement and pre-processing of plant-based products from the Karlsruhe region.

Since 2023, FoodCircle's founders and KA.Wert have been actively collaborating with regional producers of organic vegetables and legumes as well as potential consumers, such as canteens and restaurants. Regional food chains are being developed through a series of workshops and networking events, as well as

a pilot organic vegetable pre-processing project. This work can be seen as preparatory and essential to the FoodCircle establishment.

4.1.3.4. Reflection on the social practice approach framings. Due to the vertical collaboration with different canteens, this collaborative practice-based intervention strategy on purchasing is categorized as a “substitution practice”. This intervention replaces a traditional purchasing practice (buying conventional vegetables to for canteens) with direct purchasing from local organic farmers. At the same time, the intervention also represents “changing how practices interlock”. The intervention is not only to replace conventional products with more sustainable ones, but also to reorganize the FSC through more direct interaction between canteens and consumers with producers and the introduction of an intermediary bundler (FoodCircle). This is a manifestation of new horizontal collaboration. This work seeks to close knowledge and communication gaps, enable more direct sales and purchases of regional products, and improve coordination within and across the supply and demand chains to avoid food waste.

4.1.4. Turkey

4.1.4.1. Case description. The Turkish case focuses on the FSCs of consumer cooperatives in Istanbul. Among many stakeholders from public, private and societal sectors, one major challenge to the sustainable FSC is the farmers' weak bargaining power (Ministerium für ländlichen Raum und Verbraucherschutz Baden-Württemberg 2025). The limited organizational and logistical capacity and lack of cooperative influence weaken farmers' ability to negotiate, restricting their impact on pricing and hindering their access to financial resources. Moreover, the high number of intermediaries increases costs and decreases farmers' share (Keyder and Yenal 2011). Farmers' incomes fluctuate due to climate conditions and macroeconomic instabilities in Turkey. Consumer cooperatives receive no government support nor tax exemptions. These problems are exacerbated by the limited participation of civil society, consumer cooperatives and small-scale producers in agri-food governance, while large corporations dominate the food market. Citizens' assemblies and consumer cooperatives have made attempts to promote short and SFSCs, but continue to have weak institutional capacity and influence.

4.1.4.2. Proposed intervention strategies. The intervention of this project focuses on vertical and horizontal collaboration among stakeholders to strengthen consumer cooperatives, increase access to financial resources for small producers, and build inclusive networks in Istanbul. In the visioning and back-casting activities, the main problem shared by the participants was the lack of adequate dialogue, coordination and trust among stakeholders. Producer cooperative groups complained about high production costs resulting from inadequate support, which negatively affected their communication and cooperation channels with public institutions. They called for more inclusive agricultural policies and public investments. Similarly, municipalities and citizens' assembly groups highlighted the non-participatory governance processes and environmental damages caused by agricultural production. These groups emphasized the need for participatory planning mechanisms and policies, citing exclusionary decision-making processes, rural-urban rift and lack of environmental awareness. The goal of these groups included more transparent, representative and solidaristic food networks. The lack of coordination, solidarity and trust within the FSCs emerged as common problems.

4.1.4.3. Implementation and feedback. The apparent need for strengthened dialogue for cooperation, coordination and trust among stakeholders led the research team to develop an intervention strategy to address the stakeholder cooperation—working together to address sustainability in FSC. The intervention strategy aims to strengthen stakeholders' knowledge and skills in participatory governance, collaborative process management, negotiation and sustainable food policies. To create the material conditions conducive to this intervention strategy, several meetings were planned to bring together stakeholders, including local governments, civil society organizations, producers, consumers, cooperatives and community garden collectives, to be held across several major cities in Istanbul's FSC, including Ankara and Izmir. It is expected that municipalities can be motivated to support SFSCs more effectively, while rendering civil society initiatives like citizens' assemblies, as an important actor of participation for the governance of the SFSC. The intervention strategy is also expected to enhance strategies of small producers

and producer cooperatives in building horizontal expansion, such as creating joint marketing organizations or collaborating with consumer cooperatives. The practice of building relationships based on cooperation and trust is expected to not only result in an economic tool but also build meaning and a culture of solidarity and participatory governance in the SFSC.

4.1.4.4. Reflection on the social practice approach framings. This collaborative practice-based intervention falls under the category of “changing how practices are interlocked”, as it aims to restructure communication and collaboration processes among different stakeholders across vertical and horizontal axes. By increasing dialogue and coordination between producers, consumers, cooperatives, civil society organizations and local governments, the intervention aims to integrate fragmented practices. As the visioning study revealed, current cooperation practices are fragmented, with low trust and collaboration. This intervention aims to restructure these disconnected relationships and better integrate the practices of different stakeholders through meetings. Including consumer cooperatives is expected to create a more sustainable market for producers and strengthen local governments' support for alternative food networks. As producers expand horizontally and cooperatives strengthen relationships, stakeholders can better coordinate existing practices. Increased municipal support for alternative food networks also promotes more integrated and sustainable systems among stakeholders.

4.1.5. Sweden

4.1.5.1. Case description. The case in Sweden focuses on the municipal supply chain for local organic produce. Municipalities in Sweden are legally responsible for providing free meals in schools, and catering for elderly care homes and other selected facilities. Sweden's 290 municipalities prepare a significant portion of 3 million public meals served daily in the country (İslamoğlu 2017). At present, Swedish municipalities rely heavily on global and industrialized food supply chains for public food procurement (Granvik 2012; Östergren and Backlund 2019). Most municipalities purchase produce under one major contract with a large-scale nationwide wholesaler (Stein and Polychronakis 2024). In contrast, purchases from local growers are limited (Stein and Polychronakis 2024). Increasing levels of geopolitical conflict, as well as other ongoing societal environmental crises, have raised questions regarding the resilience and sustainability of municipal food supply chains (Granvik 2012). Further, there is an ongoing expectation that public procurement in municipalities can leverage greater sustainability for both food production and consumption (Statens Offentliga Utredningar 2024). Considering the above dynamics, the focus of the participants was to increase purchases of local organic produce, including vegetables, meat and dairy products, from the municipality. This goal involves significant challenges concerning current governance and practices along the municipal supply chain.

4.1.5.2. Proposed intervention strategies. The practice-based intervention strategy involved the process of developing a prototype game concerning local food for local markets, which could be used by other public agencies. The specific focus of the game was the municipal supply chain for locally grown organic potatoes, and the game primarily addresses the food procurement practices of the municipality. The key functions of the game were to increase vertical and horizontal collaboration between public actors, local food producers and other supply chain and food system actors. Another function of the game was to support the development of public procurement arrangements for the sales of produce that were robust from economic, environmental and social sustainability perspectives. The overall purpose of the game was to bring different practitioners both within and outside the municipality to explore future scenarios for novel public procurement practices in a controlled environment without real-life consequences. The game can therefore be classified as a form of “serious game” in the realm of sustainability science (Molin et al. 2021).

4.1.5.3. Implementation and feedback. The development of the game involved identifying (1) key practices and processes, (2) obstacles and (3) driving factors and needs (short-term and long-term) of different actors in the municipal supply chain. This practice-based intervention also included a pilot purchase of locally grown organic potatoes by the municipality. The practice-based intervention focused on engaging with several social practices that currently influence the viability of the local municipal supply

chain. Selected key practices that were targeted and discussed for the intervention include (1) communication practices, (2) meal design, purchasing and food preparation practices, (3) consumption practices related to public meals and (4) practices involving greater cooperation and collaboration between all municipal supply chain actors and the broader region.

This intervention strategy has the potential to shift decisions in kitchens regarding food preparation and consumption to more sustainable food choices. Bringing the long-term perspective into discussions also had the potential to re-craft the way different municipal actors approach contracting practices for local produce. The expected outcome of the intervention strategy is a reconfiguration of practices along the supply chain toward greater sustainability on the local level.

4.1.5.4. Reflection on the social practice approach framings. From a social practice perspective, the practice-based intervention strategy targets both “re-crafting practices” and “changing how practices interlock”. In relation to “re-crafting practices”, the participants in the game first identified how different elements in the supply chain produce certain outcomes and then sought to “re-craft practices” by bringing different actors together with the aim of reaching more sustainable outcomes. For example, the game motivated participants to consider not only aiming to fulfil their short-term needs, but also longer-term and shared needs. Some of those needs regarding the broader values of local sustainable food production included diversification of local farming practices, enhanced environmental and biodiversity outcomes, stronger local economies and rural development, as well as increased food security and civil crisis preparedness.

In relation to “changing how practices interlock”, the game intervention strategy targeted sequences of practices from the local farmer to the municipal kitchen and the final consumer. It focused on how these practices interlock and interact with different material aspects (e.g. infrastructure, laws and policies), competences (e.g. farming planning and practice, public procurement contracting practices, meal design planning and practice, food preparation practices), as well as meanings (e.g. people's understandings of their own roles, responsibilities and competences). As a result, actors' current practices were challenged, with the potential to shift how they interact and interlock with other actors' practices.

4.2. Cross-case summary and analysis

Considering the five cases described above, Table 2 shows the summary of the five practice-based intervention strategies categorized based on the three framings: (1) re-crafting practices, (2) substituting practices and (3) changing how practices interlock.

All three framings of practice-based intervention were found in the effort to enhance the sustainability of SFSCs. The frame of changing how practices interlock was found to be the case for all intervention strategies, while re-crafting practices and substituting practices fitted only in some intervention strategies. The presentation of the changing how practices interlock frame was the result of the collaborative-oriented nature of the intervention strategies of the five cases. Collaborations engaged different stakeholders who perform different practices in SFSCs; therefore, implementing intervention strategies altered how the target practice interlocks with other relevant practices.

Table 2. Summary of intervention strategies based on practice approach.

Country	Intervention	Practice approach		
		Re-crafting practices	Substituting practices	Changing how practices interlock
Thailand	Matching local organic farmers with an organic restaurant for utilizing local organic fruits in the restaurant's signature drink		✓	✓
Taiwan	Promoting local soybean plantation and production through societal engagement		✓	✓
Germany	Establishing regional FSCs for organic vegetables through supply chain analysis, building of networks and accompanying the creation of a bundler		✓	✓
Turkey	Meetings to bring together local governments, CSOs, producers, consumers and cooperatives across several major cities			✓
Sweden	Game prototype	✓		✓

In sum, through the lens of the social practice approach in transdisciplinary research, vertical and horizontal collaborations to promote sustainability in SFSCs are the process between different stakeholders to organize and negotiate materials; exchange and develop (new) competences; and co-create shared meanings of sustainability to address the targeted sustainable practices. Considering in detail, collaborations in these SFSCs served two functions: 1) expansion of supply chains and 2) (re)organization of supply chains. First, the expansion of SFSCs was seen in the cases of Thailand, Taiwan and Germany, where vertical collaboration was utilized to form new horizontal collaboration for organizing a new SFSC (Thailand), vertical collaboration was formed and transformed into horizontal collaboration (Taiwan) and vertical and horizontal collaboration was orchestrated to formulate a new SFSC (Germany). Supply chain expansions brought about new sustainable food products and new market channels in the SFSCs. Second, the (re)organization of SFSCs was witnessed in the cases of Turkey and Sweden, where the vertical and horizontal collaboration enhanced governance of the SFSC (Turkey), and the vertical and horizontal collaboration reorganized the SFSC regarding public procurement (Sweden). Moreover, the results from these five cases revealed that the vertical and horizontal collaborations promote the expansion of sustainable food supply chains, while the horizontal collaboration crucially steers sustainable food-related practices.

Beyond structural changes in SFSCs, the cases also reveal clear sustainability implications emerging from the collaborative pathways activated by practice-based intervention strategies. Economically, several cases demonstrated strengthened local value retention and improved income stability for farmers, particularly where vertical collaboration expanded market access and reduced dependency on intermediaries (e.g. Thailand and Germany). Environmental, localization strategies, geographical indication schemes and organic sourcing practices contributed to reduced food miles and more sustainable production systems. Social sustainability was reinforced through strengthened horizontal collaboration, which fostered trust-building, collective decision-making and shared responsibility among stakeholders, as observed in Turkey and Sweden. In addition, some intervention strategies created institutional changes, including procurement reform and the establishment of new coordination mechanisms, which enhanced the long-term governance of SFSCs. These multidimensional sustainability implications did not arise independently. They were rather shaped by how practice-based intervention strategies reconfigured collaboration patterns among stakeholders across SFSCs.

The cross-case findings therefore indicate a patterned relationship between intervention modes, collaboration forms, supply chain transformation pathways and their broader sustainability implications. To synthesize these relationships, [Figure 2](#) presents an integrative framework of practice-based interventions and collaborative pathways for SFSC transformation derived from this study.

4.3. Discussion

This transdisciplinary research examined practice-based intervention strategies, grounded in social practice theory, in promoting sustainability in SFSCs across five diverse geographical and socio-cultural contexts: Thailand, Taiwan, Germany, Turkey and Sweden. The intervention strategies developed in this study

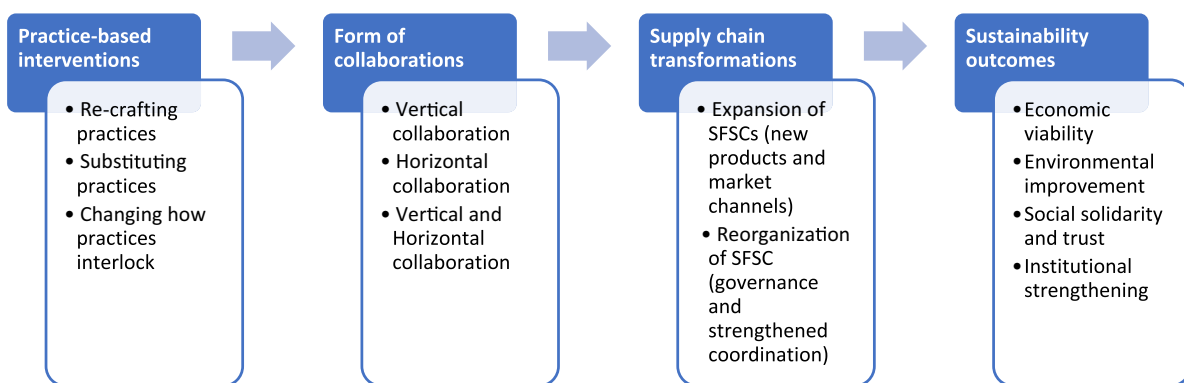


Figure 2. Practice-based intervention strategies and collaborative pathways for SFSC transformation.

emerged through two primary pathways. First, some were co-developed through participatory collaboration between researchers and key stakeholders, a process observed in Thailand, Germany and Turkey. Second, other intervention strategies were developed autonomously by key stakeholders themselves, with researchers playing a more peripheral role, largely observing and offering support, an approach that was taken in Taiwan and Sweden. The contrast between these two pathways demonstrates that practice-based interventions do not necessarily require a uniform participatory approach. Instead, the crucial element is the degree to which the intervention strategy fosters collaboration and shared agency among stakeholders, including producers, distributors, consumers and public or private institutions; thus, aligning with the principles of practice-based transformation. While some scholars emphasized the importance of involving multiple stakeholders in the intervention design phase (Reypens et al. 2016; Hordijk et al. 2025), this research contends that, in the context of practice-based interventions, stakeholder participation remains critical, but can occur at different stages of the intervention process. These stages may range from co-creation and design to implementation and refinement, depending on the local context, institutional capacity and the nature of the intervention itself. This finding resonates with recent transition and sustainability governance research, which argues that flexible and adaptive participation models are often more effective than rigid co-creation (Kazadi et al. 2016), particularly in multi-actor food systems (Smeenk 2023). Similarly, the current study has shown that stakeholder engagement can emerge incrementally during implementation rather than solely at the design stage (Nnadiębulam et al. 2025).

Another emerging insight is that different forms of collaboration can initiate the practice-based intervention strategies for sustainable transformation of food-related practices in SFSCs. In the Taiwanese and Swedish contexts, where strong institutional frameworks and robust public policy supports existed, interventions were primarily driven by governmental arrangements, such as agricultural subsidies and procurement contracts. In contrast, the interventions in Thailand, Germany and Turkey were largely enabled by grassroots coordination and societal networks, highlighting the importance of civic participation, informal institutional arrangements and collaboration. The finding on the importance of collaboration aligns with previous research (Sherman and Ford 2014; Zwart et al. 2021). The results revealed that different forms of collaboration across cases can be organized to formulate and implement practice-based intervention strategies. Despite these differences in collaboration models, all cases have demonstrated the transformative potential of collective action in reshaping practices within FSCs. Regardless of whether collaboration was government-driven or civic-based, several core elements—ongoing negotiation, trust-building, mutual goal and benefit setting and resource sharing among stakeholders—provided the foundation to advance sustainable practices in FSCs, reflecting the importance of interactive and collaborative governance (Piccoli et al. 2021; Roehrich et al. 2024) in arranging and organizing materials, competences and meanings of sustainable practices (Sørensen and Torfing 2016). These findings align with sustainability transition literature, which identifies trust and shared meaning-making as essential drivers of long-term systemic change (Spurling et al. 2013).

Employing a social practices approach as an analytical lens, this transdisciplinary research examined: the dynamic relationships among materials, competences and meanings (held by different stakeholders); and the core elements that shape food-related practices across both micro-level contexts (i.e. Thailand and Taiwan) and macro-level contexts (i.e. Germany, Turkey and Sweden). Across all cases, the intervention strategies engaged with these practice elements in different ways: by introducing new materials (e.g. local soybean products in Taiwan and local organic fruit in Thailand), enhancing stakeholder competences (e.g. procurement and coordination skills in Sweden and Germany) and redefining social meanings (e.g. solidarity and civic responsibility in Turkey's food governance). Based on this, this research has demonstrated that a social practice approach as a framework for designing and analyzing intervention strategies in SFSCs is practical for mobilizing sustainable practices. The framework offers insights on designing and implementing the interventions in an effective manner by indicating different elements required (materials, competences and meanings), recognizing different practices (of different stakeholders) connected to the target practice and allowing the socio-cultural contexts related to the targeted practice into consideration. The results of this study support recent social practice theory research, suggesting that interventions are most effective when they simultaneously address material infrastructures, actor competences and cultural meanings (Malik et al. 2019).

This research illustrates that the frames of practice-based intervention: (1) re-crafting practices, (2) substituting practices and (3) changing how practices interlock (Markoni et al. 2023), are practical to analyze food-related practices at different levels of SFSCs. Each frame offered a useful analytical lens for identifying leverage points in different segments of the FSC. Additionally, the research findings contributed to bridge two important literatures: collaborative governance (e.g. Spurling et al. (2013)) and social practice theory (e.g. Roehrich et al. (2024)). While collaboration literature often emphasized organizational and institutional dimensions (Shove et al. 2012), this study has further elaborated that collaboration could also involve the socio-material dimension, such as ongoing negotiation and shared goals. The dynamic nature of collaboration in this research, characterized by evolving goals, fluid negotiations and emergent routines, has suggested that collaboration should be viewed not only as a means of achieving sustainability but also as an outcome of social practices in its own right.

In this research, all interventions fell under the “changing how practices interlock” category of social practice research, highlighting the connectedness of practices across the food production–consumption chains. This category emphasized how altering one practice could influence and reshape others within the system. For instance, in Germany and Thailand, interventions replaced the procurement of conventional ingredients with local organic alternatives, which subsequently influenced consumer eating-out practices and preferences. Similarly, in Sweden and Turkey, interventions focused on modifying procurement and communication practices by introducing changes to institutional and infrastructural elements, such as public procurement systems and participatory governance mechanisms. These adjustments led to broader shifts in other food-related practices throughout SFSCs. Conforming to Roehrich et al. (2024), these examples illustrated the need for a systematic perspective when designing intervention strategies. This systemic orientation aligns with a previous study, which suggests that niche innovations rarely scale unless they are embedded within broader institutional and infrastructural reconfigurations (Spurling et al. 2013). Recognizing the interdependencies between practices, it confirmed that a multi-stakeholder approach was essential in sustainability transformations of FSCs (Laakso et al. 2021; Van Den Akker et al. 2024). This approach ensures that interventions are not only targeted but also capable of generating cascading changes that promote sustainability throughout the entire system.

Although all five cases mainly involved interventions that changed how practices interlock, the findings also showed that other practice-based interventions—re-crafting and substituting practices—played important but different roles. Re-crafting practices focused on improving existing routines by adjusting elements such as skills, knowledge, or ways of thinking. This aligns with earlier social practice research showing that interventions targeting competences and meanings could enhance the sustainability of everyday practices without fundamentally disrupting existing systems (Shove et al. 2012; Deng et al. 2021). This was illustrated in the Swedish case, where the serious game encouraged procurement actors to reflect on long-term sustainability goals rather than short-term contracting needs. Substituting practices, on the other hand, involved replacing less sustainable practices or inputs with more sustainable alternatives. Similar to findings from studies on organic food provisioning and alternative food networks (Blake et al. 2010; Keller et al. 2016), the cases from Thailand, Germany and Taiwan demonstrated how substitution could make sustainable options more visible and easier to adopt for producers and consumers. However, previous research also cautioned that such interventions often remain limited if broader institutional and supply chain arrangements were left unchanged (Fonte 2013). Consistent with this, the present cases showed that more substantial and lasting change occurred when interventions also reshaped how practices interlock—by improving coordination, communication and collaboration between production, procurement and consumption. In this way, changing how practices interlock helped connect and reinforce re-crafting and substituting practices, supporting more systemic sustainability transitions in collaborative food supply chains.

Despite the insights generated from the collaborative interventions for developing SFSCs in different continents, this research is not without limitations. First, there was no standardized protocol for the development of practice-based intervention strategies across the five cases. As a result, interventions varied significantly in terms of their focus within the SFSCs and methods of development, which may limit the ability to make direct comparisons. Second, the case selection was guided by the participation of five national hubs in transdisciplinary research of the Belmont Forum Sustainable and Resilient Supply Chains (SSCP). No additional scientific criteria—such as representativeness, intervention maturity, or sectoral diversity—were applied in the selection process. Third, the qualitative nature of the study and the relatively early stage of

implementing intervention strategies posed challenges in generalizing the results and measuring the outcomes. It was shown in the results that the intervention strategies in a few cases are still ongoing, making it difficult to foresee the effectiveness and to generalize the results. Nevertheless, the findings highlight the need for policy frameworks that support collaborations of different stakeholders to promote sustainable food supply chains and recognize the context-specific nature of sustainable food practices.

5. Conclusion

This transdisciplinary study examined how practice-based interventions can promote sustainability in collaborative food supply chains across five countries—Thailand, Taiwan, Germany, Turkey and Sweden. Aiming to evaluate practice-based interventions for improving collaborative SFSCs within these diverse contexts, our study demonstrates that the interventions to promote sustainability in collaborative FSCs are found in all three forms of practice-based interventions: (1) re-crafting practices, (2) substituting practices and (3) changing how practices interlock. Notably, the “changing how practices interlock” form is referred in all interventions due to the connectedness of practices of different stakeholders in the FSC. Despite variations in the primary indicators of the interventions—researchers in Thailand and Turkey; a local enterprise in Taiwan; an NGO and researchers in Germany and a municipality alongside researchers in Sweden—key insights emerged: vertical and horizontal collaborations are crucial in organizing and negotiating materials; exchanging and developing (new) competences, and co-creating shared meanings of sustainability, which significantly supports the expansion and transformation of SFSCs.

In conclusion, collaborative practice-based interventions offer promising ways to enlarge and (re) organize FSCs in more engaging and sustainable ways. This research underscores the importance of aligning sustainability efforts not only with the environmental and socioeconomic goals of stakeholders but also with the everyday practices and social realities of actors within the food system. The findings suggest that promoting SFSCs involves more than aligning stakeholder interests; it also requires restructuring practices that shape these supply chains. These findings convey clear messages to policymakers and practitioners of SFSCs that (1) practice-based interventions are a promising approach for promoting sustainable practices in FSCs, (2) designing and/or implementing practice-based interventions requires a collaborative process and a systematic perspective and (3) practice-based interventions can be initiated by any stakeholders, not limited to governmental agencies.

This research has implications for future studies on both the effectiveness and sustainability impacts of the practice-based interventions, as well as their governance. There is a pressing need for both qualitative and quantitative research to evaluate the effectiveness and sustainability impacts for promoting collaborative practice-based interventions at a policy level. Further investigation is also needed to look into governance models and the design of interventions, to better understand how different institutional arrangements and tools can facilitate stakeholder collaboration and support the transformation of sustainable practices across the production-consumption chains. Our findings suggest it is essential to consider the socio-cultural dimensions of specific food practices, as they play a critical role in shaping intervention outcomes.

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Data availability statement

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

Ethics statement

This study has been approved by the committee for research ethics (Social Sciences), Faculty of Social Sciences and Humanities, Mahidol University, Thailand (certificate of approval No. 2023/053.1804) and the METU Human Research Ethics Committee, Middle East Technical University, Turkey (protocol number 0106-ODTUIAEK-2024). For Sweden, Germany and Taiwan, ethical review and approval were not required in accordance with the local legislation and institutional requirements.

References

- Adeosun K, Greene M, Oosterveer P. 2022. Informal ready-to-eat food vending: a social practice perspective on urban food provisioning in Nigeria. *Food Security*. 14(3):763–780. <https://doi.org/10.1007/s12571-022-01257-0>
- Andersson M, Granvik M, Milestad R. 2025. Breaking out of the silos: integrated approaches to food systems planning. Insights from Swedish municipalities. *European Planning Studies*. 34:1–21. <https://doi.org/10.1080/09654313.2025.2599867>
- Arora N, Fatima T, Mishra I, Verma M, Mishra J, Mishra V. 2018. Environmental sustainability: challenges and viable solutions. *Environmental Sustainability*. 1:309–340. <https://doi.org/10.1007/s42398-018-00038-w>
- Ashton L. 2022. A framework for promoting natural climate solutions in the agriculture sector. *Land use policy*. 122:106382. <https://doi.org/10.1016/j.landusepol.2022.106382>
- Azevedo S, Silva M, Matias J, Dias G. 2018. The influence of collaboration initiatives on the sustainability of the cashew supply chain. *Sust*. 10(6):2075. <https://doi.org/10.3390/su10062075>
- Bangkok Post. 2025. Phuket exploits fruit's potential <https://www.bangkokpost.com/thailand/general/3004702/phuket-exploits-fruits-potential>
- Beske P, Land A, Seuring S. 2014. Sustainable supply chain management practices and dynamic capabilities in the food industry: a critical analysis of the literature. *Int J Prod Econ*. 152:131–143. <https://doi.org/10.1016/j.ijpe.2013.12.026>
- Blake M, Mellor J, Crane L. 2010. Buying local food: shopping practices, place, and consumption networks in defining food as “local”. *Ann Assoc Am Geogr*. 100(2):409–426. <https://doi.org/10.1080/00045601003595545>
- Brandt P, et al. 2013. A review of transdisciplinary research in sustainability science. *Ecol Econom*. 92:1–15. <https://doi.org/10.1016/j.ecolecon.2013.04.008>
- Bui S, Costa I, De Schutter O, Dedeurwaerdere T, Hudon M, Feyereisen M. 2019. Systemic ethics and inclusive governance: two key prerequisites for sustainability transitions of agri-food systems. *Agric Human Values*. 36(2):277–288. <https://doi.org/10.1007/s10460-019-09917-2>

- Camel A, Belhadi A, Kamble S, Tiwari S, Touriki F. 2024. Integrating smart Green product platforming for carbon footprint reduction: the role of blockchain technology and stakeholders influence within the agri-food supply chain. *Int J Prod Econ.* 272:109251. <https://doi.org/10.1016/j.ijpe.2024.109251>
- Castelo A, Schäfer M, Silva M. 2021. Food practices as part of daily routines: a conceptual framework for analysing networks of practices. *Appetite.* 157:104978. <https://doi.org/10.1016/j.appet.2020.104978>
- Council of Agriculture. 2017. Council of Agriculture annual report 2016 <https://www.moa.gov.tw/ws.php?id=2506265>
- Dania W, Xing K, Amer Y. 2016. Collaboration and sustainable agri-food supply chain: a literature review. *MATEC Web of conferences.* 58. <https://doi.org/10.1051/mateconf/20165802004>
- Davies A. 2014. Co-creating sustainable eating futures: technology, ICT and citizen–consumer ambivalence. *Fut.* 62:181–193. <https://doi.org/10.1016/j.futures.2014.04.006>
- Davies A, Doyle R. 2016. Transforming household consumption: from backcasting to HomeLabs experiments. In: Willems-Braun IB, editor. *Futures: Imagining Socioecological Transformation.* Routledge; p. 201–212.
- Delormier T, Frohlich K, Potvin L. 2009. Food and eating as social practice—understanding eating patterns as social phenomena and implications for public health. *Sociology of health illness.* 31(2):215–228. <https://doi.org/10.1111/j.1467-9566.2008.01128.x>
- Delormier T, Frohlich K, Potvin L. 2009. Food and eating as social practice—understanding eating patterns as social phenomena and implications for public health. *Sociology of Health and Illness.* 31(2):215–228. <https://doi.org/10.1111/j.1467-9566.2008.01128.x>
- Deng L, et al. 2021. Improving the sustainability of the wheat supply chain through multi-stakeholder engagement. *J Cleaner Prod.* 321:128837. <https://doi.org/10.1016/j.jclepro.2021.128837>
- Diéguez-Santana K, Sarduy-Pereira L, Sablón-Cossío N, Bautista-Santos H, Sánchez-Galván F, Ruíz Cedeño S. 2022. Evaluation of the circular economy in a pitahaya agri-food chain. *Sust.* 14(5):2950. <https://doi.org/10.3390/su14052950>
- Doidge C, Palczynski L, Zhou X, Bearth A, van Schaik G, Kaler J. 2023. Exploring the data divide through a social practice lens: a qualitative study of UK cattle farmers. *Prev Vet Med.* 220:106030. <https://doi.org/10.1016/j.prevetmed.2023.106030>
- Duong L, Kumar V, He Q. 2025. Collaboration for the sustainable food supply chain: a bibliometric analysis. *Bus Strateg Environ.* 34:1287–1301. <https://doi.org/10.1002/bse.4051>
- Fiore M, Galati A, Gołębiewski J, Drejerska N. 2020. Stakeholders' involvement in establishing sustainable business models: the case of polish dairy cooperatives. *Br Food J.* 122(5):1671–1691. <https://doi.org/10.1108/BFJ-04-2019-0263>
- Fonte M. 2013. Food consumption as social practice: solidarity purchasing groups in Rome, Italy. *J Rural Stud.* 32:230–239. <https://doi.org/10.1016/j.jrurstud.2013.07.003>
- Granvik M. 2012. The localization of food systems—an emerging issue for Swedish municipal authorities. *International Planning Studies.* 17(2):113–124. <https://doi.org/10.1080/13563475.2012.672796>
- Hargreaves T. 2011. Practice-ing behaviour change: applying social practice theory to pro-environmental behaviour change. *Journal of Consumer Culture.* 11(1):79–99. <https://doi.org/10.1177/1469540510390500>
- Hordijk D, Andreotti F, van Zanten H. 2025. Food system games for sustainability transformation—A review. *Global Food Security.* 45:100864. <https://doi.org/10.1016/j.gfs.2025.100864>
- Huttunen S. 2019. Revisiting agricultural modernisation: interconnected farming practices driving rural development at the farm level. *J Rural Stud.* 71:36–45. <https://doi.org/10.1016/j.jrurstud.2019.09.004>
- Hyland J, Macken-Walsh Á. 2022. Multi-actor social networks: a social practice approach to understanding food hubs. *Sust.* 14(3):1894. <https://doi.org/10.3390/su14031894>
- İslamoğlu H. 2017. The politics of agricultural production in Turkey. In: Bengi A, Fikret A, Murat A, editors. *Neoliberal Turkey and its discontents: Economic policy and the environment under Erdogan.* p 75–102 I.B. Tauris.
- Kantamaturapoj K, et al. 2022. Constructing practice-oriented futures for sustainable urban food policy in Bangkok. *Fut.* 139:102949. <https://doi.org/10.1016/j.futures.2022.102949>
- Kantamaturapoj K, Marshall A. 2020. Providing organic food to urban consumers: case studies of supermarkets in Bangkok and metropolitan area. *Heliyon.* 6(5):e04003. <https://doi.org/10.1016/j.heliyon.2020.e04003>
- Kazadi K, Lievens A, Mahr D. 2016. Stakeholder co-creation during the innovation process: identifying capabilities for knowledge creation among multiple stakeholders. *J Bus Res.* 69(2):525–540. <https://doi.org/10.1016/j.jbusres.2015.05.009>
- Keller M, Halkier B, Wilska T. 2016. Policy and governance for sustainable consumption at the crossroads of theories and concepts. *Environmental Policy Governance.* 26(2):75–88. <https://doi.org/10.1002/eet.1702>
- Keyder Ç, Yenil Z. 2011. Agrarian change under globalization: markets and insecurity in turkish agriculture. *Journal of Agrarian Change.* 11(1):60–86. <https://doi.org/10.1111/j.1471-0366.2010.00294.x>
- Krishnan R, Yen P, Agarwal R, Arshinder K, Bajada C. 2021. Collaborative innovation and sustainability in the food supply chain—evidence from farmer producer organisations. *Resour Conserv Recy.* 168:105253. <https://doi.org/10.1016/j.resconrec.2020.105253>
- Laakso S, Heiskanen E, Matschoss K, Apajalahti E-L, Fahy F. 2021. The role of practice-based interventions in energy transitions: a framework for identifying types of work to scale up alternative practices. *Energy Research and Social Science.* 72:101861. <https://doi.org/10.1016/j.erss.2020.101861>
- León-Bravo V, Caniato F, Caridi M, Johnsen T. 2017. Collaboration for sustainability in the food supply chain: a multi-stage study in Italy. *Sust.* 9(7):1253. <https://doi.org/10.3390/su9071253>

- Lin F, et al. 2023. The impact of russia-Ukraine conflict on global food security. *Global Food Security*. 36:100661. <https://doi.org/10.1016/j.gfs.2022.100661>
- Liu W, Oosterveer P, Spaargaren G. 2016. Promoting sustainable consumption in China: a conceptual framework and research review. *J Cleaner Prod*. 134:13–21. <https://doi.org/10.1016/j.jclepro.2015.10.124>
- Malik A, Akhtar M, Talat U, Chang K. 2019. Transformational changes and sustainability: from the perspective of identity, trust, commitment, and withdrawal. *Sust*. 11(11):3159. <https://doi.org/10.3390/su11113159>
- Markoni E, et al. 2023. Healthy or environmentally friendly? Meat consumption practices of Green consumers in Vietnam and Switzerland. *Sust*. 15(15):11488. <https://doi.org/10.3390/su151511488>
- Martínez M, Brons A, Wertheim-Heck S. 2024. How do the people that feed Europe feed themselves? Exploring the (in) formal food practices of Almería's migrant and seasonal food workers. *Agric Human Values*. 41(2):731–748. <https://doi.org/10.1007/s10460-023-10513-8>
- Matopoulos A, Vlachopoulou M, Manthou V, Manos B. 2007. A conceptual framework for supply chain collaboration: empirical evidence from the agri-food industry. *Supply Chain Management: an international journal*. 12(3):177–186. <https://doi.org/10.1108/13598540710742491>
- Ministerium für ländlichen Raum und Verbraucherschutz Baden-Württemberg. 2025. Produktions- und Marktpotenzialerhebung und -analyse für die Erzeugung, Verarbeitung und Vermarktung ökologischer Agrarerzeugnisse und Lebensmittel aus Baden-Württemberg 2025. Ecozept. Freising https://mlr.baden-wuerttemberg.de/fileadmin/redaktion/m-mlr/intern/dateien/publikationen/Verbraucherschutz/2025_11_projekt-biobw.pdf
- Molin E, Martin M, Björklund A. 2021. Addressing sustainability within public procurement of food: a systematic literature review. *Sustainability*. 13(23):13395. <https://doi.org/10.3390/su132313395>
- Nnadiębulam J, Harbourne N, Grasso S. 2025. Co-creation in new food development: current trends, challenges, and future directions. *Future Foods*. 12:100832. <https://doi.org/10.1016/j.fufo.2025.100832>
- Omar A, Thorsøe M. 2024. Rebalance power and strengthen farmers' position in the EU food system? A CDA of the farm to fork strategy. *Agric Human Values*. 41(2):631–646. <https://doi.org/10.1007/s10460-023-10508-5>
- Östergren K, Backlund E. 2019. A model for cutting food waste in municipal kitchens: the gothenburg case study. *Advances in Food Security and Sustainability*. 4:193–218. <https://doi.org/10.1016/bs.af2s.2019.07.002>
- Parekh V, Klintman M. 2021. The practice approach in practice: lessons for civil society organizations (CSOs) that work towards sustainable food consumption in Sweden. *Sustainable Production and Consumption*. 26:480–492. <https://doi.org/10.1016/j.spc.2020.12.011>
- Phuket News. 2025. Phuket officials move to protect 'Buffalo Orange' brand identity. <https://www.thepuketnews.com/phuket-officials-move-to-protect-buffalo-orange-brand-identity-85628.php>
- Piccoli A, Rossi A, Genova A. 2021. A socially-based redesign of sustainable food practices: community supported agriculture in Italy. *Sust*. 13(21):11986. <https://doi.org/10.3390/su132111986>
- Reypens C, Lievens A, Blazevic V. 2016. Leveraging value in multi-stakeholder innovation networks: a process framework for value co-creation and capture. *Industrial marketing management*. 56:40–50. <https://doi.org/10.1016/j.indmarman.2016.03.005>
- Roehrich J, Davies A, Tyler B, Mishra A, Bendoly E. 2024. Large interorganizational projects (LIPs): toward an integrative perspective and research agenda on interorganizational governance. *J Oper Manage*. 70(6):875–903. <https://doi.org/10.1002/joom.1280>
- Segura M, Maroto C, Segura B, Casas-Rosal J. 2020. Improving food supply chain management by a sustainable approach to supplier evaluation. *Mathematics*. 8(11):1952. <https://doi.org/10.3390/math8111952>
- Sezer M, Kazancoglu Y, Mangla S, Lafçı Ç. 2024. Smart, sustainable, and resilient food supply chains in disruptive events context. *Bus Strateg Environ*. 33:6156–6171. <https://doi.org/10.1002/bse.3801>
- Sharifzadeh M, Abdollahzadeh G, Damalas C. 2023. Farmers' behaviour in the use of integrated pest management (IPM) practices: perspectives through the social practice theory. *Int J Pest Manag*. 71(3):406–419. <https://doi.org/10.1080/09670874.2023.2227607>
- Sherman M, Ford J. 2014. Stakeholder engagement in adaptation interventions: an evaluation of projects in developing nations. *Climate Policy*. 14(3):417–441. <https://doi.org/10.1080/14693062.2014.859501>
- Shove E. 2003. *Comfort, cleanliness and convenience: The social organization of normality*. Berg Publishers.
- Shove E. 2010. *Beyond the ABC: climate change policy and theories of social change*. *Environment and Planning A: Economy and Space*. 42(6):1273–1285. <https://doi.org/10.1068/a42282>
- Shove E, Watson M, Pantzar M. 2012. *The dynamics of social practice: Everyday life and how it changes*. Sage Publications. <https://doi.org/10.4135/9781446250655>
- Sibbing L, Candel J, Termeer K. 2021. The potential of trans-local policy networks for contributing to sustainable food systems—The Dutch city deal: food on the urban agenda. *Urban Agriculture and Regional Food Systems*. 6(1):e20006. <https://doi.org/10.1002/uar2.20006>
- Siegel K, Lima M. 2020. When international sustainability frameworks encounter domestic politics: the sustainable development goals and agri-food governance in South America. *World Dev*. 135:105053. <https://doi.org/10.1016/j.worlddev.2020.105053>
- Smeenk W. 2023. The empathic co-design canvas: a tool for supporting multi-stakeholder co-design processes. *International Journal of Design*. 17(2):81–98. <https://doi.org/10.57698/v17i2.05>

- Song Y, Qi G, Zhang Y, Vernooy R. 2014. Farmer cooperatives in China: diverse pathways to sustainable rural development. *International Journal of Agricultural Sustainability*. 12(2):95–108. <https://doi.org/10.1080/14735903.2013.858443>
- Sørensen E, Torfing J. 2016. Political leadership in the age of interactive governance: reflections on the political aspects of metagovernance. In: Edelenbos IJ, van Meerkerk I, editors. *Critical reflections on interactive governance*. Edward Elgar Publishing Limited; p. 444–466.
- Spaargaren G. 2011. Theories of practices: agency, technology, and culture: exploring the relevance of practice theories for the governance of sustainable consumption practices in the new world-order. *Global Environ Change*. 21(3):813–822. <https://doi.org/10.1016/j.gloenvcha.2011.03.010>
- Spurling N, McMeekin A, Shove E, Southerton D, Welch D. 2013. Interventions in practice: re-framing policy approaches to consumer behaviour, 56. https://eprints.lancs.ac.uk/id/eprint/85608/1/sprg_report_sept_2013.pdf
- Standal K, Westskog H. 2022. Understanding low-carbon food consumption transformation through social practice theory: the case of community supported agriculture in Norway. *International Journal of Sociology of Agriculture and Food*. 28(1):25–41. <https://doi.org/10.48416/ij saf.v28i1.452>
- Statens Offentliga Utredningar. 2024. Food crisis preparedness for a new age. <https://www.regeringen.se/rattsliga-dokument/statens-offentliga-utredningar/2024/02/sou-20248/>
- Stein M, Polychronakis Y. 2024. Public procurement and local food in Sweden, Denmark and the UK. In: Stein M, Mariani M, Caranta R, Polychronakis Y, editors. *Sustainable Food Procurement*. Routledge. p 38–61. <https://doi.org/10.4324/9781003393023-5>
- Strengers Y, Maller C. 2015. *Social practices, intervention and sustainability*. Routledge.
- Swinnen J, McDermott J. 2020. COVID-19 and global food security. *EuroChoices*. 19(3):26–33. <https://doi.org/10.1111/1746-692X.12288>
- Tay M, Ng T, Lim Y. 2024. Fostering sustainable agriculture: an exploration of localised food systems through community supported agriculture. *Environmental and Sustainability Indicators*. 22:100385. <https://doi.org/10.1016/j.indic.2024.100385>
- Thongplew N, Kantamaturapoj K, Pongkijvorasin S, Tawinnorppanan P, Laborgne P. 2025. Evaluating the sustainability of restaurant supply chains: a case study of organic restaurants in urban Thailand. *Journal of Agriculture, Food Systems, and Community Development*. 14(3):1–20. <https://doi.org/10.5304/jafscd.2025.143.015>
- Toromade A, Soyombo D, Kupa E, Ijomah T. 2024. Reviewing the impact of climate change on global food security: challenges and solutions. *International journal of applied research in social sciences*. 6(7):1403–1416. <https://doi.org/10.51594/ijarss.v6i7.1300>
- Touboulis A, McCarthy L, Matthews L. 2020. Re-imagining supply chain challenges through critical engaged research. *J Supply Chain Manag*. 56(2):36–51. <https://doi.org/10.1111/jscm.12226>
- Van Den Akker A, Fabbri A, Slater S, Gilmore A, Knai C, Rutter H. 2024. Mapping actor networks in global multi-stakeholder initiatives for food system transformation. *Food Security*. 16(5):1223–1234. <https://doi.org/10.1007/s12571-024-01476-7>
- Van Kesteren R, Evans A. 2020. Cooking without thinking: how understanding cooking as a practice can shed new light on inequalities in healthy eating. *Appetite*. 147:104503. <https://doi.org/10.1016/j.appet.2019.104503>
- Welch D, Yates L. 2018. The practices of collective action: practice theory, sustainability transitions and social change. *J Theory Soc Behav*. 48(3):288–305. <https://doi.org/10.1111/jtsb.12168>
- Wertheim-Heck S, Raneri J. 2020. Food policy and the unruliness of consumption: an intergenerational social practice approach to uncover transforming food consumption in modernizing Hanoi, Vietnam. *Global Food Security*. 26:100418. <https://doi.org/10.1016/j.gfs.2020.100418>
- Wickson F, Carew A, Russell A. 2006. Transdisciplinary research: characteristics, quandaries and quality. *Fut*. 38(9):1046–1059. <https://doi.org/10.1016/j.futures.2006.02.011>
- Widadie F, Bijman J, Trienekens J. 2022. Alignment between vertical and horizontal coordination for food quality and safety in Indonesian vegetable chains. *Agricultural and Food Economics*. 10(1):8. <https://doi.org/10.1186/s40100-022-00215-w>
- Wills W, Backett-Milburn K, Roberts M-L, Lawton J. 2011. The framing of social class distinctions through family food and eating practices. *Sociol Rev*. 59(4):725–740. <https://doi.org/10.1111/j.1467-954X.2011.02035.x>
- Wolfson J, et al. 2017. A comprehensive approach to understanding cooking behavior: implications for research and practice. *Br Food J*. 119(5):1147–1158. <https://doi.org/10.1108/BFJ-09-2016-0438>
- Yontar E, Ersöz S. 2021. Sustainability assessment with structural equation modeling in fresh food supply chain management. *Environ Sci Pollut Res*. 28:39558–39575. <https://doi.org/10.1007/s11356-021-13478-5>
- Zwart T, Lamers M, Mathijs E. 2021. Collaborating for change: a social practices approach to partnerships for sustainable food and agriculture. *International Journal of Sociology of Agriculture and Food*. 27(2):73–88. <https://doi.org/10.48416/ij saf.v27i2.79>