

Advancing Sustainable Food Systems: A Systematic Literature Review of the Roles of Short Food Supply Chains

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Abstract

Purpose: This paper systematically reviews the roles of Short Food Supply Chains (SFSCs) in advancing sustainable food systems. The research explores the dynamics, challenges, and impacts of SFSCs and Alternative Food Networks (AFNs), focusing on their integration, governance, and sustainability.

Research Approach: Utilising a systematic literature review methodology, the study integrates multiple theoretical perspectives, including Social Innovation Theory, Institutional Theory, and Resilience Theory. A comprehensive search strategy, aligned with the PRISMA framework, was employed to identify and analyse relevant studies published between 2014 and 2024. The thematic analysis was conducted to identify key themes and patterns.

Findings and Originality: The study identifies critical factors influencing the scaling and institutionalisation of SFSCs, emphasising the importance of robust governance, community engagement, and supportive policies. It highlights the role of consumer-producer interactions in fostering sustainability and resilience. The findings underscore the need for inclusive, participatory, and reflexive governance models to support the growth and sustainability of SFSCs. The paper contributes original insights by integrating diverse theoretical frameworks to provide a holistic understanding of SFSCs' dynamics and impacts.

Practical Impact: The research offers practical implications for policymakers, researchers, and practitioners by providing evidence-based strategies to enhance the sustainability and resilience of local food systems. It emphasises the importance of tailored governance mechanisms, community engagement, and policy support in promoting SFSCs. The insights gained can inform the development of robust frameworks for SFSCs, contributing to sustainable food systems globally.

Keywords: Short Food Supply Chains, Alternative Food Networks, Sustainability, Resilience, Governance, Community Engagement, Social Innovation Theory, Institutional Theory, Systematic Literature Review.

1. Introduction

Short Food Supply Chains (SFSCs), a subset of Alternative Food Networks (AFN) has emerged as crucial components in the transition towards more sustainable and resilient food systems. These networks challenge conventional industrialised food systems by promoting practices that emphasise sustainability, localism, and ethical considerations (Markow et al., 2014; Vittersø et al., 2019; Michel-Villarreal, 2023; Renting, Marsden, & Banks, 2003). SFSCs encompass a variety of models including Community Supported Agriculture (CSA), food hubs, farmers' markets, box schemes, and solidarity purchasing groups (SPGs), each contributing uniquely to local food systems by reducing intermediaries, enhancing transparency, and ensuring fairer value distribution (Anggraeni et al., 2022; Marsden, Banks, & Bristow, 2000). Despite their potential, the integration and scaling of SFSCs require robust governance and

policy frameworks that address operational challenges and foster innovation within AFNs (Reina-Usuga et al., 2020; Polita & Madureira, 2021; González-Azcárate et al., 2023).

This paper aims to explore the dynamics and impacts of SFSCs by integrating multiple theoretical perspectives including Social Innovation Theory, Institutional Theory, Social Practice Theory, Actor-Network Theory, Sustainable Development Theory, and Resilience Theory (Howaldt & Schwarz, 2010; Elkington, 1997; Holling, 1973). Through a systematic literature review, we seek to address the following research questions: (1) What are the key factors influencing the scaling and institutionalisation of SFSCs? (2) How do consumer-producer interactions within these networks contribute to their sustainability and resilience? (3) What governance and policy mechanisms are most effective in supporting the growth and sustainability of SFSCs? By addressing these questions, the paper aims to provide comprehensive insights into the strategies and frameworks necessary for enhancing the role of SFSCs in achieving sustainable food systems globally.

2. Theoretical Framework

We integrate multiple theories to examine the dynamics and impacts of SFSCs. Social Innovation Theory and Institutional Theory help us understand how SFSCs scale and gain institutional support (Howaldt & Schwarz, 2010). Social Innovation Theory explores how innovative practices within AFNs drive social change and sustainability, while Institutional Theory looks at how these networks become formalised. Additionally, Social Practice Theory and Actor-Network Theory analyse the interactions between consumers and producers within AFNs, offering insights into the everyday practices and relationships that influence their success (Shove, Pantzar, & Watson, 2012).

The study also employs Sustainable Development Theory and Resilience Theory to investigate the sustainability and resilience of AFNs. Sustainable Development Theory covers the environmental, social, and economic dimensions, while Resilience Theory examines their capacity to adapt to changes and crises (Elkington, 1997; Holling, 1973). Social Capital Theory and Community Development Theory explore the role of social networks, trust, and reciprocity in sustaining SFSCs and their community contributions (Putnam, 2000). Governance Theory and Policy Network Theory examine governance structures and policy implications affecting AFNs, focusing on stakeholder interactions and civil society's role (Rhodes, 1996). Critical Theory and Systems Theory offer a critical perspective on the challenges SFSCs face, identifying opportunities for innovation and systemic change (Habermas, 1984).

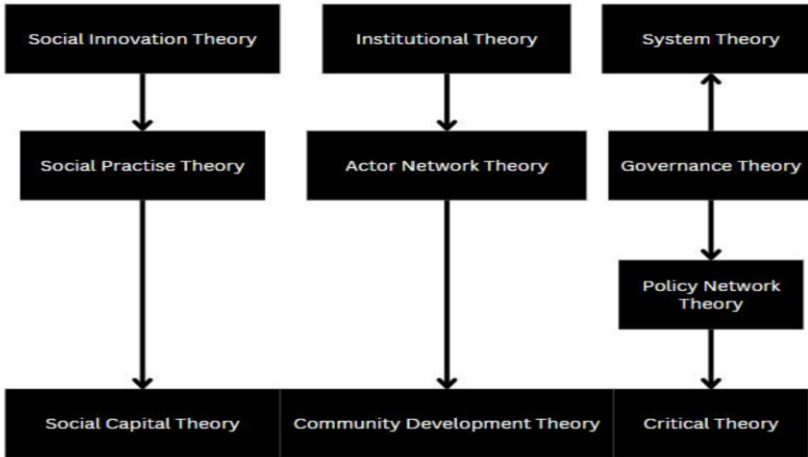


Figure 1: Conceptual Framework (Source: Authors)

This integrative approach provides a holistic understanding of SFSCs, facilitating the development of informed, context-specific strategies for their growth and sustainability. The conceptual framework (Figure 1) links these key theories, highlighting their interconnectedness and the comprehensive approach needed for a thorough analysis of SFSCs within AFNs initiative.

3.0 Methodology

3.1 Summary of Search Strategy and Inclusion Criteria

A comprehensive search was conducted using Scopus and Web of Science to identify studies related to Alternative Food Networks (AFNs) and Short Food Supply Chains (SFSCs). Keywords such as "Alternative Food Networks," "Short Food Supply Chains," and "local food systems" were employed. The inclusion criteria focused on peer-reviewed articles published between 2014 and 2024 that examined consumer perspectives, operational challenges, and sustainability in the context of SFSCs. Only articles in English were considered. Conversely, non-peer-reviewed articles, studies not directly related to SFSCs or AFNs, articles not in English, and non-qualitative and non-empirical articles were excluded. Data extraction was performed using a standardised form to capture each study's objectives, methodology, key findings, and relevance to the review's aims. This methodical approach aligns with the PRISMA framework to ensure a systematic and thorough review process, with 49 papers emerging as valuable for this study (see Figure 2).

3.2: Thematic analysis procedure

The thematic development process involves several key steps to ensure a systematic and comprehensive analysis of AFNs and SFSCs (Braun & Clarke, 2006). Initially, open coding is conducted to highlight key phrases and concepts from the collected data, which are then grouped into broader categories capturing the essence of these codes (Strauss & Corbin, 1998). Preliminary themes are defined based on these categories, ensuring they align with the research questions (Miles & Huberman, 1994). Next, themes are reviewed and refined, merging those that overlap and organising them hierarchically if needed (Ryan & Bernard, 2003).

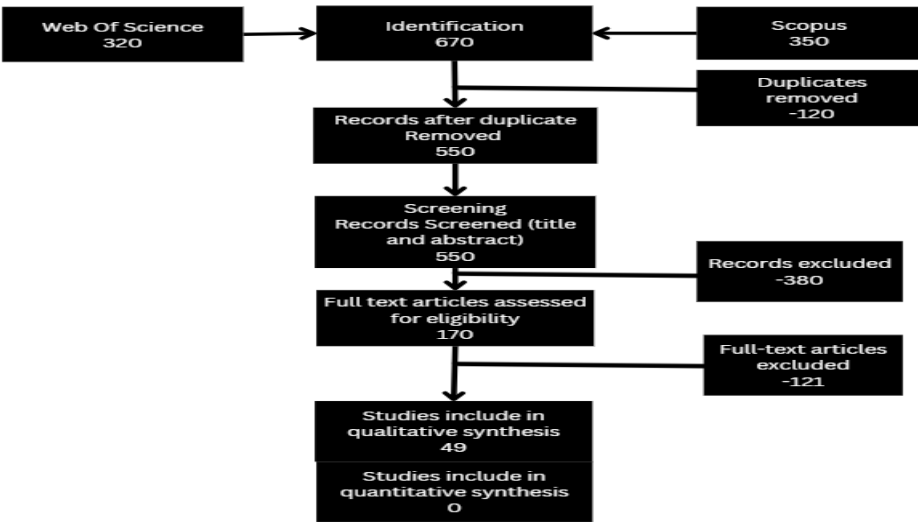


Figure 2: Prisma Framework (Source: Authors)

The validation step involves cross-referencing themes with the annotated articles to ensure all relevant data are accurately represented (Guba & Lincoln, 1989). Detailed descriptions and

illustrative examples from the literature are provided for each theme, and thematic maps are created to visually represent their relationships (Attride-Stirling, 2001). Finally, the themes are integrated to form a coherent narrative, synthesising findings across themes to draw broader conclusions, identify gaps, and highlight practical implications (Creswell, 1998). This process ensures a systematic, comprehensive, and insightful analysis of the literature, providing valuable insights for both academic research and practical applications.

4.0 Results

4.1 Descriptive Results

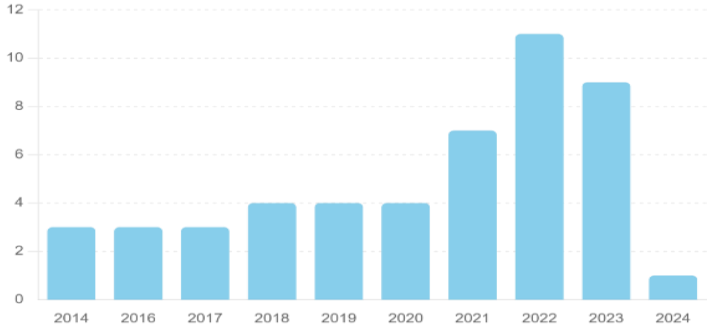


Figure 3: Distribution of publication by year

4.1.1 Distribution of Publication by Years

The distribution of publication years (Figure 3) indicates a growing interest in Alternative Food Networks (AFNs) and Short Food Supply Chains (SFSCs), with a notable increase from 2020, peaking in 2022. This surge likely reflects the COVID-19 pandemic’s impact on global food supply chains, highlighting a shift towards local and resilient food systems.

4.1.2 Journal Analysis

Journal analysis (Figure 4) reveals that "Sustainability (Switzerland)" is the leading journal for AFN and SFSC research, emphasising sustainability. Key journals like "Journal of Rural Studies" and "Sociologia Ruralis" highlight the importance of rural and sociological perspectives. The broad range of journals involved underscores the interdisciplinary nature of this research. Publisher distribution (Figure 5) also suggests high research quality, with reputable publishers like Elsevier and Springer dominating. The interdisciplinary spread of publishers highlights the wide academic interest in AFNs and SFSCs. The prominence of open-access models, particularly by publishers like MDPI, promotes broader dissemination of findings.

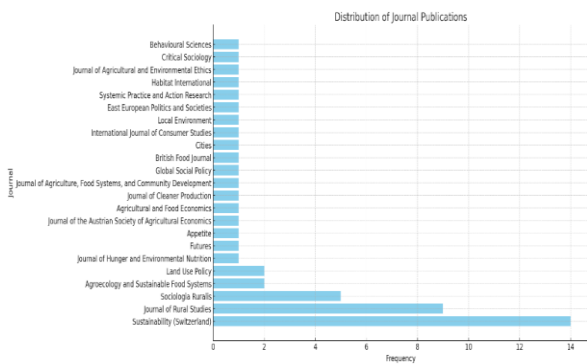


Figure 4: Distribution of Publication by Journals

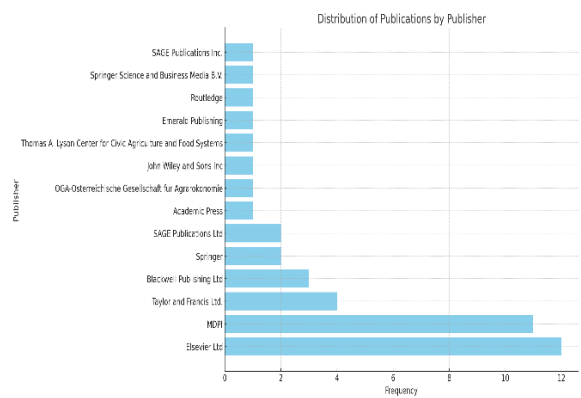


Figure 5: Distribution of Publication by Publishers

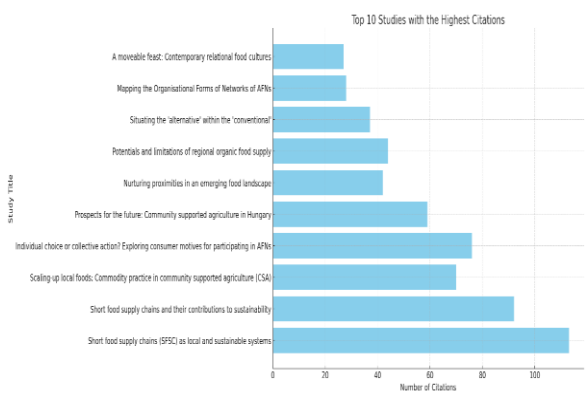


Figure 6: Distribution of publication by top 10 cited studies

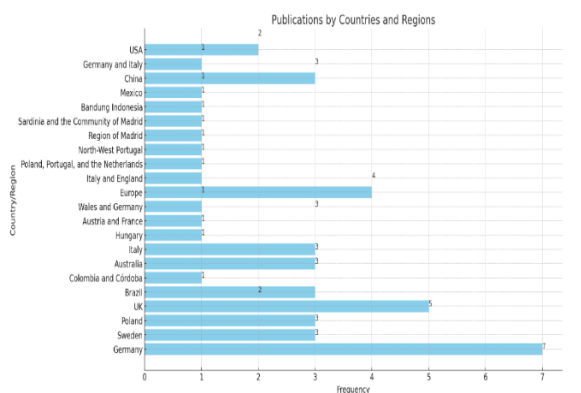


Figure 7: Distribution of Publication by Study Location

4.1.3 Citation and Geographical Analysis

Citation analysis of the top 10 studies (Figure 6) shows a strong focus on sustainability and local food systems, with the leading study receiving 113 citations. The geographical distribution (Figure 7) shows Germany as a leading research hub, with significant contributions from the UK, Sweden, Poland, Australia, and China. This reflects the global relevance of SFSCs, with Europe leading in sustainable food systems research. However, there are opportunities to explore other regions, including Africa, which is underrepresented in the reviewed studies.

4.1.4 Research Methods

The research methods predominantly include structured interviews, case studies, focus group discussions, and participatory observation, with structured interviews emerging as the top method.

4.2 Thematic Analysis of the Reviewed Studies

4.2.1 Scaling and Institutionalisation of AFNs and SFSCs

Studies in this theme explore the growth and integration of Community Supported Agriculture (CSA) and other SFSCs across various contexts. Key findings emphasise the importance of scaling and institutionalising SFSCs to enhance sustainable food systems. Strategies such as

formalisation, policy support, and community engagement are crucial for achieving scalability (Nost, 2014; Bonfert, 2022; Goszczynski et al., 2019).

Table 1: Themes, Frequency, and Study Locations of AFNs and SFSCs Research

Theme	Freq	Study location
Scaling and Institutionalisation of AFNs	8	Maryland, USA; UK; Poland; Austria/France; Italy (2); Columbia/Spain; Mexico
Consumer and Producer Interactions in AFNs	9	Hungary, Brazil, Germany (5), Indonesia -Canberra; Germany/Italy
Sustainability and Resilience in AFNs	6	Adelaide, South Australia, Europe (2), Sardina/Madrid, Eastern China
Community Building and Social Capital:	7	UK (2); EU; China, Poland; Sweden; Germany; Philadelphia
Governance and Policies in AFN and SFSCs	5	Columbia/Spain; Portugal; Madrid; East Yorkshire, England; Indonesia
Challenges and opportunities	7	Brazil; China; Poland; Sweden; Mexico; Germany; Oregon, USA
Innovation and Future Prospects	2	Germany
Customers Engagement and Motivation	3	Germany; Wales and England; Mexico

4.2.2 Consumer and Producer Interactions

The critical role of producer-consumer interactions in fostering sustainable food systems through various SFSCs models is highlighted. These interactions build trust, community engagement, and supportive policies, enhancing the sustainability and scalability of these networks (Balázs et al., 2016; de Souza, 2020; Zoll et al., 2020).

4.2.3 Sustainability and Resilience

This theme reveals the complex interplay between sustainability and resilience in SFSCs. Studies highlight the need for a multifaceted approach integrating supportive policies, community engagement, and adaptability (Markow et al., 2014; Vittersø et al., 2019; Michel-Villarreal, 2023).

4.2.4 Community Building and Social Capital

Social capital plays a critical role in community building within AFNs. Strong networks and trust significantly impact social and environmental outcomes, emphasising relationship-building and cultural sensitivity in promoting sustainable food systems (Furness et al., 2022; Hyland & Macken-Walsh, 2022).

4.2.5 Governance and Policies

The analysis underscores the need for a paradigm shift from traditional market-driven approaches to inclusive, participatory, and reflexive governance models. Recommendations include developing participatory governance mechanisms, providing robust institutional support, and promoting sustainable agricultural practices (Reina-Usuga et al., 2020; Polita & Madureira, 2021; González-Azcárate et al., 2023).

4.2.6 Challenges and Opportunities; Innovation and Future Prospects; Customer Engagement and Motivation

This paper identifies several additional themes in the literature on AFNs and SFSCs that merit further exploration, including challenges and opportunities, innovation and future prospects, and customer engagement and motivation (see Table 1 for an overview of the key themes identified in the literature review, along with the frequency of studies for each theme, their geographical locations). Studies on challenges and opportunities highlight issues such as CSA and social policy in Brazil (Pedrosa & Xerez, 2023), the embeddedness of AFNs in Guangzhou, China (Zhong et al., 2022), and role of social capital in AFNs in Mexico City (Pasquier et al., 2022). Research on innovation and future prospects examines the role of values, standards, and governance in farmers' markets in Oregon (Manser, 2022) and the scaling of agroecology in metropolitan areas like Berlin (Vicente-Vicente et al., 2023). Lastly, customer engagement and motivation are explored through studies on consumer motives in SFSCs (Zoll et al., 2018) and the negotiation of collective identities in CSA networks (Furness et al., 2022). AFNs focus on sustainability, localism, and ethical practices, whereas SFSCs aim to reduce intermediaries between producers and consumers, enhancing transparency and fairer value distribution (Renting, Marsden, & Banks, 2003; Marsden, Banks, & Bristow, 2000). These themes underscore the complexity and diversity of SFSCs and AFNs, highlighting the need for continued research to understand and support their development fully.

5. Discussion and Conclusion

This study has explored the dynamics and impacts of Short Food Supply Chains (SFSCs) through a comprehensive integration of multiple theoretical perspectives and a systematic literature review. The analysis highlighted the critical role of governance and policy in facilitating the scaling and institutionalisation of SFSCs, emphasising the necessity for inclusive, participatory, and reflexive governance models (Reina-Usuga et al., 2020; Polita & Madureira, 2021). The findings suggest that robust institutional support, including financial incentives and infrastructure development, is essential for overcoming operational challenges and fostering innovation within these networks. The interactions between consumers and producers were shown to be vital in building trust and community engagement, which are crucial for the sustainability and resilience of these networks (Zoll et al., 2020).

Linking these findings with broader literature, it is evident that SFSCs contribute significantly to sustainable food systems by promoting localism, reducing food miles, and ensuring fair value distribution (Anggraeni et al., 2022; Marsden, Banks, & Bristow, 2000). The thematic analysis underscored the importance of social capital and community building in enhancing the inclusivity and resilience of these networks (Furness et al., 2022; Hyland & Macken-Walsh, 2022). The study's comprehensive approach, combining Social Innovation Theory, Institutional Theory, and Resilience Theory, provides a holistic understanding of the factors influencing the success of SFSCs. The implications for policymakers include the need to develop tailored strategies that support local food systems, integrate sustainable practices, and foster community engagement (Vittersø et al., 2019). Future research should continue to explore these dynamics in diverse contexts, focusing on the long-term impacts of SFSCs on food security and sustainability (Markow et al., 2014; Vittersø et al., 2019; Michel-Villarreal, 2023).

In conclusion, this study has provided valuable insights into the governance and policy mechanisms necessary for enhancing the role of SFSCs within AFNs in achieving sustainable food systems (Reina-Usuga et al., 2020; Polita & Madureira, 2021; González-Azcárate et al., 2023). By addressing key research questions on scaling, consumer-producer interactions, and effective policy frameworks, the findings contribute to a deeper understanding of how these networks can be supported and expanded. The study emphasises the importance of context-

specific strategies and continuous learning practices to adapt to changing conditions and challenges. Future research should aim to fill the identified gaps, particularly in under-explored regions, and further investigate the interplay between different governance models and the sustainability of SFSCs. This will ultimately help in developing more resilient and equitable food systems globally.

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References

- Anggraeni, E. W., Handayati, Y., & Novani, S. (2022). Improving Local Food Systems through the Coordination of Agriculture Supply Chain Actors. *Sustainability*, 14(6), 3281.
- Balázs, B., Pataki, G., & Lazányi, O. (2016). Prospects for the future: Community supported agriculture in Hungary. *Futures*, 83, 100–111.
- Bonfert, B. (2022). 'What we'd like is a CSA in every town.' Scaling community supported agriculture across the UK. *Journal of Rural Studies*, 94, 499–508.
- de Souza, R. T. (2020). Box-scheme as alternative food network—the economic integration between consumers and producers. *Agricultural and Food Economics*, 8(1).
- Elkington, J. (2001). The triple bottom line for 21st century business. *The Earthscan reader in business and sustainable development*, 20–43.
- Furness, E., Sanderson Bellamy, A., Clear, A., Mitchell Finnigan, S., Meador, J., Mills, S., Milne, A., & Sharp, R. (2022). Communication and building social capital in community supported agriculture. *Journal of Agriculture, Food Systems, and Community Development*, 1–16.
- González-Azcárate, M., Cruz-Maceín, J. L., Bardají, I., & García-Rodríguez, A. (2023). Local food policies from a city-region approach: Fostering the SFSCs in the Region of Madrid. *Cities*, 133, 104158.
- González-Azcárate, M., Silva, V. L., Cruz-Maceín, J. L., López-García, D., & Bardají, I. (2023). Community Supported Agriculture (CSA) as resilient socio-economic structures: the role of collaboration and public policies in Brazil and Spain. *Agroecology and Sustainable Food Systems*, 47(8), 1237–1268.
- Goszczyński, W., Śpiewak, R., Bilewicz, A., & Wróblewski, M. (2019). Between Imitation and Embeddedness: Three Types of Polish Alternative Food Networks. *Sustainability*, 11(24), 7059.
- Habermas, J. (1984). *The Theory of Communicative Action*, Vol. 1, Reason and the Rationalization of Society, (translated by T. McCarthy), Polity Press, Cambridge.
- Holling, C. S. (2007). RESILIENCE AND STABILITY OF ECOLOGICAL SYSTEMS. *Annual Review of Ecology and Systematics*.
- Howaldt, J., & Schwarz, M. (2010). Social innovation: concepts, research fields and international trends. *Open Journal of Social Sciences*, 4(5).
- Hyland, J. J., & Macken-Walsh, Á. (2022). Multi-Actor Social Networks: A Social Practice Approach to Understanding Food Hubs. *Sustainability*, 14(3), 1894.

- Manser, G. M. (2022). Systematizing authenticity and codifying values: The role of values standards and governance at farmers markets. *Journal of Rural Studies*, 96, 154–166.
- Markow, K., Coveney, J., & Booth, S. (2014). Improving Access to Community-Based Food Systems in Adelaide, South Australia: Strategies to Encourage Low-Socioeconomic Status Groups to Participate. *Journal of Hunger & Environmental Nutrition*, 9(1), 113–134.
- Marsden, T., Banks, J., & Bristow, G. (2000). Food Supply Chain Approaches: Exploring their Role in Rural Development. *Sociologia Ruralis*, 40(4), 424–438.
- Michel-Villarreal, R. (2022). Towards sustainable and resilient short food supply chains: a focus on sustainability practices and resilience capabilities using case study. *British Food Journal*, 125(5), 1914–1935.
- Nost, E. (2014). Scaling-up local foods: Commodity practice in community supported agriculture (CSA). *Journal of Rural Studies*, 34, 152–160.
- Pedrosa, A. P., & Xerez, R. (2023). Social policy and environment in Brazil: Why does community-supported agriculture matter? *Global Social Policy*, 23(2), 304–324.
- Polita, F. S., & Madureira, L. (2021). Evolution of Short Food Supply Chain Innovation Niches and Its Anchoring to the Socio-Technical Regime: The Case of Direct Selling through Collective Action in North-West Portugal. *Sustainability*, 13(24), 13598.
- Putnam, R. D. (2000). *Bowling Alone: The Collapse and Revival of American Community*. Simon & Schuster.
- Reina-Usuga, L., Parra-López, C., & de Haro-Giménez, T. (2022). Urban food policies and their influence on the development of Territorial Short Food Supply Chains: The case of cities in Colombia and Spain. *Land Use Policy*, 112, 105825.
- Renting, H., Marsden, T. K., & Banks, J. (2003). Understanding Alternative Food Networks: Exploring the Role of Short Food Supply Chains in Rural Development. *Environment and Planning A*, 35(3), 393–411.
- Rhodes, R. A. W. (1996). The New Governance: Governing without Government. *Political Studies*, 44(4), 652–667.
- Shove, E., Pantzar, M., & Watson, M. (2012). The dynamics of social practice. Department of Sociology, Bowland North, Lancaster University (2011). Seminar.
- Vicente-Vicente, J. L., Borderieux, J., Martens, K., González-Rosado, M., & Walthall, B. (2023). Scaling agroecology for food system transformation in metropolitan areas: Agroecological characterization and role of knowledge in community-supported agriculture farms connected to a food hub in Berlin, Germany. *Agroecology and Sustainable Food Systems*, 47(6), 857–889.
- Vittersø, G., Torjusen, H., Laitala, K., Tocco, B., Biasini, B., Csillag, P., de Labarre, M. D., Lecoeur, J.-L., Maj, A., Majewski, E., Malak-Rawlikowska, A., Menozzi, D., Török, Á., & Wavresky, P. (2019). Short Food Supply Chains and Their Contributions to Sustainability: Participants' Views and Perceptions from 12 European Cases. *Sustainability*, 11(17), 4800.
- Zhong, S., Hughes, A., Crang, M., Zeng, G., & Hocknell, S. (2022). Fragmentary embeddedness: Challenges for alternative food networks in Guangzhou, China. *Journal of Rural Studies*, 95, 382–390.
- Zoll, F., Specht, K., Opitz, I., Siebert, R., Piorr, A., & Zasada, I. (2017). Individual choice or collective action? Exploring consumer motives for participating in alternative food networks. *International Journal of Consumer Studies*, 42(1), 101–110.