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Editorial: Alternative food networks for sustainable, just, resilient and productive food systems

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Editorial on the Research Topic

Alternative food networks for sustainable, just, resilient and productive food systems

The current globalized agri-food system model is increasingly recognized as unsustainable, as it undermines environmental health, social equity, and food security, as well as local food cultures and economies (Lähde et al., 2023). There is growing consensus around the need for a radical transformation of agri-food systems to increase their sustainability and resilience (McGreevy et al., 2022). Alternative food networks (AFNs) can contribute to building sustainable, just, resilient and productive food systems by incorporating local, indigenous and innovative knowledge and bringing together a diversity of actors to connect food production and consumption and create new practices and relationships around food. Despite an increase of AFNs globally, however, they remain a niche, and scientific evidence of their performance is still limited.

To address this gap, this Research Topic features 14 articles (see Table 1) that explore a broad range of AFNs, providing evidence from real-world case studies on their performance, operationalization, challenges, opportunities, and ultimately their potential for food system transformation. The investigated AFNs include local food buying clubs (Benedek), an island-based AFN (Black), alternative wine networks (da Rocha Oliveira Teixeira et al.), fresh stop markets (Denton et al.), multi-actor networks connecting food actors with local administration (Martens et al.), student-run campus food systems alternatives (CFSA) (Deskin and Harvey), community-supported agriculture (Egli et al.; Stehrenberger and Schneider; Verfuert et al.; Middendorf and Rommel), the teikei system in Japan (Kondo et al.), networks representing indigenous and peasant communities (Maysels et al.), charitable AFNs such as food banks and a community food market (Nayak and Hartwell), and a direct food purchasing network (Ušča and Tisenkopfs).

Major findings

The articles in the Research Topic highlight AFNs' contribution to transformation processes that occur on an individual, community and system level. Most articles point to the potential of AFNs for social transformation around food production and consumption, mainly by building social relations. AFNs create connections between producers and consumers (Stehrenberger and Schneider; Verfuërth et al.) that are often long-lasting (Kondo et al.), contribute to community-building (Benedek; Nayak and Hartwell; Stehrenberger and Schneider; Black) and create mutual solidarity and responsibility between the actors involved (Kondo et al.; Ušča and Tisenkopfs).

Furthermore, being involved in AFNs can connect people with traditional culture and knowledge (Black), contributing to its preservation (Maysels et al.). The connection with the region where food is grown is also often emphasized (da Rocha Oliveira Teixeira et al.; Verfuërth et al.; Black), implying opportunities for place-based transformation (da Rocha Oliveira Teixeira et al.).

AFNs also develop strategies and offer spaces to empower their members, supporting active food citizenship (Stehrenberger and Schneider; Kondo et al.). These strategies include transformative learning experiences (Deskin and Harvey), knowledge-sharing (Nayak and Hartwell), consumers contributing their skills (Nayak and Hartwell), educational programs for farmers (Denton et al.), but also learning that naturally occurs during participation, e.g., increased knowledge about food seasonality (Verfuërth et al.).

Empowerment can also be created through inclusionary measures. Although some initiatives may not reach low-income people (Egli et al.; Kondo et al.), other AFN models are more successful in strengthening food security (Nayak and Hartwell; Verfuërth et al.), food justice (Deskin and Harvey), and solidarity (Stehrenberger and Schneider; Verfuërth et al.). The local food clubs studied by Benedek successfully involved many low-income members, and Nayak and Hartwell show that community food markets can complement food banks and are a dignified way for marginalized people to gain access to food. The participation in CFSA and distributing produce at a local food security initiative increased the awareness of food injustice and motivated participants to increase accessibility to CFSA (Deskin and Harvey). Farmers also increased food security by raising solidarity funds or cooperating with local food charity partners (Verfuërth et al.).

While most transformation processes occur on an individual or community level, which can in itself be a leverage point for change (Deskin and Harvey), several authors reported beginnings of broader systemic change. Some AFNs can be considered grassroots movements actively challenging hegemonic structures (Maysels et al.). In some cases, farmers were motivated to invest necessary resources to redesign local food supply chains despite varying capacities (Martens et al.). Using organic and biodynamic production approaches also contributes to the sustainability and resilience of agri-food systems (da Rocha Oliveira Teixeira et al.), and from an ecological perspective such approaches often outperform reference systems (Egli et al.). AFNs also proved their resilience during the COVID-19 pandemic, being able to quickly adapt to disruptions and changing consumer needs (Ušča and Tisenkopfs). Results on the economic performance of AFNs such as CSA are still limited, but existing evidence indicates a high economic viability supporting a spread of these models and their

transformative impact (Egli et al.). Unlike the existing system, AFNs distribute capital instead of concentrating it, benefiting farmers instead of multinational companies (Benedek) and fostering local economic development (Nayak and Hartwell).

At the same time, even within one AFN model, such as CSA, there is a broad spectrum of typologies attracting consumers with different needs. This shows that AFNs are not homogeneous and still have potential to scale out and up and reach consumers with different needs (Middendorf and Rommel). The impact of AFNs is strengthened by coordinated action and networking (Benedek; Verfuërth et al.; Kondo et al.), e.g., with institutional actors: Martens et al. highlight the positive impact of local politicians promoting and legitimizing AFNs in their municipalities.

To drive food system transformation, however, AFNs must overcome several barriers. A common challenge is a lack of resources (da Rocha Oliveira Teixeira et al.), including limited access to funding programs (Egli et al.), educational opportunities for farmers (Denton et al.), and shortages of time, labor, and capital (Maysels et al.). Different obstacles also prevent farmers transitioning from conventional to alternative farming approaches, for example because they do not see sufficient potential in alternative ways of farming (Benedek) or feel unable to change their marketing strategies for reasons of age (Denton et al.). New entrant farmers and agricultural successors are often discouraged to (keep) working in agriculture because of the negative image of farming (Black). Furthermore, AFN actors often cannot fully escape market dynamics (Martens et al.; Maysels et al.), which forces them to act against their values to survive economically (Maysels et al.).

Finally, a lack of community engagement can prevent the success of AFNs (Benedek). If members do not actively participate, they are less likely to develop a sense of responsibility toward their AFN and more likely to leave (Stehrenberger and Schneider). The high dependence on volunteer labor, especially of women, can also lead to burnout (Benedek; Kondo et al.). Overall, there seems to be a trade-off between adjusting AFN practices to consumers' needs and maintaining AFNs original values. While a high effort to participate and a lack of convenience causes members to drop out (Verfuërth et al.), putting more emphasis on consumers' convenience may dilute the social movement orientation of some AFNs (Kondo et al.).

Conclusions

This Research Topic illustrates the broad variety of AFN models and their different approaches to fostering sustainable, resilient, and equitable food systems through local, indigenous, and innovative practices that build strong connections between producers and consumers. Taken together, these efforts highlight an array of strategies that can be mobilized to scale AFNs out and up and, ultimately, build more sustainable and resilient alternative food systems. When scaling, however, AFNs face various challenges within the dominant food system. Overcoming these barriers requires coordinated efforts among diverse stakeholders, better access to resources, and community and institutional support. Even more importantly, however, it requires a shift in discourse from achieving sustainability through incremental change and techno-centric solutions toward a transformational paradigm that centers principles such as sufficiency, regeneration,

TABLE 1 Overview on the articles included in the Research Topic.

Author(s)	AFN under consideration	Country/Region	Method(s)	AFN's contribution to transformation	Obstacles
Benedek	Local food-buying clubs	Hungary	Qualitative	<ul style="list-style-type: none"> - Local food becoming competitive with conventional food - Raising environmental and social awareness of consumers - Solidary practices that improve food security 	<ul style="list-style-type: none"> - Burnout of volunteers - (Economic) barriers for farmer participation - Lack of community involvement
Black	Alternative food production and consumption landscape	Sado island, Japan	Qualitative	<ul style="list-style-type: none"> - Focus on quality of life attracts and retains farmers - Social transformation through community-building - Increased connection to the local environment 	<ul style="list-style-type: none"> - Negative image of farming as barrier for farmer participation - Lack of societal awareness for the benefits of alternative farming - Disadvantages for peripheral farms - Lack of funding and knowledge
da Rocha Oliveira Teixeira et al.	Alternative wine networks	Tuscany, Italy	Qualitative	<ul style="list-style-type: none"> - Catalyzing innovation and collaboration - Adoption of sustainability strategies - Place-based transformation - Contribution to long-term viability of agri-food systems 	<ul style="list-style-type: none"> - Lack of resources and innovation capacity
Denton et al.	Fresh Stop Markets (FSMs)	Tennessee and Kentucky, USA	Quantitative	<ul style="list-style-type: none"> - Replication potential via on-farm education programs - Reduction of marketing costs - FSM farmers as role models for other farmers 	<ul style="list-style-type: none"> - Farmers' age as barrier to change marketing strategies - Limited access to education and information on sustainable Agriculture as barrier for willingness to participate
Deskin and Harvey	Campus Food Systems Alternatives (CFSA)	Montreal, Canada	Qualitative	<ul style="list-style-type: none"> - Participation fosters engaging with food-based injustices - Participation fosters community engagement with marginalized groups - Critical and transformative learning experiences 	<ul style="list-style-type: none"> - Limited focus on food injustice, critical reflection and beyond campus engagement
Egli et al.	Community-supported agriculture	Global	Mixed methods	<ul style="list-style-type: none"> - Positive sustainability performance of CSA - CSA outperform reference systems regarding various sustainability aspects 	<ul style="list-style-type: none"> - Lack of funding programs for CSA farms - Barriers for participation of low-income consumers
Kondo et al.	Japan's nationwide teikei movement	Japan	Qualitative	<ul style="list-style-type: none"> - Building solidarity-based consumer-producer-relationships - Fostering food citizenship 	<ul style="list-style-type: none"> - Increasing consumer convenience decreases social and political activism of participants - Teikei movement is not institutionalized which leads to low visibility and political power
Martens et al.	Public-private collaboration model	South Germany	Qualitative	<ul style="list-style-type: none"> - Public actors as drivers of social innovation aiming at food system transformation - Cooperation with institutional actors fosters AFNs - Farmers are motivated to contribute to transformation processes 	<ul style="list-style-type: none"> - Farmers' lack resources and knowledge - Farmers capacities to innovate are limited - Farmers are constrained by system logics
Maysels et al.	Local food system of small-scale producers	Andean region Cauca, Colombia	Qualitative	<ul style="list-style-type: none"> - Place-based transformation - Great interest by consumers and producers to expand direct purchasing - Building strong consumer-producer-relationships - Conservation of indigenous and traditional knowledge - Challenging the conventional food system and hegemonic power 	<ul style="list-style-type: none"> - Farmers are constrained by system logics - Farmers lack resources (time, labor, capital) to farm differently - High level of food insecurity leads to low demand for AFN schemes - Low-income consumers cannot participate in AFN
Middendorf and Rommel	Community-supported agriculture	Germany	Mixed methods	<ul style="list-style-type: none"> - Visibility of diversity is important for scaling up and replicating CSAs - Diversity of CSAs potentially makes CSA more attractive to broader social groups 	<ul style="list-style-type: none"> - Not all CSA types contribute to just and sustainable agri-food system transformation

(Continued)

TABLE 1 (Continued)

Author(s)	AFN under consideration	Country/Region	Method(s)	AFN's contribution to transformation	Obstacles
Nayak and Hartwell	Foodbanks and a community market	Leicestershire, Shropshire, and Dorset, UK	Qualitative	<ul style="list-style-type: none"> - Community markets can complement foodbanks - Improved access to healthy diets - Empowerment of economically disadvantaged people - Contribution to local economic development 	<ul style="list-style-type: none"> - Limited stock, bureaucracy and limited opening hours restrict food access
Stehrenberger and Schneider	Community-supported agriculture	Switzerland	Qualitative	<ul style="list-style-type: none"> - Active involvement in food production and solidarity practices - Community-building—contribution to a shift in practices, values and food citizenship 	<ul style="list-style-type: none"> - Lack of community involvement leads to decreasing responsibility
Ušča and Tisenkopfs	Direct purchasing (DP) networks	Latvia	Mixed methods	<ul style="list-style-type: none"> - High level of readiness, responsiveness and resilience in case of crisis - Rapid introduction of novel practices as a reaction to disruptions 	<ul style="list-style-type: none"> - Recovery processes after crises may include returning to previous practices
Verfuert et al.	Community-supported agriculture	Wales	Qualitative	<ul style="list-style-type: none"> - Improvement of food wellbeing and food security for low-income CSA members - Members build capacities and awareness around food - Building consumer-producer-relationships - Farmers engage in solidarity actions to increase food security 	<ul style="list-style-type: none"> - Unmatching produce and members' demands might lead to drop-outs

fair distribution, commoning, and care (McGreevy et al., 2022). The AFNs described in this Research Topic offer a promising starting point. Key priorities for future research will be to assess their effectiveness according to these principles, and to identify successful strategies for expanding these models and transferring them between different contexts.

Author contributions

FZ: Writing – review & editing, Writing – original draft, Formal analysis, Conceptualization. SZ: Writing – review & editing, Formal analysis, Conceptualization. LE: Writing – review & editing, Formal analysis, Conceptualization. JV-V: Writing – review & editing, Formal analysis, Conceptualization.

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Conflict of interest

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