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Exploring the growing links between digital agriculture, finance capital, and farmland investors and managers in North America

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Abstract

Scholars have recognised digital agricultural technologies and financialization as important vectors of agri-food transformation, yet little research has examined how these trends mutually influence one another. In this paper, we present case studies of four firms that blend together digital agriculture, farmland investment, and finance capital in novel ways. Veripath is an established farmland investment company, with significant holdings in Western and Central Canada. It relies on digital technologies to remotely monitor the performance of its properties and the farming practices of its tenants. Farmers Edge is a digital agriculture platform and service provider founded in Canada in 2005, with operations spanning North America, Brazil, and Australia. The firm has received significant backing from finance capital and is partnering with U.S. farmland management services provider Farmers National Company to facilitate data flow among farmers, landowners, and investors. Finally, we present the cases of AcreTrader and FarmTogether, two recently launched farmland investment platforms promising to 'democratise' farmland investment by offering investors a seamless online experience for buying rural properties. We analyse how these firms represent an evolving nexus between finance capital and digital agriculture, with implications for agri-food restructuring.

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Introduction

Digital agricultural technologies, including sensors, satellite imagery, decision support systems, smart tractors, and other data-collecting farm tools are shaping the ways in which food is produced. Farmers are increasingly adopting these tools to achieve production efficiencies and to assist with farm management decision making (McFadden et al., 2023). At the same time, the agri-food sector is increasingly a space of institutional investment through the assetization of farmland and the financialization of other segments of the food chain. In North America, the most common model of institutional investment in farmland sees investors purchasing farmland and renting it back to farm operators in an own-lease out model (Desmarais et al., 2017; Fairbairn, 2020). Farmland properties may be grouped together in an investment portfolio or purchased by individual investors as a direct investment.

Scholars have recognised digital agricultural technologies and financialization as important vectors of agri-food transformation, yet little research to date has examined how these trends mutually influence one another. However, this topic is starting to attract the attention of social scientists who are interested in exploring how farmland investors and adjacent actors are using digital agricultural technologies in the process of farmland assetization and management (Duncan et al., 2022; Fairbairn, 2020; Ouma, 2020; Magnan & Sunley 2017; Desmarais et al. 2017). This emergent area of research brings together social science scholarship on financialization, digitalization, political economy, and critical data studies. As digital agricultural technologies continue to develop, new arrangements of actors are materializing to capitalise on their affordances (Duncan, 2023). To elaborate, the properties of digital agricultural technologies, namely their ability to collect massive amounts of real-time data, have gained the attention of a variety of actors in the agri-food space who have unique and vested interests in the opportunities provided by this data. In this case, digital agricultural data offers farmland investors the ability to monitor their investments more closely. Therefore, in this research, we focus on two main actors – ag-tech firms and farmland investors – to analyse their role in reshaping on-going trends within the agri-food sector.

To better understand how digitalization and assetization are mutually reinforcing trends in the agri-food sector, we pose two complementary research questions:

- *In what ways are farmland investors/investment firms using digital technologies as part of their business model, in an effort to increase efficiency and drive down costs?*
- *In what ways are ag-tech firms leveraging their digital technologies and platforms in order to service the farmland investment and management sector?*

To address these research questions, we present case studies of four firms that blend together digital technologies, farmland investment/management, and finance capital in novel ways. Veripath is an established farmland investment company, with significant holdings in Western and Central Canada. It has recently deployed digital technologies to remotely monitor the performance of its properties and the farming practices of its tenants. Farmers Edge is a digital agriculture platform and service provider founded in Canada in 2005, with operations spanning North America, Brazil, and Australia. The firm has received significant backing from finance capital and has partnered with U.S. farmland management services provider Farmers National Company (FNC) to facilitate data flow among farmers, landowners, and investors. Finally, we present the cases of AcreTrader and FarmTogether, two recently launched farmland investment platforms, promising to 'democratise' farmland investment by offering investors a seamless online experience for buying rural properties.

The cases illustrate different paths and entry points for digital technologies in the farmland investment and management sector. Investment management firms and farmland owners are deploying new technologies to assess, valorise, and monitor farmland as a financial asset, while also promoting, in certain cases, the adoption of digital agriculture tools on their portfolios. Meanwhile, digital agriculture technology providers are seeking

strategic partnerships with owners and managers of large farmland portfolios as a method of reaching scale in 'enrolled acres'. At the same time, they are promoting their tools as mechanisms of land and labour surveillance and data production for the 'sustainable management' and valorisation of farmland assets. These trends point to the increasingly important role digital technologies play in the business models of large-scale farmland investors and managers, with implications for competition and scalability in the sector. They also raise questions of 'algorithmic governance' (Danaher et al., 2017) and 'surveillance capitalism' (Zuboff, 2019) as they apply to farmland operators and tenants.

The paper is presented as follows: a concise overview of the literatures examining financialization and digitalization, highlighting recent scholarship on the connection to farmland investment; an explanation of the case study methodology; the results in form of the four case studies; and then the discussion and conclusion focusing on the implications of agri-food restructuring.

Context and literature review

There is a well-established scholarly literature examining the financialization (Burch & Lawrence, 2009; Bjorkhaug et al., 2018; Clapp & Isakson, 2018; Fairbairn, 2020) and assetization (Ouma, 2020) of farmland as part of a broader process of global capitalist restructuring dating to the mid-2000s. While financialization captures the macro-trends whereby financial actors and logics exert increasing influence over agriculture, assetization refers more specifically to the meso- and micro-processes by which farmland is made into a financial asset, that is, a knowable and investible object from the perspective of financial actors, with predictable financial returns and income flows (Ouma, 2020; Birch & Ward, 2022).

Social science scholars have likewise recently begun to develop a substantial literature on the digital transformation of the agri-food sector (Klerkx et al., 2019; Duncan et al., 2021a; Barrett & Rose, 2020). With a debt to early studies of the political economy of precision agriculture tools (Wolf & Buttel, 1996; Wolf & Wood, 1997), the recent literature has examined questions of data ownership and control (Fraser, 2018; Wiseman et al., 2019), sustainability (Lioutas & Charatsari, 2020), labour (Rotz et al., 2019a), and the complex politics of digital agriculture (Bronson & Knezevic, 2016; Bronson, 2022; Rotz et al., 2019b; Duncan et al. 2021b). Through critical data studies, political economy, and science and technology studies (STS), critiques of digital agriculture have emerged. Taken together, these critiques have largely centred around how new digital agricultural technologies are reshaping power relations in the agri-food sector. This research contributes to this literature by investigating the formation of new configurations of power between the emerging actors of agri-tech firms and farmland investors.

Recent work has begun to explore how farmland investors and adjacent actors are using digital agricultural technologies in the process of farmland assetization and management (Duncan et al., 2022; Fairbairn, 2020; Ouma, 2020). Investors use the data generated by digital agricultural tools to help make farmland more 'visible' and 'legible'. For instance, certain investor owners require their farmer tenants to follow corporate standards of care, backed up by remote monitoring of practices and/or data transfer (Duncan et al., 2022). In turn, the data collected help to 'valorise' farm properties by providing a digital track record, including data like crop yields, soil fertility, rainfall patterns, and more. Some large institutional farmland owners like Nuveen have deployed satellite and other remote-sensing technology to monitor crop health, land use, and farming practices on their massive portfolios (2.1 million acres under management globally). Firms like CIBO have specialised in farmland valuation, relying on big data sets, and provide analytics and support to farmland investors (Fairbairn, 2020: 91-2). Meanwhile, farmland real estate platforms like Tillable have promoted the adoption of digital agricultural tools and willingness to share data as criteria for selecting reliable and productive tenants (Duncan et al. 2022.; see also Fairbairn 2020: 92). Tillable promotes the use of farmland data as a mechanism for comparing and benchmarking properties for sale or rent. The development of these types of platforms, as well as others that rely on data to make predictive recommendations for farms, is a main

characteristic of digital agriculture. Platform capitalism can be defined by the creation of platforms that are digital spaces (both hardware and software) designed to enable exchange of capital, or else to create a place for other actors to conduct business (Srinek 2017).

These trends raise questions around power, equity, surveillance, data ownership, and sustainability. Fraser (2019) likens the rollout of precision agriculture tools to a 'data grab', where agricultural technology providers appropriate, aggregate, and analyse the data generated on farms by high-tech machinery and other tools, creating new products, platforms, and markets such 'decision support services', which are sold to farmers and others. The 'data grab' amounts to a form of dispossession affecting farmers to various degrees, depending on their ability to control and make sense of the data they themselves generate. Duncan et al. (2022) have critiqued the deployment of digital technologies by farmland investors and farmland real estate platforms as having the potential to undermine farmer autonomy, increase surveillance, and fuel further farmland financialization and consolidation.

Building on the themes of power, autonomy, and decision making, scholarship on algorithmic rationality and governmentality has proven to be central to understanding technological shifts in agriculture. Algorithmic rationality, driven by certain logics of capitalism, refers to "the reorganization of industry and reasoning around rules-based grounds" (Miles, 2019: 5). Algorithms are designed through a rules-based logic that allows for the rationalization of processes and increased control in decision-making. It is through these highly rationalised rules-based processes that algorithms get elevated as an 'authority' in different social contexts. In turn, algorithmic rationality gives way to algorithmic governance when this logic is generalised (Danaher et al., 2017). In agriculture, this concept has been used to understand the nuanced reliance on proprietary algorithms in farmer decision making (Miles, 2019; Gardezi & Stock, 2021). These concepts are particularly relevant for exploring the algorithms relevant to farmland investment – including digital technologies that use algorithms to influence farmer/investor decision making and to select and promote farmland as investable.

The prospect of digital agricultural technologies improving the sustainability of agri-food systems is contested (Clapp & Ruder 2020; Green et al., 2021). Wolf and Wood (1997) argue that, while precision agriculture tools are marketed as 'greening' modern agriculture, they in fact serve to legitimise the chemical-intensive industrial model. While helping to maximise the efficiency of fertiliser and pesticide application, these technologies do not substantially alter the input-intensive nature of industrial farming. Similarly, while Lioutas and Charatsari (2020) recognise the ability of big data in agriculture to improve output and certain environmental metrics, they question the overall contribution of these technologies to sustainability, given the uneven distribution of benefits to different classes of farmers. There is a need to further scrutinise the role of big data and ag-tech in 'green capitalism' discourses, particularly as this relates to increasingly influential players such as institutional and corporate farmland investors.

It is worth exploring parallels between the capitalist restructuring of other forms of real estate and farmland markets. Sadowski (2019) has examined the growing capital convergence between platform capitalism and real estate. Drawing on the work of Fields (2019) and Shaw (2018), he shows how the increasing penetration of platform corporations into real estate is helping overcome traditional market 'frictions' such as the illiquidity and immobility of real estate. Fields (2019) has proposed the concept of the 'automated landlord' to describe how large institutional owners of Single Family Rentals (SFRs) have deployed digital technologies as a means of managing their geographically dispersed and fragmented property portfolios in the residential real estate market. Under this model, "the management of tenants and properties is increasingly not only mediated, but governed, by smartphones, digital platforms, and apps, and the data and analytics these devices and infrastructures gather and enable" (Fields, 2019). She shows how "[n]ew information technologies enabled investors to aggregate ownership of resources, extract income flows, and securely convey these flows to capital markets." In our case studies, we draw upon some of these developments in the commercial and urban real estate markets to make comparisons to the strategies used by farmland investors and managers

in overcoming market 'frictions'.

Case study methodology

The purpose of case studies is to create a more profound understanding of a social phenomenon through in-depth exploration (Tight, 2010; Yin, 2011). Case study approaches may be used to explore bounded systems while using data collection to systematically gather information on the operations and functionality of the system (Chmiliar, 2010). In this study, we explore the bounded systems of distinct corporate actors, either farmland investment firms or ag-tech firms, and their networks to better understand how they are operating within and reshaping the agri-food sector. Case study methodology is particularly useful as these firms might be unique, but are not necessarily singular, in the sense that there are others like them in existence and continuing to develop. Thus, our exploration of these four firms provides a window into a network of actors and relations that continues to evolve.

Our theoretical framework draws on some of the key ideas presented in the literature review, namely assetization, surveillance capitalism, algorithmic rationality, and platform capitalism. For both the selection of the case studies and their analysis, the overlap of these themes presents insights into the connections between digitalization and financialization. The cases are all connected to farmland assetization, present technologies that provide mechanisms for surveillance, rely on algorithms for decision making, and present platforms for data transactions. Bringing these themes together and describing how they are enacted through four case studies helps to shed light on the financialization-digitalization nexus.

Our cases were purposively selected to reflect what we hypothesised to be the mutually constituted relationships between farmland investment and ag-tech firms. Therefore, we selected a private equity farmland investor (Veripath), an ag-tech firm (Farmers Edge), and some emerging actors that are combining these two roles by developing digital platforms specifically for farmland investment (presented together – AcreTrader and FarmTogether). Geographically, we selected cases operating in Canada and/or the United States. Digital agriculture firms and farmland investors appear to be mostly interested in the typical highly capitalised, industrial farms found in Canada and the United States. As case studies are often informed by data collection from multiple sources (Castree, 2005), we collected and systematically documented material found online related to these firms including: annual reports, web pages, blog posts, media articles, and press releases.
The materials were analysed and coded thematically to produce four case studies. We focused on how these actors are deploying digital agriculture and platform technologies to pursue their business goals in the distinct but overlapping farmland investment and ag tech spaces. We began with a deductive coding approach to develop qualitative descriptive characteristics of each firm by gathering details on its business model, financial backings and holdings, and growth trajectory. We then used an inductive coding approach for thematic analysis. Examples of the codes that emerged from this round of analysis include sustainability discourses, targeted investment audiences, key partnerships, and details of digital technologies used by each firm. The qualitative results of each of the case studies are presented below.

Case studies

Veripath

Veripath Farmland Partners (previously AgCapita) is a well-established private equity farmland investor that has developed several open-ended farmland funds since 2007. Today, it has a portfolio of 110,000 acres across 30 locations in Canada, with approximately $CAD275 million under management (Veripath, 2023). Like other firms involved with farmland assetization, it uses a strictly 'own-lease out' strategy in its portfolio, renting all its parcels to tenant farmers and preferring not to assume any of the production-related risks of crop farming.

In recent years, the firm has increasingly turned to digital technology to automate monitoring and surveillance

of its farmland portfolio. Specifically, it uses satellite imaging combined with NDVI (Normalised Difference Vegetation Index) technology to remotely monitor plant health and farming practices, such as tillage and crop rotation. The approach has been described as "a proprietary land management system that leverages an in-house software platform combined with satellite monitoring and AI crop analysis" (Kiernan-Stone, 2022).

Veripath justifies its monitoring practices by means of a sustainability discourse, to ensure that its tenants use sound farming practices. It has developed a Responsible Investment Policy that is aligned with the UN's Principles for Responsible Investment in farmland (Veripath, 2021). Its monitoring processes are governed by a set of 'best practices' agreed to by renters, and which includes annual reporting and an annual visual inspection conducted in-person or by satellite – demonstrating the types of surveillance enabled by digital technologies. As Veripath has a concern about farmers' practices, renters must agree to updated agrology testing. The company promotes Conservation Agriculture (CA) practices, including direct seeding, cover cropping, and crop rotation, to which renters must commit through a statement of best practices. Veripath links CA to positive environmental outcomes, including sustainability (conserving and enhancing natural resources), biodiversity, and carbon capture (Veripath, 2021). It thus promotes a version of 'green capitalism', where highly capitalised farmers partner with the farmland investor to continually improve farming practices in line with corporate sustainability goals.

According to the company, its monitoring systems have been developed to drive down costs by replacing 'boots on the ground' inspection with remote surveillance of tenant farming practices (Cross, 2023). This has been made possible by the decreasing cost of these digital technologies (Bloomberg News, 2021). Presumably, this in turn drives down the costs of managing the portfolio and improves the overall profitability of the investment. The company emphasises the scalability of its systems, which aligns with its ambitious expansion goals. Quoted in a farm press article, Veripath's CEO Stephen Johnston explains:

> *You can see, that as we expect to get to 300,000 or 400,000 acres, and you're making these measurements for every (quarter section), … that it would really be practically beyond the capability of human beings to cost effectively and reliably manage this … (Veripath's) system does all of this. It's all automated. This is a really big competitive advantage because you want to own and not operate. But if you don't operate, your monitoring has to be impeccable. (Cross, 2023)*

As Fairbairn (2020: 91) has pointed out, "advances in data collection, storage, and analytics promise to remove the upward limit on landownership consolidation", which historically was limited by the constraints of monitoring vast territories. A unique feature of Veripath's monitoring system is automation. Specific events detected by satellite imagery will trigger a notification to the farmland owner. As CEO Stephen Johnston explains: "We've never had any farming practice problems, ever, in 16 years, but if the farmer were to say he grew canola and the satellite were to say it was wheat, the system would automatically flag that and ask for an explanation" (as cited in Cross, 2023).

The strategy deployed by Veripath is comparable to the 'automated landlord' model developed by institutional investors in the Single Family Rentals (SFR) sector in the U.S. (Fields, 2019). Investors have assembled and managed large portfolios of SFR units in part by deploying digital technologies (i.e., algorithmic rationality) for property evaluation and acquisition (see below) and by automating several aspects of property management (lease signing and renewal, rent collection, maintenance requests, for instance). As Fields (2019) has argued, digital technologies allow institutional owners of SFRs to efficiently monitor and manage their large, spatially expansive portfolios. Furthermore, the data collected and analysed from each unit helps the firm attract investors:

> *Bespoke technology platforms support such visibility into workflows and make field operations transparent to executives. From an upstream perspective, this visibility and transparency is desirable to credit rating agencies, the banks putting together securitizations, and investors, because it demonstrates an ability to meet reporting requirements and, across different operators, lends the ability to generate a larger body of data about the asset class as a whole (Fields, 2019).*

In a similar way, the monitoring and data collection activities of major farmland investors will help valorise not only their own portfolios but contribute to the ongoing standardization and benchmarking of farmland as an asset class.

Farmers Edge

Farmers Edge is a Canadian firm offering comprehensive digital agriculture 'solutions' to farmers and their partners. It provides both hardware (i.e., sensors, weather stations, telematic devices) and software (its own fully integrated platform called FarmCommand) in a package designed to produce a wide range of data, including: forecasts, historical data, and notifications related to weather; satellite imagery (for determining crop health and pest/disease identification); and equipment tracking (including productivity, working time, fuel consumption, and area covered). These data are used for benchmarking, predictive modelling using artificial intelligence (AI) and machine learning, planning, reporting, and analytics. Additionally, the FarmCommand platform automates crop insurance reporting and claims and is integrated with the company's Smart Carbon programme for monetizing carbon credits. The former CEO of the company described its business model as "decision ag", where the firm not only collects vast quantities of data through its devices but supplies the algorithms and data analytics to provide production advice to users (Bronson, 2022: 115). In line with other forms of platform capitalism (e.g., Google or Facebook), it attempts to provide an all-in-one platform for farm needs.

The company was founded in 2005 and has made numerous acquisitions over the years. It has received substantial financial backing from Fairfax Financial Holdings, a publicly traded Canadian insurance and asset management firm, which initially invested in Farmers Edge in 2015. By 2020, Fairfax had invested $CAD376 million in the digital ag firm. In 2021, Farmers Edge launched an IPO with a share price of $CAD18.80, raising $CAD144 million (Fairfax, 2021). At its peak in 2020, the company had 23 million acres enrolled in its various programmes (Farmers Edge, 2020b).

In 2020, Farmers Edge launched a new partnership with Farmers National Company (FNC), a U.S. landowner services firm with over two million acres under management. According to a press release, "The partnership equips landowners and operators with access to a wealth of digital and agronomic resources designed to support daily operations, improve sustainability, and create a seamless digital connection between stakeholders" (Farmers Edge, 2020a). FNC cited rising land prices and competition as motivation for the partnership. The firms touted the partnership as a mechanism to establish transparency and trust among stakeholders such as renters and landowners. At the same time, the collaboration is intended to generate extensive data about land and farming operations to support the financial value of farm properties.

> *"Leasing land is a high-stakes investment for everyone involved," says Wade Barnes, Farmers Edge CEO and co-founder. "Landowners want to ensure their assets are protected for generations to come, and operators need to be able to demonstrate their commitment to the land while also turning a profit. By working together with FNC, we're equipping their clients with innovative solutions that improve land value while also bringing a new level of connectivity and decision-support for sustainable crop production. Digital agriculture is reshaping the industry, and farm real estate is no exception; I predict we will see a significant shift in the importance it plays in operator selection, conservation requirements, and land prices in years to come" (emphasis added). (Farmers Edge, 2020a)*

The status of the partnership between Farmers Edge and FNC is unclear. For instance, neither company reports how many acres in FNC's portfolio are managed using FarmCommand. It is also unclear if FNC's farm managers and tenants are required to use FarmCommand or whether they access it at preferential rates. In 2022, FNC announced a partnership with a different digital agriculture platform provider, Bayer, owner of Climate FieldView (FNC, 2022). It is not clear if Climate FieldView has replaced or serves to complement FarmCommand as a preferred platform for FNC's farm managers.

Despite the unknowns, this example shows how digital agriculture companies may leverage their platforms

as an attractive product for farmland services companies and asset managers to monitor and valorise their portfolios on behalf of their clients. Deals such as these are appealing to digital agriculture platforms as a way to enrol a large number of acres into their programmes. As a platform-based digital agriculture company, Farmers Edge has built its business model on growing the number of acres enrolled. For the farmland services company, the use of digital agricultural tools provides its clients, farmland owners, with detailed information on the agricultural performance of their assets and potentially valuable information about farmland operators (whether tenant farmers or in-house farmland managers). We can expect further strategic deals between major farmland investors/managers and specific digital agriculture platforms or providers. This case study of a partnership between a digital agriculture company and a farmland service company is a clear example of how the trends of digitalization and financialization are finding synergies.

In recent years, Farmers Edge has faced serious financial struggles, burning through large amounts of cash and seeing a decline in the number of acres[1] enrolled in its programmes (Fontes, 2022). In July 2022, it received a $75 million loan from Fairfax Financial Holdings, its majority shareholder. As of late April 2023, the company's stock price had plummeted to $CAD 0.18, less than 1% of its price at its initial public offering. According to its financial statements, it lost nearly $CAD60 million in 2022 (Fontes, 2023) and Fairfax Financial Holdings, its majority shareholder, reported a $CAD133 million write-down on its balance sheet because of the company's struggles (Fairfax, 2022). Clearly, the financial struggles faced by Farmers Edge put its business model into doubt.

AcreTrader and FarmTogether

AcreTrader and FarmTogether are two relatively new farmland investment companies using an online platform structure to raise capital, facilitate investments, and market their 'product'. Each provides an extensive library of promotional material targeted towards investors, with articles on the agriculture sector in general, farmland economics, investing principles, and digital agriculture. These firms deploy many of the usual tropes and discourses of the farmland investment 'thesis': growing food demand, pressures on the supply of farmland, low correlation to stock markets, inflation hedging, and portfolio diversification. AcreTrader is backed by several venture capital funds, totalling $USD80 million, though it explicitly distances itself from some of the more controversial aspects of start-up business culture: "We have a sound, long-term-focused business model that doesn't fit the Silicon Valley mold of 'growth at all costs'" (Malloy, 2023). However, it has been highly characteristic of Silicon Valley to focus efforts on developing new platforms that circulate novel forms of capital.

These platforms differentiate themselves from other farmland investment firms by offering a seamless online experience for browsing properties, reviewing documents and information packages on specific deals, and investing. In other words, their business model is investing in farmland at the 'click of a button', with an appeal to transparency and ease of use for investors. This is enabled by providing an online portal to execute farmland deals, with functionality that includes supplying documentation for due diligence, electronically signing documents, and transferring money. Investors can then access information about their farmland portfolio – including crop reports, and agronomic and financial performance metrics – through an online dashboard. FarmTogether describes its model as follows:

> *[T]hrough the FarmTogether platform, investors can review each property's risk/return profile, fee, and ownership structure, on-farm sustainability practices, legal documents, and more. Our platform makes it easy for investors to add farmland to their portfolios through low investment minimums and without having to conduct their own on-site due diligence— we take care of this for you.*
>
> *We provide a seamless and secure online experience, where account setup, accreditation document upload, and payment selection can be completed in minutes. Once the investment is confirmed, investors can track their portfolio's performance over time within the FarmTogether portal. (FarmTogether, 2023)*

[1]At the end of the 4th quarter of 2022, enrolled acres were at 9.8 million (down from peak of 23 million): https://farmersedge.ca/investor-relations/reports-and-filings/

These firms tend to target 'retail investors', that is individuals who qualify as accredited investors based on minimum thresholds for annual income and/or net worth[2].

Both firms suggest that they are 'democratizing' farmland investment by making it easier and more accessible to retail investors. In part, the claim is based on their offer of 'fractional ownership' and 'crowdfunding' models that allow investors to own a share of a property with relatively modest investments, as low as $USD15,000 for certain types of deals. This structure differs from that offered by established fund-based farmland investment schemes, where investors buy units in a portfolio of farmland acquired by the asset manager, such as investment firms like Nuveen or Hancock Agricultural Investment Group. FarmTogether offers a variety of options for investors, including individually managed accounts, fractional ownership/crowdfunding, and funds. AcreTrader seems to only offer 'fractional ownership' of individual properties. The company identifies target properties then creates an entity, e.g., a limited liability company (LLC) to conduct due diligence and undertake to purchase the farm. Interested investors are invited to buy shares in the LLC, giving them a financial interest in the farm property, but without holding legal title.

Both firms use AI and other proprietary technologies for evaluating and ranking/scoring potential deals, based on their access to large data sets related to farmland. The use of digital tools is central to the firms' ability to efficiently evaluate and process a large number of potential deals based on factors such as physical/spatial land characteristics, soil analysis, financials, yields, farm infrastructure, and more. In turn, the data is retrieved from/generated by satellite imagery, remote sensing, digital maps, and other technologies. AcreTrader describes its evaluation process thus:

> *We have a thorough process of reviewing land on a state, county, and local level, and only accept a very small percentage of the land parcels we examine. Our review process includes both a comparable approach and income-based approach. We use a myriad of advanced software tools, including our proprietary comprehensive mapping and data science tools, and in-depth valuation techniques to account for all the unique aspects of each piece of property. A member of our team will almost always conduct an on-site visit, or, at the very least, we have a local land manager go out for us. (AcreTrader, 2023).*

For its part, FarmTogether describes its due diligence process as follows:

> *Through both our proprietary sourcing technology and strategic partnerships, we review a mix of on-market and off-market opportunities across the United States. … [W]e conduct a property analysis incorporating over 150 data sets from public, private and proprietary data sources. We then apply our proprietary technology and investment expertise to zero in on the best investment opportunities in our target geographies and crops. Finally, we then look at all the due diligence items relevant to the specific farm. We use a 105-point checklist to evaluate each property, which includes soil, leaf, water, capital improvements, title, local legislation, depth of the supporting farming ecosystem, cost of inputs, farmworker wages, and more. (FarmTogether, 2023)*

These processes are similar to the strategy deployed by institutional owners of large portfolios of SFRs, observed by Fields (2019), who notes that these firms use an 'acquisition engine' or 'acquisition platform', based on their own algorithms, to evaluate and select properties. The strategy allows the firms to optimise the selection and acquisition of new properties based on projected earnings calculated from a myriad of nationally collected data points. Again, this highlights the role of algorithmic governance in decisions around what types of farmland are considered a worthy investment.

FarmTogether specifically touts the deployment of digital agriculture technologies on its properties as a way to build the value of the farms.

> *As investors, knowing that good farmland is a scarce resource, our priority is always to identify and invest in the properties that demonstrate great potential, but also to focus on where we feel we can build value—including by implementing digital innovations on the farm. … our longer-term vision is to put the digital transformation of agriculture to work on the farms we own, making their productive potential and longevity*

[2] To qualify as an accredited investor, an individual must have an annual income of over $US 200,000 or a net worth of over $USD 1 million, not including their primary residence.

> *stronger yet. While we believe the future of farming is regenerative, we also believe it is heavily digital. … Armed with the power of data, we're looking to inject capital into agriculture such that farmers can more capably feed people and care for the planet into the future. (Wensley, 2020)*

Thus, the firm's philosophy combines 'regenerative agriculture' and digital agriculture in a vision of investors putting capital to work for both people and the planet. This framing is consistent with the 'techno-finance fixes' typical of other contemporary agri-food start-ups, where boosters invoke the power of finance combined with digital technologies to solve global problems as a way of motivating investment in the space (Sippel & Dolinga, 2022).

The introduction of these farmland investment platforms parallels developments in the commercial and residential real estate sectors, where there is a growing convergence of digital technology, finance, and traditional market actors. Shaw (2020) defines Platform Real Estate "as particular arrangements of user agencies within interoperable layers of digital technologies that produce and offer certain paths of action to real estate market participants." As with all digital platforms, the firms working in this space create market value by connecting users in new ways and collecting, analysing, and packaging huge quantities of data that can be monetised. In the farmland real estate market, there are signs of novel platforms connecting farmland owners, investors, and market intermediaries through new digital tools and interfaces.

Discussion and Conclusion

The cases we have presented here show novel ways in which digital technologies are being integrated into the farmland investment landscape, and in turn how the financialization of farmland may help drive the digitalization of agriculture.

For farmland investment managers, remote sensing technologies, satellite imagery, and GPS guidance are becoming important techno-fixes to problems of surveillance and monitoring. In effect, these technologies lead to a form of spatial compression allowing farmland investment managers to keep a 'digital eye' much more easily and cheaply on their vast portfolios. These findings are consistent with Duncan et al. (2022), who found that visibility was a key attribute of digital agriculture that appeals to farmland investment firms. As this becomes a competitive advantage in the field, we can expect this approach to spread and the costs of portfolio monitoring and surveillance to decrease, and for increased adoption of these technologies on farms. At present, farmland investors have automated only limited functions (e.g., crop verification), but perhaps others could soon be as well (e.g., lease renewal, setting rental rates).

The introduction of these technologies raises ethical questions for farmer tenants and operators, who may now be subject to remote surveillance. What consequences could there be for farmers when their actions (or other variables) trigger a notification or red flag? Immediate economic consequences might include the cancellation of leases, but tenants could also conceivably face reputational damage based on poor performance or adverse events in the field. What recourse will tenants have if they dispute the events or decisions that may trigger a notification? The deployment of these technologies thus raises questions of algorithmic governance and surveillance capitalism as it applies to farm operators (tenants, contract farm operators, or in-house operators). With the number of rented farmland acres in Canada increasing, there is a need to create transparent data governance mechanisms that clearly state the consequences of entering into a rental agreement with a landlord that uses digital surveillance (Statistics Canada, 2022). Additionally, with the cost of farmland rental rates increasing in some areas (Munch, 2023), farm operators who object to surveillance will likely be displaced. In other words, farm tenants who do not wish to be monitored risk being passed over if another available tenant willingly agrees to using surveillance technologies.

Farmers are increasingly competing for land and are concerned over the concentration of farmland in the hands of institutional investors (Magnan et al. 2022). The balance of power in leasing is often dependent on who the

landlord is. With institutional investors as landlords, they have a keen interest in surveilling their investments and controlling more aspects of production than many 'traditional landlords'. For instance, landlords might previously have been city dwellers who had inherited farmland but did not have the background or interest to manage it, and who therefore rented it out. However, as landlords increasingly become large institutional investment firms that employ digital surveillance tools, the scales are perhaps even less favourable to renters.

Farmland investors today are using digital technologies, including AI, to analyse farmland properties. They are harnessing the power of big data to more efficiently make investment decisions, not only about which properties to buy, but also around investment exit. Again, this is likely to confer competitive advantages on the first adopters of such technologies. In turn, each firm's proprietary evaluation algorithm becomes part of the value proposition for the farmland investment firm. As owners of large farmland portfolios, farmland investors may also be using farm-operator data (collected by farm machinery and on-farm sensors) to inform decisions such as tenant selection and lease renewal.

Farmland investment companies are also digitizing the investment process itself by offering a seamless online experience for investors. Although platforms like AcreTrader and FarmTogether claim to be 'democratizing' farmland, the investment minima and criteria for being an accredited investor put these investments out of the reach of a large majority of households. Nevertheless, these platforms make farmland investment accessible to a larger number of people and seem to specifically target 'retail investors'. The aim is to reduce the 'friction' involved in farmland investment, a process until now considered cumbersome and complicated, with strong parallels to developments in other real estate markets. A unique feature of their approach is the extent to which prospective investors can 'window shop' farmland properties, with extensive information including photos, maps, and financials, being marketed online on the platforms. Like other sectors that have seen 'platformization' (e.g., Amazon, Airbnb, Uber), the farmland investment sector is moving into platform capitalism. Platforms like AcreTrader and FarmTogether embody the essential characteristics of all platforms: 1) they are digital infrastructures that allow groups to interact (in this case investors); 2) they produce and are reliant on network effects – meaning an increase in users creates an increase in value; and 3) they are designed to appeal to varied users (Srnicek, 2017). The latter point is critical because while these platforms might appear as neutral spaces for the exchange of investment capital, they embody a particular form of land politics, namely, land is treated as an easily transferable commodity while its complex (and 'stubborn') materiality is ignored (Li, 2014; Sippel, 2023).

Future research could explore the narratives and discourses used to market these farm properties as investment targets. Our case studies indicate that green capitalism and environmentally responsible farm management is a selling point articulated by investment firms. Sippel (2023) found that investment firms often assuage doubts about the unpredictability of farming with storytelling of the farm as a factory, controllable farming, and connotations of modernity (mechanization, specialization, and efficiency). What other rural, land, and food imaginaries are evoked by these images and information packages?

Drawing on the example of Farmers Edge, we have presented some evidence that ag-tech platform providers are seeking opportunities for strategic relationships with farmland investors and managers. To date, the specifics of such relationships are unclear. But given the growing importance of farmland investment managers as stewards of large land portfolios, this type of relationship has a great deal of potential. What are the possibilities for further strategic deals between digital agriculture providers and farmland managers and investors? What are the prospects of a digital agriculture provider such as Bayer's Climate FieldView acquiring a farmland management firm or its own large portfolio of land as a strategy for vertical integration? Mergers, acquisitions, and consolidation in the agri-food sector is an on-going trend (Clapp, 2018) and shifts in the space of digital agriculture require further analysis (Bronson & Knezevic, 2016).

This exploratory case study research provides evidence that the trends experienced in the residential real

estate market with SFRs are not unique and are very much reflected in the farmland investment market. Predicated on a fixation with algorithmic rationality, the increasingly enmeshed relationship between digital agricultural firms and farmland investment firms creates an efficient monitoring mechanism for farmland assetization and simplifies and smooths out investment processes. The likely result of these two features is the heightened interest of institutional investment in farmland, ultimately leading to restructuring of land ownership and tenancy arrangements.

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Documenting working experiences of agricultural workers in California

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Abstract

Over 800,000 Latina/o agricultural workers are employed in California every year, of whom approximately 400,000 are estimated to be undocumented immigrants. We convened 19 focus groups (FG) between July 2019 and January 2020 in various regions of California to gather information from Latina/o agricultural workers on social stressors. The participants' narratives focused extensively on working conditions. This paper analyses these narratives and examines working and living conditions, as well as the combined effect of profound deprivations within most significant social domains. Agricultural workers in California characterise their working conditions as little better than slave labour. Systematic abusive practices and exploitation, discrimination, marginalisation, and lack of opportunities were overwhelmingly present in their narratives. Sleep, family, education, economic and health deprivation, as well as housing, food and work insecurity, social discrimination, and institutional racism compound one another to generate a systematic form of oppression that makes social mobility virtually impossible. Efforts to expand and protect labour rights have been inadequate and major improvements are needed to provide basic civil rights.

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Introduction

The food and agriculture sector contributes approximately $1.1 trillion to the US gross domestic product annually (USDA, 2021; Arcury, 2011). In total, the US agriculture sector needs between 1.5 and 2 million hired workers every year. California accounts for one third to one half of all US agricultural workers, with roughly 800,000 agricultural workers employed per year. About 8 in 10 agricultural workers in California were born in Mexico, and virtually all are of Latina/o origin, with an annual mean and median income in the range of $20,000 - $24,999. Approximately half of these workers are undocumented immigrants (Omelas et al, 2022). Low wages, physical demands, and occupational hazards make agricultural jobs hard to fill. In 2019, 56% of California landowners reported being unable to find enough workers in the past five years (FWD.us, 2021). Transnational movements of people to fill unwanted jobs in agriculture, combined with restrictive immigration laws and the political climate in the US (Medel-Herrero, et al, 2021), have resulted in a significant number of authorised and unauthorised immigrants being vulnerable to abusive practices in the workplace (Jasso, 2021; FWD.us, 2021; Smith-Nonini 1999. Griffith and Kissam 1994).

Various forms of labour exploitation and abusive practices against agricultural workers have been reported, including labour trafficking (Belser, 2005) and child farm labour (Quandt et al, 2022). Despite the tremendous contribution of this community to the US economy and the demands of agricultural worker organisations and scientific organisations (Goldman et al, 2021; Farmworker Justice, 2022) to improve living and working conditions (Irani et al, 2021), workplace exploitation and abusive practices have been largely ignored (Littenberg & Baldwin, 2017). Historically, the contribution of this community to the economy has not been sufficiently recognised. On the contrary, Mexican-origin communities have been blamed and stigmatised for centuries in the US and the discrimination and historical racism suffered by them (pillars to understand the processes of marginalisation) are still very present in the US today. An increase in racism and hate crimes against Latina/o agricultural workers has been reported recently (Medel-Herrero et al, 2021).

Literature review

Substandard access to medical care, along with housing conditions and food insecurity, are overwhelming present in the literature on agricultural workers in the US (Postma & Ramon, 2016; Heine et al, 2017). Systematic literature reviews, however, point out the lack of research pertaining to agricultural workers' labour and wage conditions (Svensson, 2013). These working conditions largely explain the substandard living conditions, lack of medical coverage and poor educational levels of hired agricultural workers in the US, a country that offers little protection to the most disadvantaged populations. The US is the only high-income country that does not guarantee health coverage (Gunja et al., 2023). The combination of poverty with lack of access to health care and education, among other crucial social domains, could help explain vicious cycles of poverty and marginalisation that last for generations (Perry, 2006).

We follow in the footsteps of those few researchers who have investigated intergenerational marginalisation and the cycle of poverty (Wagmiller & Adelman, 2009; Martin, 2000; Garrity & Martin, 2018). We contend, as they do, that the study of processes of marginalisation suffered by Latina/o agricultural workers not only helps to better understand the barriers this population faces and how deplorable living conditions are perpetuated for generations in this specific community, but also prevents them from being blamed and stigmatised (Bletzer 2004). Understanding the processes of systematic marginalisation requires analysis of the structural barriers and determinants that prevent people from participating economically, socio-politically and culturally (Gatzweiler et al. 2011), and that are not well understood in this community (Baah FO, et al. 2019), largely composed of Mexican-origin immigrants (Omelas et al., 2022). According to Castaneda et al. (2015), scientific literature on the health and well-being of immigrants is mainly focused on individual behaviours and the culture of immigrants, and usually neglects structural determinants. Moreover, studies focused on structural determinants are usually limited to immigrants' health (specifically access to health services)

and rarely cover other ways in which marginalisation and structural barriers have an impact on immigrants (Castaneda et al., 2015). For example, there is little peer-reviewed research on the role of governments and social discrimination in maintaining deplorable working and living conditions (Gee et Ford, 2011; Chavez-Dueñas et al., 2014; Villareal, 2010) for agricultural workers. Legal status and isolation play a core role in discrimination against members of this community, and help explain their vulnerabilities (Svensson et al., 2013; Jasso, 2021; FWD.us, 2021; Smith-Nonini 1999. Griffith and Kissam 1994). Holmes (2007) described how agricultural work is segregated along an ethnicity-citizenship-labour hierarchy in the US, producing suffering and illness, particularly among undocumented workers. Lack of social support and communication barriers increase threats and limited reporting of violations of workplace health and safety laws (Clouser et al., 2018; Horst and Marion, 2019; Snipes et al. 2017). Summers et al. (2015) have described how isolation exacerbates structural vulnerabilities, including poor access to health and social services.

It is important to understand how forms of discrimination in different social domains combine and potentially mutually accentuates one another (Fleming et al 2017), especially in communities experiencing deep deprivations. This is an important research gap that needs to be addressed to better understand why deplorable living and working conditions are perpetuated for generations, and why this community continues to be neglected and ignored (Mendez et al, 2020; Culp & Umbarger, 2017). This paper examines structural determinants that help explain the processes of marginalisation suffered by this community, with a focus on the combination of profound deprivations within most significant social domains. A deep understanding of this community led us to hypothesise that this population suffers from a combination of intense deprivation in all major social domains, including school, family, workplace, and government support. Our study helps to explain why poverty and marginalisation are perpetuated for generations.

Material and Methods

We conducted a qualitative study as part of the CAWS Project (Medel-Herrero et al., 2021), a multicentre study project aimed at better understanding stress and social stressors in agricultural workers and their families. Following approval by the UC Davis, Institutional Review Board (IRB), we convened 19 focus groups (FGs) involving 130 participants (95 women, 35 men) to gather information about social stressors and anti-immigrant rhetoric and policies experienced by Latina/o agricultural workers and their families. Data collection was carried out between July 2019 and January 2020, during the last year of the Trump administration and a few months before the start of the COVID-19 pandemic in the US. FGs were carried out in Northern California (FG 1-6), the San Joaquin Valley (FG 7-12), and the Sacramento Valley (FG 13-19) where agriculture is a predominant industry. Participants were adults (+18), and the vast majority were agricultural workers (125 out of 130); 5 participants were not agricultural workers, but family members of agricultural workers (Table 1). Participants were not directly asked for their legal status as this could be perceived as invasive and threatening. Instead, legal status was inferred from the narrative when possible. All participants were residing in the US permanently. Therefore, no H-2A temporary agricultural workers were interviewed.

Co-investigators and staff from non-profit community-based organisations serving agricultural workers in the study areas facilitated the recruitment of participants. A convenience and snowball sampling method [Emmel, 2013] was used to recruit FG participants. This consisted in members of non-profit community organisations providing brochures and in-person oral information about our study to those farmworkers who approached their facilities in the weeks prior to the interview. Additionally, these potential participants were asked to contact other potential participants to spread the word and inform them about our study.

The FGs were conducted by two Latino researchers, male and female, in non-work settings, including public libraries, motels, and offices of community non-profit organisations. Participants were paid $20 in compensation for their time. All participants were Spanish speakers. Each FG session was audio recorded and later transcribed in Spanish (Table 1); a selection of statements that were most significant to the study goals were then translated into English and are included in this article.

Table 1. Characteristics of focus group (FG) sessions

	Area	Date	Number participants	length of interview (minutes)
FG 1	Northern California	July 2019	5 (M=0, F=5) *	26
FG 2	Northern California	July 2019	6 (M=1, F=5)	38
FG 3	Northern California	July 2019	4 (M=2, F=2)	15
FG 4	Northern California	August 2019	7 (M=1, F=6)	58
FG 5	Northern California	August 2019	8 (M=3, F=5)	47
FG 6	Northern California	August 2019	9 (M=0, F=9)	43
FG 7	San Joaquin Valley	October 2019	5 (M=0, F=5)	45
FG 8	San Joaquin Valley	October 2019	3 (M=3, F=0)	46
FG 9	San Joaquin Valley	October 2019	5 (M=4, F=1)	35
FG 10	San Joaquin Valley	October 2019	4 (M=1, F=3)	26
FG 11	San Joaquin Valley	October 2019	5 (M=1, F=4)	60
FG 12	San Joaquin Valley	October 2019	4 (M=1, F=3)	33
FG 13	Sacramento Valley	November 2019	10 (M=5, F=5)	34
FG 14	Sacramento Valley	November 2019	10 (M=2, F=8)	42
FG 15	Sacramento Valley	November 2019	11 (M=2, F=9)	48
FG 16	Sacramento Valley	November 2019	9 (M=2, F=7)	54
FG 17	Sacramento Valley	November 2019	4 (M=0, F=4)	49
FG 18	Sacramento Valley	January 2020	9 (M=3, F=6)	54
FG 19	Sacramento Valley	January 2020	12 (M=4, F=8)	56
Total			**130 (M=35, F=95)**	**809**

* M=Male, F= Female

Two open, broad questions were used to begin exploration of social stressors in agricultural workers: "How has the current administration's immigration policy, including the DACA program, affected you and your family?" and "What factors contribute to creating stress in agricultural workers?" These questions were broad enough to engage participants in discussion of a wide range of topics. While participants were not asked questions on specific themes, moderators were free to inquire more deeply into topics that arose during the FG sessions.

The interviews were conducted by a PhD researcher with specific training and experience in social sciences and a graduate student. Because labour abuse and exploitation were a prevalent subject in all FG sessions, this paper focuses on participants' discourse on this specific topic. Thematic analysis, a common form of analysis in qualitative research [Braun & Clarke, 2021], was carried out to explore explicit and implicit meanings in the transcripts of the FG sessions. The researchers closely examined the transcripts to identify recurrent topics that emerged during the sessions. Such topics were labelled with a code and grouped together by theme. Multiple codes and themes captured perceptions and recurring experiences (Table 2). Qualitative analysis software (QDA Miner Lite) was used for thematic analysis.

Table 2. Categories and codes used in text analysis

Category 1: Working conditions, abuse, and labour exploitation	Category 2: Lack of opportunities
• Working conditions and labour exploitation • Verbal/physical abuse and dehumanization • Economic and health deprivation • Work-life balance, family deprivation	• Discrimination • Increasingly hostile behaviours against the Latina/o agricultural community

Table 2. Categories and codes used in text analysis			
Working conditions and labour exploitation			149
	Working conditions		85
		Work schedules, working hours	29
		Physically demanding job	18
		Bathrooms	10
		Access to water	14
		Lack of work and seasonality	14
	Labour exploitation		64
Verbal/physical abuse and dehumanization			20
Barriers to health and social support services			104
	Social support / participation in federal programs		40
	Health Services and Healthcare		64
Mental health, stress and fear			108
	Mental health issues /suicide		75
	Fear		18
	Psychological stress		15
Legal status			78
	DACA		53
	Work permit		18
	Not being able to leave and then return to the USA (no DACA)		7
Work-life balance, family deprivation			47
	Unexcused absence from work		10
	Double workload		19
	Family deprivation, lack of time to share with family/children		18
Discrimination and little appreciation			188
	Increasingly hostile behaviours against the Latina/o agricultural community		38
	Racism and hate incidents at schools		14
	Hate crimes /hate violence		14
	Racism from the government, administration		9
	Racism in the workplace		7
	Racism others		106

Results

Table 3 describes the demographic characteristics of participants in FGs 7-19. Demographic characteristics were not collected for FGs 1-6 due to an error in the planning of data collection. Participants were distributed relatively equitably among the different age ranges. Women (69.2%) and those born in Mexico (75.8%) accounted for nearly three quarters of the sample. Relatively few participants reported speaking fluent English (24.2%) and having done academic studies after the age of 18 (18.7%). Most participants had significant experience in agricultural work (77.9% had spent 4+ years in the fields) and few (9%) had arrived in the US for the first time within the previous 9 years (2010-2019).

Table 3. Characteristics of the participants in focus group sessions 17-19 (FG 7-19)

Age	18-29 30-49 50-69 Missing*	22 (24.2%) 35 (38.5%) 22 (24.2%) 12 (13.2%)
Gender	Male Female	28 (30.8%) 63 (69.2%)
School-leaving age	1 <13 2 14-18 3 19+ Missing	22 (24.2%) 39 (42.9%) 17 (18.7%) 13 (14.3%)
Country of birth	Mexico US El Salvador Missing	69 (75.8%) 13 (14.3%) 2 (2.2%) 7 (7.7%)
Spoken English	Not at all / Poor Intermediate Fluent Missing	37 (40.7%) 21 (23.1%) 22 (24.2%) 11 (12.1%)
Years at agricultural work	1-4 5-9 10+ Missing N/A **	19 (22.1%) 10 (11.6%) 48 (55.8%) 9 (10.5%) 5
Year of first entry into the US	1968-1989 1990-1999 2000-2009 2010-2019 Missing N/A (US-Born)	12 (15.4%) 21 (26.9%) 27 (34.6%) 7 (9%) 11 (14.1%) 13
Had left the U.S in the last year	Yes No Missing	18 (19.8%) 63 (69.2%) 10 (11%)
Total		**91**

* Number of missing cases.
** Not an agricultural worker but a family member of an agricultural worker

Labour exploitation and abusive practice

Study participants described their work experiences in the agriculture industry. These included long hours of strenuous work in adverse weather conditions, supervisors pushing workers to go beyond their physical capabilities, significant physical and psychological stress, and sleep deprivation. Although the Fair Labor Standards Act of 1938 initially excluded both agricultural workers and domestic workers, updated requirements for minimum wage now apply, as do both federal and California state requirements for water and workplace sanitation (Farmworker Justice, 2022). However, participants reported often being denied the statutory breaks, as well as access to water and shade areas and use of the toilets at the workplace. In addition, they reported not being provided with protective equipment or access to workers' compensation insurance, and being neglected when an accident occurred ("I hurt myself and the supervisor had no health insurance"; "we told the supervisor [I injured my eye while pruning and it became infected] and he ignored it").

Quote_#1 "It is their duty to give us glasses to cover the eyes, because it is very dangerous. When the branches are very large and you get crouching, you can prick them in an eye. And what do they do? They sometimes say, -Okay, we are not paying [workers compensation, a required no-fault medical insurance for work-related injuries] because, it was your fault- ... and the supervisors bring them [the glasses] in the trucks, huh... they do not want you to use them. .... I have heard that they say that the fewer expenses, the better" FG15 Mexican-origin female, 30-49 years old. Sacramento Valley

Other recurrent issues in the participants' narratives include deplorable hygiene conditions at work, leading to infectious diseases and health expenses that are unaffordable for these workers and increase their financial stress.

Quote_#2 "And they barely let you go to the bathroom. And the bathrooms are very dirty ... To be OK with the supervisor or whoever, people put up with it. And that is very stressful for everyone, especially for women. Sometimes there is paper, sometimes not. The bathroom is too dirty. They do not care. And it is even worse in summer. It looks like it's going to explode! because they are full. Sick and tired! I go in and when I come out [feel] like vomiting, because it is very disgusting. Mhmm .... Sometimes I put up with [not going to the bathroom] until I get home. On two occasions I had to go to the hospital because I had an infection in the urine, in the bladder, because I did not go to the bathroom. Twice I went to the hospital, here. ... The first time they didn't let me go to the bathroom, and I put up with it all day, but at night I couldn't wait any longer. And then my husband had to take me to the hospital, and I got a bill [from the hospital] of $18,000. -Honey-, I said, -the world is over-. I wouldn't even pay that fortune by being reborn. You can't [urinate] in the field..., because there are many men [around]. And you get sick" FG15 Mexican-origin female, 30-49 years old. Sacramento Valley

Participants are often paid in cash off the books by field owners/supervisors. The prevalence of an informal economy leaves workers vulnerable to labour exploitation. A wide range of informal economy-related workplace abusive practices were described by the participants, including income theft ("A week, $630. They did not pay me ... kneeling, cleaning the onions like this";"the contractor draws money from each envelope"), stolen hours, unpaid overtime and "under the table" payments to supervisors to get the best job positions, among others.

Quote_#3 "That stresses me out... the one who gives the gift..., the one who pays a certain amount... If you pay them, I think $100 or $200, the supervisor gives you a position on a machine [a desired position] It causes stress ... Why? I say, if I know how to do that job, why don't you give it to me? Why do I have to pay for it?" FG11 Mexican-origin female, 30-49 years old. San Joaquin Valley

Participants also reported humiliation, verbal and non-verbal mistreatment ("They shout at you, humiliate you";"they don't let you speak. Imagine all day without speaking"), harassment, ridicule, and intimidation.

Quote_#4 "a supervisor told a man who was lame in one foot - why do you stay here? I need people who do not fail -. You know what he said? - I'm going to take you to immigration -. There are very abusive people who do that, threaten poor people with [reporting them to] immigration". FG8 Mexican-origin male, 50-65 years old. San Joaquin Valley.

Quote_#5 "It happened to me that there was nothing to do at the moment ... - throw away the garbage that you have already collected and put it back together. I do not want to see you stop for a minute -... I felt like an animal, discriminated against" FG14 Mexican-origin female, 18-29 years old. Sacramento Valley

Direct spraying with pesticides were among the most excruciating abusive practices in the participants' narratives. This serious hazard has been reported for decades and yet it continues (Lee, 2020; Rogaly, 2021), despite being proscribed by US Environmental Protection Agency regulation (EPA Worker Protection Standard) as well as California state law (Reeves & Schafer, 2003; Texas RioGrande Legal Aid, 2020). These working conditions and severe abusive practices in California reflect the failed efforts of the State of California to guarantee workers' most basic rights.

Quote_#6 "The plane spraying us ... and they tell us: -No, it's not poison, it does not hurt you-. But do you think it does not hurt us? If it were not poison, they would not spray it, right? When you breathe you feel like it burns here [pointing to the throat and chest]" FG11 Mexican-origin male, 30-49 years old. San Joaquin Valley

Sexual harassment, perhaps the most aggressive and intolerable form of harassment, was also present in the participants' narratives. ("I come to work; I do not come to fuck"). Harassment, strenuous working conditions, excruciating abusive practices (such as spraying workers with pesticides), lack of hygiene, and low wages have potentially devastating consequences. These working conditions instil fear, cause anxiety and a feeling of vulnerability and helplessness, and contribute to weakening the already battered physical and mental health of these workers. Moreover, impunity for owners' failure to comply with the law, and the impunity with which workers are abused, unquestionably have devastating effects on workers' morale, self-esteem and ability to respond to these deplorable working conditions.

A persistent narrative about poverty, financial stress and uncertainty, together with the ever-present fear of deportation and of job loss ("they can fire you. Where are we going to look for a job?"), help to explain the impunity with which the supervisors or owners of the fields act, thus perpetuating labour exploitation and deplorable working conditions.

> *Quote_#7 "You are afraid… of not being able to feed your children. Then it is also one who accepts that they send you to do the work and pushing you as if we were donkeys. …one ends up dying faster, because of stress, because at work they are pushing you a lot. With all that you have behind, one is just dying faster. And you live in fear always and in the uncertainty. What is going to happen? What will happen? What's going on tomorrow?" FG19 Mexican-origin female, 30-49 years old. Sacramento Valley*

When defending their right to health and safety, workers regularly face intimidation, harassment, and retaliation. Out of fear, participants often do not report inadequate conditions and violation of labour and safety laws to the authorities, and are consequently left without protection ("You are afraid… what they want you to do is advance at work, and not to complain";"People are all afraid to talk about their rights","The laws are fine, but they are not being applied ... and if you talk… -Goodbye-, they say"). Unsurprisingly, powerlessness and lack of a voice to defend their rights were overwhelmingly present in the FG sessions ("one feels stressed because one has no voice or vote";"-you are nothing for me, nothing but a number-, he told me";"They know that one is there out of necessity, and they abuse").

As illustrated in Quote# 1, 2, 8 and 11 and below, labour laws, work-related policies, and government agencies, even when present in the fields, do not ensure their basic rights.

> *Quote_#8 Yes, [toilets] were clean a week, they even smelled perfect. But for the next week, they [Cal/OSHA personnel] were already out of the fields and the bathrooms remained the same [dirty]" FG19 Mexican-origin female, 18-29 years old. Sacramento Valley*

Undocumented workers are the main victims of this system that is unwilling or unable to protect them, leaving them to be perceived by owners and supervisors as a source of vulnerable, cheap, disposable and easily exploitable labour.

> *Quote_#9 "The supervisors know that one has no papers ..., more than once they also scare them. No, they do not give them the conditions they deserve, water, shade ..., ... they abuse and use that power they have. Because they know that they are not legally here" FG13 Mexican-origin male, 18-29 years old. Sacramento Valley*

> *Quote_#10 "If they know that you do not have papers, they take advantage of it, they tell you, -where are you going to? … You do not have other options-" FG01 Mexican-origin female, unknown age. Northern California*

Success in reducing or preventing work-related abusive practices and exploitation depends in part on the ability of workers and the active participation of the host government in asserting their rights. As illustrated above, participants' narratives suggest a lack of legal support regarding most basic rights, including protective equipment, workers' compensation insurance, access to statutory breaks, access to water, shade areas and toilets at the workplace, [Quote_#1] and payment for overtime [Quote_#2]. They report verbal and non-verbal mistreatment and harassment, including sexual harassment [Quote_#4], intimidation, and direct

spraying of pesticides on workers[Quote_#6]. This suggests persistent neglect by the government to address these ongoing problems, to protect these workers' rights, and to empower this community, compounded by an informal economy and an ever-present dread of deportation (see Quote #4, 14-19, 27).

> *Quote_#11 "[The supervisor that shouted at us a lot ... -talk to Cal / OSHA-… for those who have documents it is easier [to report] ..., but for those who have no papers [reporting] is harder]" FG19 Mexican-origin female, 18-29 years old. Sacramento Valley*

According to the participants' narratives, these abusive practices are the norm; only exceptionally do workers receive humane or decent treatment from the owners / supervisors ("there are ones who are good, because it has happened to me"). Participants reported that harsh working conditions made these jobs undesirable for other social groups ("I've never actually seen an American person in the fields"; "You don't see many Americans in the sun"), whereas their own limited job options forced them to perform unwanted jobs (Quote#_7,10,12) and to endure harsh working conditions in the fields.

> *Quote_#12 "If there was a bit of equality, it'd be different. Because one could get jobs that are better paid, and not necessarily in the fields" FG17 Mexican-origin female, 30-49 years old. Sacramento Valley*

As illustrated above, a predominantly informal economy in agriculture, abusive working practices and conditions, the lack of enforced legal support, the impunity of the owners, the legal status of participants (which is a social construct, the result of political decisions), intimidation and fear, lead workers into situations of helplessness and vulnerability. The picture that emerges regarding participants' working conditions and abusive practices is disturbing, to the extent that participants make references to slavery and inhumane treatment ("We are not anyone's slaves", "and there they bring a riding-whip: -back, back-, and -hurry up, hurry up-", "[My aunt] was watched over with binoculars, ... as slaves"), often accompanied by an assertion of human rights ("we are human beings. They cannot treat us like this"; "we have a right to be respected and be treated like human beings", "I sometimes think they see us as animals").

The lack of job opportunities, miserable wages and unacceptable working conditions described above lead to deplorable living conditions. Participants' narratives on working conditions linked references to inhumane treatment and slavery not only to labour exploitation and abusive practices in the workplace, but also to deep deprivations, including economic, health and family deprivation.

Economic and educational deprivation

The participants' narratives overwhelmingly reflected day-to-day economic deprivation and poverty impacting the most significant social domains and basic needs, including food and shelter ("how many people aren't sitting on the corners asking for money? ...and working here [in the fields]"; "almost the whole month [working] just to pay the house rent. And how are you going to eat?"), education ("one of the two, you either give them studies or feed them"), and access to healthcare services for themselves and their families (Quote# 2,22,23,25), among other things ("now I'm helping my parents a little, if they didn't have my support, it would be difficult for them").

> *Quote_#13 "Here there are many people who may have to sleep even on the street... if you go looking for a house to rent, anyone here will tell you -yes, I have-, it's $500 or more. But, go see the house that they will give you to live in, and see if there is hygiene over there or if there is something fixed…, everything is a pigsty, it's a dump" FG8 Mexican-origin male, 50-69 years old. San Joaquin Valley*

Agricultural temporary work and income gaps from seasonal work were pressing concerns ("All the little money you could have earned [during seasonal work] you need to spend it later for the house rent, food, bills"). Poverty and deplorable living conditions were linked in participants' narratives to a lack of opportunities and, ultimately, to discrimination, institutional racism, stigmatisation, and negative social perceptions of this community. Participants frequently reported experiencing intense forms of racism as well as ethnic, origin-related, gender, age, language, legal and social status-related discrimination, suggesting that this community had to deal with a combination of discriminatory behaviours on a day-to-day basis. Many participants repeatedly

stated that age discrimination prevented them from finding new jobs in the agricultural industry. Intersecting discriminated social identities (such as origin, gender, and age in the quotes below) contributed to amplifying one another, creating cumulative disadvantages and vulnerabilities:

> *Quote_#14 "Even in the field they discriminate against you. ... I was looking for a better job, a job on the machines, in the grapes. And there is sexual harassment. They don't want to hire you because you're old. We went there, me and my daughter, and I went in first. I was fired in a week to give my daughter a job. And those are the machinists. They discriminate against you. I applied two, three times a year, and nothing. They don't have a job; they don't have a job. You know they do have jobs, because when I apply, they don't give me a job, but if my daughter applies, she is young and pretty, they give her a job" FG16, Mexican-origin female, 50-69 years old. Sacramento Valley*

Importantly, discrimination against these workers and their families was perceived to have worsened in recent years. Participants' narratives suggest that the US administration's racist and anti-immigrant rhetoric reinforced and encouraged immigrant and minority stereotypes, stigmatising this community and negatively shaping social perceptions.

> *Quote_#15 "They are convinced that what the administration tells them, well, Trump and his people [is true], that 'those people [immigrants] are stealing our jobs and they're taking away our welfare, food stamps, well, everything'... and it's a lie that they've created" FG03, Mexican-origin male, unknown age. Northern California*

As a result, hate incidents and fear significantly increased after former president Trump was elected ("they now are racists in the open because they feel supported by everything that the president says"), legitimating anti-immigrant sentiment and practices ("they judge us all, that we're all criminals"). Importantly, as perceived by the participants, an intentionally harmful immigration policy ("He [President Trump] is seeking by all means to harm us") led agricultural workers to decline participation in public programs and access to healthcare.

Importantly, the study participants, especially the women, focused their narrative on the impact that discrimination and living conditions have not only on them, but on their families, specifically their children. As illustrated below, the reported increasing fear, racism and hate incidents clearly have a potential impact on the health not only of these workers, but also of their families.

> *Quote_#16 "Many people stopped asking for help, SNAP assistance, welfare, because they see there is a threat that you would be a public charge and instead, they stop getting [the support] because of fear. They will be sick and not go to the doctor because, oh, they are afraid that they will have a public charge put on them and they won't be able to gain residency one day. And because of that people instead stay sick in their home. Or if their children are US citizens… they will not even ask for MediCal now. Because the children even now, supposedly, it will affect them if they ask for MediCal for their US citizen child" FG10, Mexican-origin female, 30-49 years old. San Joaquin Valley*

Additional obstacles to social mobility were identified in the participant's narratives, including education (e.g., Quote#12). Concerns about the US administration's attempts to rescind the DACA program and how these concerns impact children's academic achievement and future job opportunities, as well as a rise of bullying and hate incidents in schools that participants attributed to the anti-immigrant rhetoric, were recurrent topics during the FG sessions.

> *Quote_#17 "Our children are also scared… my son would give up. He'd say 'Well, I'm never going to get a license, I'll never do anything, because I don't have…'. But when that [DACA] program came it was like a light for thousands of students and then suddenly again now the threat" FG11, Mexican-origin female, 30-49 years old. San Joaquin Valley*

> *Quote_#18 "Yes, the hate that…the parents that support that man [President Trump] are transmitting it in their children, and they [the children] express all that hate in the school and are worsening everything" FG17, Mexican-origin female, 18-29 years old. Sacramento Valley*

Overall, participants linked poverty with lack of opportunities and discrimination. Economic deprivation

prevents this community from accessing quality education and reaching university studies, in a country with little social support for the most disadvantaged. Discrimination (including threats to cancel DACA) and marginalisation that significantly impacted their education in different ways, including racism in educational centres and hate incidents, emerged during the FGs sessions. Additional structural obstacles impacting children's academic achievements, including psychological stress (particularly psychological stress attributed to their family's legal status concerns and living and working conditions) and lack of expectations of job opportunities, were reported by the participants themselves. Participants felt that such deprivation of labour opportunities and basic rights (among others, the right to decent treatment at work and a living wage, the right to decent housing, education and nutrition in a community that suffers high rates of food insecurity) were fuelled by experiences of prejudice. Significantly, some participants asked interviewers to film them at work as a way to challenge stereotypes, invisibility, and anti-immigrant rhetoric. These experiences and structural barriers were perceived as marginalising not only present but also future generations, effectively destroying any prospect of social mobility.

> *Quote_#19 "youth have dreams. And, with the negativity or the discrimination that is seen in the migration policies…. Um, I feel that invites more violence… I'm old now but the youth, um… no... it's like they lose track more easily and still some can go…they feel like, frustrated, and they're inclined more towards drugs, alcohol" (FG16, Mexican-origin female, 30-49 years old. Sacramento Valley*

Women deserve special attention within this large and diverse community. Some gender-specific work-related issues were identified. As mentioned above, some participants experienced workplace sexual harassment (e.g. Quote #14). Moreover, according to the participants themselves, women have fewer job opportunities in agriculture than do men ("In winter there is no work, or suppose that there is, but it is mostly for men";"You find nothing but temporary jobs because there is no work for women"). Additionally, gender gaps in sharing household responsibilities persist in this community. Therefore, as illustrated below, in addition to long hours of arduous work under harsh conditions, women participants frequently described having a double workload of agricultural work and domestic duties, being responsible for significant amounts of unpaid household labour and caregiving.

> *Quote_#20 "I have my mom who works in the field. And I see how she arrives from work very tired. It is a stress ... she gets up at two o'clock, three in the morning to do everything in the house, ... and be on time by the time they tell her they're going to pick her up. ... she is not aware of it, but the people around her are... women make food, wash, clean... they do everything. ...after they get up at three in the morning, they arrive at five o'clock in the afternoon ..., they still must do things in the house ... obviously she gets stressed. Because sometimes they are also stressed at work, that maybe supervisors are not treating them well, they are not giving them enough time to rest, or to take their lunch and ... in a certain way they get stressed at work, they have stress in the house ... it's as if it were a circle that goes back ... and it is so much that sometimes even people explode, of so much stress" FG18, Mexican-origin female, 18-29 years old. Sacramento Valley*

Work-life balance and family deprivation

The study participants were Latina/o men and women at the bottom of the social hierarchy, for whom family support was crucial. Lack of workplace flexibility and basic public policies regarding, for example, affordable childcare and paid leave, to support the realities of working families' needs, were frequently reported by the participants.

> *Quote_#21 "We have a job that is not well paid. We look for a babysitter, leave half of your check with the babysitter. ... go to work so many hours and leave half for gasoline and the babysitter. And they do not take care of the children like we do" FG14 Mexican-origin female, 30-49 years old. Sacramento Valley*

Migrant or immigrant workers without local extended family support reported extreme difficulty coping with inadequate paid sick leave or flexibility in the workplace. Therefore, inadequate work leave was a big concern for participants, both scheduled leave ("You come back home at 5 and at 5 they close the offices where you must do some paperwork... if you insist…, they fire you") and unscheduled leave ("If this person feels bad..., bring another worker tomorrow";"If the child gets sick ... okay, there is no work for you anymore"). As the

quotes below illustrate, difficulties in obtaining sick leave led participants to stay away from health centres for personal or family care (including childcare), significantly impacting workers' psychological distress and their family's health.

> *Quote_#22 "You get lots of pressure in the workplace. Sometimes not even during an emergency they give you [work leave permission]. ...my child has autism ... he has [therapy] once a week, but they do not give us work-leave" FG13 Mexican-origin female, 30-49 years old. Sacramento Valley*

> *Quote_#23 "And they must understand us a little bit. ... particularly when there are parents who have special-needs children" FG15 Mexican-origin female, 30-49 years old. Sacramento Valley*

As illustrated in the quotes above, issues related to children with cognitive disabilities and their needs for additional care emerged as a frequent topic during the FG sessions. Furthermore, the recurrence of this theme during the sessions suggests a high prevalence of children with cognitive disabilities in this community, which in the scientific literature has been linked to pesticide use (Todd et al, 2020). Autism and other cognitive disabilities in children are associated with significant forms of disability. Furthermore, the lifelong disability of these children constitutes a clear form of deep deprivation in most significant social areas (from health to education, through work, family and emotional life) from the earliest ages.

Severe time constraints were a major work-life conflict impacting this community, as reported during the FG sessions ("waking up the babysitter to give her the baby at 3:00 in the morning and get back home event at 9-10 at night"; "[Workers] only see them at night when they are sleeping.... Both children and parents suffer!"). Participants were fully aware that parental deprivation has potential consequences on schooling ("you do not have time to sit and tell them, -Let's see, did you do your homework? How can I help you?"), health ("Do you think you are getting home in the mood to cook healthy?"), and children's behaviour ("many [working] hours and you do not have time for the children ... they call our attention, sometimes, with bad behaviour"; "the gangs take advantage of it... Sometimes they even hit the children to push them to get into the gangs"). Parental deprivation led children in these families do less well from early in life, contributing to the marginalisation and vulnerability of future generations.

Family deprivation was especially pronounced among undocumented participants isolated from their loved ones and support networks (e.g. Quote #27).

> *Quote_#24 "people come [to the US to] improve their lives, but many people leave their relatives there. They have been here for years. The gentlemen and ladies leave their children, and… When do they see them? From there [the field] I make my money. I already paid the coyote, and I am sending [the children some money] every quarter or every month, but when will you have a physical interaction with your children?…[I am] just trying to improve their situation in Mexico" FG03 Mexican-origin female, unknown age. Northern California*

Health deprivation

As illustrated in some of the quotes above (e.g., Quote 2,6,7), participants were fully aware that discrimination, psychological stress, poverty, poor hygiene and harsh working conditions are real hazards that have a devastating impact on workers' physical and mental health ("How many people have died in these fields!"; "It is going to end your life, the [psychological] stress"). Heat stress, pesticide use and sleep deprivation were reported by participants as major hazards and causes of occupational fatalities ("And there is a lady who died pregnant by the heat [stress]", "get up early, and then drive [the car] one or two hours"; "you work on a tractor and you can even fall asleep, because you did not sleep [enough] at night").

Lack of access to healthcare services was also a recurring topic (Quote# 2,22,23,15), leading to significant problems even in California, a state with expanded medical aid (MediCal) and mandatory workers compensation coverage. Moreover, as mentioned above, increased fear of participation in public programmes and healthcare

services worsened health deprivation (Quote #16).

> *Quote_#25 "We had no money to pay the insurance. And I was going to get an insurance just for the child, not for me, and for him it was $1,400 a month. Our house rent was $1,000. Either we paid insurance, or we paid the house rent. So, we lasted almost a year without any type of medical insurance. I went to MediCal, and they did not give it to me" FG16 Mexican-origin female, 18-29 years old. Sacramento Valley*

Mental health and psychological distress were prominent topics throughout the narratives (e.g., quote#2,3,5,7,17,19,20,26,27) Participants expressed an understanding of the link between constant uncertainty and instability, lack of control over their lives and a sense of vulnerability, and their own and their families' mental health ("I got frustrated and was about to. . . I went, yes, I went to receive therapy because I didn't know what else to do";"I have two daughters and I have both in… therapy because of the same thing, the stress"). The use of psychoactive drugs to treat discomfort and to continue working was also described. The use of these types of drugs can potentially lead to substance abuse and addiction, which in turn has a devastating impact on major social areas (including family, work, income and health, to name but a few).

> *Quote_#26 "You need medicine… a medicine that gives you the strength to work harder. Or an energy drink…it's stressful…With some people [around] on medication…if you're not on medication…they [supervisors/owners] want you to have the same job performance as the ones on medication. … you cannot... It also stresses me out a lot to think that at some point I'm going to have a serious illness or injury and not be able to go to...Well, I wonder if I'll be able to go to the doctor, right? ... how am I going to pay all that money? And that stresses me out… or when you have been injured at work or whatever, you're not going to give the same work performance…" FG19 Mexican-origin female, 30-49 years old. Sacramento Valley.*

Many participants were immigrants escaping violence and extreme poverty, who then were frustrated by the hostile behaviour and poor living and working conditions in the US (e.g., Quote# 11, 17, 20, 26). This feeling was especially intense among those undocumented participants who had family members in Latin America and were unable to visit their home countries in the event of a family emergency – a source of deep tension and psychological distress. Several participants reported (usually while crying) experiences in which the death of a relative occurred or death was imminent, and they were unable to go to their country of origin to say goodbye because of their inability to re-enter the US.

> *Quote_#27 "Well, we cannot visit our families. Here we are just like enslaved. Work, work and just leaving the money here. Because what you work, well, here it stays" FG14 Mexican-origin female, 18-30 years old. Sacramento Valley.*

In summary, participants reported profound deprivation in the most important social domains. Furthermore, there are strong links between social domains, as each of them can potentially influence progress in the others. Therefore, economic deprivation, lack of formal education, family deprivation, and health deprivation all contribute to amplifying one another, creating cumulative disadvantages and vulnerabilities. For example, education is a strong predictor of health; less educated people report worse general health, more chronic conditions, and more functional limitations and disabilities (Zajacova & Lawrence, 2018). Therefore, reported structural barriers to achieving basic and higher educational levels are expected to have an impact on participants' health. In turn, poor health is also expected to affect job opportunities and career achievements. For example, poor mental health of farmworkers' children (a recurring theme in participants' narratives) will affect their academic achievements and future employment opportunities. Economic deprivation and malnutrition are also important predictors of poor health and academic performance. Bullying can lead to physical and mental health problems. Inadequate work leave was a major concern for participants and had a potential strong impact on access to healthcare for themselves and their children. Parental pesticide use significantly increases cognitive disabilities in infants and children, including autism disorders. Parental deprivation has potential consequences on children's schooling, behaviour and health. These are just a few examples, there are countless links between different social domains that could be applied to the study participants.

Discussion

Participants provided a disturbing picture of systematic exploitation and abusive working conditions that they characterised as having profoundly adverse effects on themselves and their children. They described a labour system that relies on the precariousness of workers and their vulnerability, to exploit them. Some social problems reported here are not exclusive to the Latino community. As Kelkar (2016) suggests, the preservation of different pools of economically disadvantaged non-white labour at the bottom of the social hierarchy corresponds to a long historical process built on discrimination and distorted social perceptions that continues to manifest fully today.

Participants described profound deprivation in the most significant social domains. Labour exploitation, economic deprivation, health deprivation and lack of medical attention, among others, cause this vast community (more than 800,000 workers plus their families) to live in appalling conditions in California, one of the richest states in the world. Among the most devastating findings of this study are the participants' descriptions of the harm being done to their children due to their absences for prolonged work in the fields. The fear of losing future immigration rights precludes even US-citizen children from accessing healthcare and food support, and racism and anti-immigrant experiences are increasing in schools. The numerous comments by participants about children with special needs raises grave concerns about both social deprivation and pesticide exposures known to produce developmental harm (Todd et al, 2020). The deprivation of education and family care of the participants' children guarantees the availability of this cheap and vulnerable workforce in the future and perpetuates the racialisation of the labour force over generations (Rogaly, 2021; Kelkar, 2016). The anti-immigrant policies to intentionally discourage immigrants from participating in federal programmes for underserved communities, fostering racism from the US presidency itself under the previous administration (Medel-Herrero et al., 2021), exacerbated the lack of voice in the social and political arena and obstacles that prevent community members from reporting abusive labour practices. Oppression and sexual exploitation remain widespread. Consistent with our results, qualitative studies show that the vast majority of women in this population suffer sexual harassment, threats of rape and rape, and are fired after filing complaints (Kim et al, 2016; Waugh, 2010). Consistent with previous studies, our study participants also reported food and housing insecurity, deplorable housing conditions (Postma & Ramon, 2016, Heine et al 2017), sleep deprivation and a wide range of abusive practices. Extremely poor workplace conditions and quality of life have led social scientists to talk about the US agricultural industry employing modern forms of slavery (Kelkar, 2016; Perea et all, 2011; Rogaly, 2021; Wurth, 2018). Consistent with these authors, a number of participants used the term "slavery" and made references to inhumane treatment to describe their working conditions.

The narratives suggest that living and working conditions have not improved in recent years, but rather have remained stagnant or worsened in some regards (for example, participants reported an increase hostile behaviour against them in recent years). Participants' references to an increasing role of the state in coercion and oppression (Medel-Herrero, 2021) are significant. Our findings, consistent with a rise of anti-immigrant public discourse and draconian immigration policies (Medel-Herrero, 2021; Edwards & Rushin, 2018; USCCR, 2019) revealed a worsening of public support and workers' willingness to access public services and healthcare. In addition, some forms of agricultural labour exploitation and abusive practices have been reported for decades and yet continue (Lee, 2020; Rogaly, 2021). As an example of illegal and unacceptable treatment, participants reported direct contact with pesticides from aerial application, a practice proscribed by Federal regulation and California State law (EPA Worker Protection Standard; Reeves & Schafer, 2003; Texas RioGrande Legal Aid, 2020). Ongoing efforts to improve regulations and legislation have faced significant barriers (Farmworker Justice, 2022). The conditions in California reflect the failed efforts of a relatively progressive state government to address challenges in the agricultural industry today in the US. As agricultural workers in other US states, such as Florida and Texas, have fewer legal protection than those currently provided in California (Oxfam America, 2018), the labour situation in those states could be even worse. Furthermore, although lack of documentation is a major structural cause of poor conditions, human trafficking and forced labour in Georgia and other states have resulted in deaths among agricultural workers who were H2A visa holders (U.S.

Department of Justice, 2022)

Limited social ethical responsiveness to agricultural workers' living and working conditions is built on distorted understanding of our past and present history (Gonzalez, 2019). Changing social perceptions and addressing structural barriers are important. Efforts to increase visibility and raise awareness about these workers' situation include union and other initiatives based on consumers' choices to protect workers' rights. The United Farm Workers (UFW), a national union founded by the late Cesar Chavez and based in California, unites traditional labour organisation with community-based and consumer actions, focuses on both legislative reform and executive enforcement, and emphasises the dignity and the ability of each person ("Si se puede") (UFW). Additional examples include: a recent temporary boycott of strawberries by consumers in Greece that achieved a fair labour labelling certification system to attempt to improve working conditions; the successful campaign by the Immokalee Workers to have consumers demand fair practices for agricultural workers; and the Equitable Food Initiative, among others (Andreas, 2017; Castrejon, 2018; Burkhalter, 2012). These efforts are central to an ecological framework that incorporates national legislation as well as state and local enforcement efforts engaging workers themselves.

Study strengths and limitations

In general terms, samples and data collected for qualitative studies, including focus groups, are not representative of the entire study population. Although we did not reach the most vulnerable workers (including victims of human traffic, child workers, and indigenous populations) [Zawojska, 2016; Palumbo, 2018], the methods used succeeded in recruiting a group of individuals willing to share extremely sensitive information, for which we are grateful. The disproportionate inclusion of women in this study (69.2% of participants), while not representative of the workforce as a whole (women comprise about one fourth of the Californian agricultural labour force [Medel-Herrero et al., 2018]) may have enhanced our ability to understand gender-related issues in the workplace and impacts on families. Women agricultural workers are a crucial resource for families and for the rural economy, but they are traditionally discriminated against as key contributors and their living and working conditions are especially unfavourable. Agricultural women are frequently sexually harassed, bear the majority of the household and childcare workload, are overrepresented in seasonal and part-time jobs, and are often paid less than men for the same work (FAO 2011). The overwhelming load carried by women affords a better understanding of the impact of working conditions on the family. In our FG sessions, women showed keen interest in discussing the impact of racism and working conditions on their children, while this topic barely came up among men, who provided very little information about their children. The female perspective has many advantages, such as bringing to light the compound labour and sexual exploitation of women that are documented in the study. Although the study of the female perspective was not our objective in the present study, it is a fascinating and very important topic to which we would like to dedicate an article in the immediate future.

Overall, the FG is a widely used method to gather the social narrative in qualitative research. Listening to other participants is generally very motivating and constructive when the study participants create their own narrative. Moreover, as we used unstructured interviews to conduct our FGs, the two interviewers did not have a set list of topics to address or predetermined questions, but instead only two broad initial questions, as described in the Methods section. This ensured that the narrative was produced by the interviewees without interference from the interviewers. The group discussion, not the interaction between interviewee and interviewer, had the leading role in the emerging narrative. Some disadvantages to using FGs have been reported, and could be present in our study: for example, some participants may not feel comfortable expressing their opinion in front of others or may feel pressured to conform to the group consensus. The two moderators facilitating the FG sessions tried to create an atmosphere where participants felt welcome and safe, and encouraged all participants to participate in the discussion. The limitations and advantages of FGs have been described extensively in the literature [Morgan & Krueger, 1993].

Conclusion

There are over 800,000 agricultural workers out of a population of 39 million in California alone, to which must be added a difficult-to-estimate number of family members, affected by poverty and discrimination. This is a vast population living and working in dreadful conditions. Nearly half a million Californian agricultural workers are undocumented immigrants. The political and social construction of the "illegality" of undocumented immigrants constitutes an essential pillar to sustain the informal economy, marginalises these workers, and justifies their exploitation. Not surprisingly, the need for immigration policy reform has been repeatedly cited for decades (Castaneda et al., 2015; Medel-Herrero et al., 2021). An intersectional and holistic approach to understanding oppression and discrimination has been recommended (Nador, 2020; US EEOC, 2018). Our study suggests that economics, health, education, family deprivation, political and social discrimination, lack of freedom, isolation, and invisibility combine and compound one another in this large community, generating a structure of vulnerabilities, a systematic form of oppression that makes social mobility virtually impossible. A desperate need exists to improve labour and human rights for these workers. Consumer-driven interventions, unionisation, community-based worker engagement, and structural changes to immigration and labour laws are needed to advance civil rights.

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The Food System in the (Post-)Pandemic World: Disruptions, Vulnerability, Resilience, and Alternatives - I

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Abstract

COVID-19 sharply exposed the vulnerabilities of capitalist-industrial agri-food relations and significantly intensified them. At the same time, we have also seen that agri-food relations can be resilient, that some systems prospered when changes were needed, and that many people experienced new forms of solidarity. This is the first of the two special sections to be published successively in the International Journal of Sociology of Agriculture and Food (IJSAF). We aim to revisit the major themes of the sociology of agriculture and food, specifically focusing on what the COVID-19 pandemic has revealed about them: the globalisation of agri-food, the reconfiguration of socio-ecological linkages between agri-food and nature, the politics of agriculture and food, and the methodological and theoretical ways we make sense of these within agri-food scholarship. This introduction presents the background of the special section and the underlying motives for bringing together the empirical articles.

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Introduction

The COVID-19 pandemic has once again illuminated multiple flaws in our food system. Food supplies largely rely on long-distance food chains, many of which have been disrupted due to lockdowns and trade restrictions. The pandemic left millions of people temporarily or permanently more food insecure, as they lost income sources or are suffering from the pandemic-induced global recession. COVID-19 sharply exposed the vulnerabilities of capitalist-industrial agri-food relations and significantly intensified them. At the same time, we have also seen that agri-food relations can be resilient, that some systems prospered when changes were needed, and that many people experienced new forms of solidarity. This special section treats COVID-19, in 2023, as both an ongoing and (post-) global pandemic. The papers included in this special section analyse what happened during the height of the pandemic, but also the reactions, responses, and alternatives in a (post-)pandemic perspective when global trade and migration are no longer restricted by protection. This introduction presents the background of the special section and the underlying motives for bringing together the empirical articles.

The Food System in the (Post-)Pandemic World: Disruptions, Vulnerability, Resilience, and Alternatives - I is the first of the two special sections to be published successively in the International Journal of Sociology of Agriculture and Food (IJSAF). The two special sections aim to revisit the major themes of the sociology of agriculture and food, specifically focusing on what the COVID-19 pandemic has revealed about them: the globalisation of agri-food, the reconfiguration of socio-ecological linkages between agri-food and nature, the politics of agriculture and food, and the methodological and theoretical ways we make sense of these within agri-food scholarship. While this first introduction gives an overview of the main topics identified in the call for papers, the introduction to the second section will provide a detailed framework paper, a review of the literature, and an analysis of the special sections' contribution to the sociology of food and agriculture.

The papers have been a product of the Research Committee on Sociology of Agriculture and Food (RC40) of the International Sociological Association (ISA)'s "mini-conference" that took place at the Leipzig University Research Centre Global Dynamics on October 19-21, 2022.[1] A total of 46 researchers from 37 different universities, research institutions, and social movements from all over the world participated in the mini-conference and engaged in scholarly debate. The following themes and issues emerged through the discussions: 1) the pandemic and food (in-)security, 2) the pandemic and migrant labour, 3) supply chains during the pandemic, 4) state responses to COVID-19, 5) COVID-19 and alternative food networks; 6) the pandemic and social, local and indigenous movements; and 7) possible trajectories for transforming food systems. The presentations provoked intellectually stimulating debates on both empirical, methodological, and theoretical challenges and solutions, particularly concerning three broad inquiries that the special section also aims to explore.

The first inquiry concerns the negative impacts of COVID-19. Early in the pandemic, we received reports of major disruption in the food chain, globally, but also locally. There were panic-like conditions in many countries with hoarding where possible, while others were prevented from accessing markets due to imposed curfews. Questions were quickly raised about food (in-)security in the longer term when access to transport, inputs, and labour was impeded. In retrospect, we seek to understand how invasive these disruptions were on the food system, how lasting they were, and how power in the form of resources and control over discourses enabled or reinforced existing structures, exacerbated pre-existing agri-food problems, and exposed the frauds and failures or contributed to more sustainable transformations. In short, one of the questions that this special section series wants to tackle is: what kinds of disruptions have the pandemic led to, and with what implications for the already existing power dynamics and agri-food problems?

The second inquiry is about the positive dynamics that the pandemic has created in agri-food relations at

[1] For more information on RC40 and its activities please see: https://www.isa-agrifood.com

the global, regional, national, and local levels. For instance, during this period we have witnessed an increasing awareness regarding the importance of local food systems and the need for greater resilience in the face of disruptions to global supply chains. Furthermore, while communities and people were trying to cope with COVID-19-induced vulnerabilities that are closely related to the existing systemic inequalities, they came up with and developed creative solutions. The agency of alternative food movements and rural/indigenous social movements have fostered new forms of resistance and resilience. Given this background, the other question that this special section wants to foreground is: what can we learn from these experiences for working towards alternative food systems, and the imagination of different agri-food relationships in a (post-)pandemic world?

The third inquiry is related to the sociology of agriculture and food itself – as a sub-discipline and as an academic community. The pandemic has also been a challenge for agri-food scholarship in various ways. To say the least, universities went online, conferences were postponed, fieldwork was adjourned, scholarly communities and organisations were devoid of face-to-face interactions, etc. New methodological and theoretical challenges emerged, starting from the basic question of how we can make sense of the complexity of agri-food relations during the pandemic. With the help of the discussions on the two broader inquiries mentioned above, this special section also aims to foster a dialogue on how we can address and integrate those theoretical and methodological challenges as well as emerging concepts and methods within the sociology of agriculture and food and critical agri-food studies.

Last but not least, one of the striking questions that emerged during the mini-conference was whether the hegemonic capitalist-industrial food system has proven to be 'resilient' in the face of the pandemic. So, in addition to the abovementioned inquiries, authors publishing as part of this special section have been challenged to also respond to this intellectually provocative question.

Reflections on the RC40 mini-conference tradition

Since 1978, RC40 has been working towards generating and invigorating scientific and public debate on the social organisation of agriculture and food. As a scholarly collective informed by diverse critical schools of thought and theoretical frameworks, RC40 tries to create spaces of sustained dialogue and critical engagement in relation to the intensifying social and ecological problems and challenges shaping the field of agriculture and food. The RC40 "mini-conference" and "RC-40 sponsored sessions" tradition is among the most important of those collaborative spaces of intellectual and scholarly engagement, which has made significant contributions to the sociology of agriculture and food. This is reflected in the edited books as well as special issues and journal articles that came out of the previous mini-conferences. Many special issues in IJSAF originate in such initiatives co-located with conferences such as the International Rural Sociology Association (IRSA), the European Society for Rural Sociology (ESRS), and the Rural Sociological Society (RSS). We hope this special section series will also contribute to this tradition.

From Banned Bonds to Hungry Homes: Impacts of the COVID-19 pandemic and bans on associational life on food security among migrants on the margins

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Abstract

This paper examines the impacts that the COVID-19 pandemic and related bans on associational life had on the food security of migrants residing in informal settlements. Through ethnographic fieldwork at Lydiate informal settlement in the Norton peri-urban area, Zimbabwe – where Malawian migrants have established a unique home – the study reveals the transformative impacts of the pandemic on the livelihoods, food security, and everyday life of migrants. Lockdown measures disrupted crucial social support networks, including community organisations and informal associations that are essential to migrants' and diasporas' sense of belonging. The findings reveal a dramatic alteration in the lives of migrants at Lydiate, emphasising how limited access to these networks exacerbated food insecurity among a population already facing discrimination and exclusion from formal support systems. Beyond the immediate impacts of COVID-19 lockdowns on food security, pre-existing vulnerabilities (questionable legal status, lack of social safety nets, and resource constraints) also demonstrated the structural inequalities that shape the experiences of migrants in informal settlements. This complex array of challenges significantly influences food security outcomes among migrants on the margins during times of crisis. Understanding the impacts of bans on associational life and belonging among migrants necessitates a thoughtful approach to policy and practice. Policymakers and practitioners must consider the interconnectedness of social, economic, and psychological dimensions in the lives of migrants. Future research might usefully focus on how migrants find 'informal or nimble ways of belonging' to continue their lives even after bans on associational life in the community and beyond.

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Introduction

The COVID-19 pandemic reverberated across multiple dimensions of human life, with significant implications for food security (Niles et al., 2020; Smith and Wesselbaum, 2020). Vulnerable populations, particularly migrants residing in informal settlements, bore unintended consequences due to measures implemented to contain the virus, such as mandatory lockdowns (Bhanye, 2023a; Matamanda et al., 2022). The bans on associational life, including market closures and restrictions on communal gatherings, disrupted established food supply chains and livelihoods, resulting in heightened food insecurity among these marginalised communities (Bhanye, 2023b; Chirisa et al., 2020; Matamanda et al., 2022).

This paper extends our understanding of the impacts that COVID-19 and bans on associational life had on food security among foreign migrants in informal settlements. It builds on existing literature on food insecurity in migrant communities, drawing insights from other preliminary works such as Arndt et al. (2020), Amare et al. (2021) and Shupler et al. (2020). These studies illuminate the complex and diverse challenges faced by marginalised groups, including disruptions to economic activities, limitations in accessing healthcare, and heightened social vulnerabilities. Extending beyond the general effects, a notable consequence of the pandemic has been its impact on food security, especially among urban poor communities (Inegbedion, 2021; Manduna, 2023;). The lockdown measures, implemented with the intention of curbing the spread of the virus, inadvertently intensified existing inequalities (Bhanye and Bhanye, 2023). Vulnerable populations, often concentrated in urban informal settlements, faced heightened economic insecurities as jobs evaporated and livelihoods were disrupted (Chirisa et al., 2020; Shupler et al., 2020). The closures of informal markets and restrictions on communal gatherings further compounded these challenges, leading to a domino effect on food supply chains and access (Matamanda et al., 2022). As a result, urban poor communities found themselves grappling with exacerbated food insecurity, a crisis that required immediate attention and tailored interventions.

This study is situated within the broader discourse on the impacts of pandemics on migrants, emphasising the need to address their unique vulnerabilities. Central to this study is the framing of associational life and belonging, a lens that proves particularly relevant in understanding the impacts of the COVID-19 pandemic on vulnerable populations, specifically foreign migrants in informal settlements (Bhanye, 2023a). The disruptions caused by lockdown measures extend beyond the immediate economic and health domains; they profoundly affect the social fabric that sustains these communities (Bhanye, 2023c). Associations and communal ties form the bedrock of support for migrants, providing not only economic assistance but also a sense of identity and belonging (Bhanye, 2023b; Laurence and Kim, 2021). The closure of markets and restrictions on communal gatherings eroded these social support networks, profoundly altering the lived experiences of migrants.

This paper explores the impacts that bans on associational life had on the food security of foreign migrants in informal settlements during the COVID-19 pandemic. It examines the various factors that contribute to the vulnerability of these populations, including their legal status, lack of access to social safety nets, and limited resources. The study draws on qualitative data gathered through ethnographic fieldwork among Malawian migrants (herein referred to as Lydiatians) living in an informal settlement in Zimbabwe's Norton peri-urban area. In this context, the ethnographic study conducted at Lydiate informal settlement among Malawian migrants serves as a unique contribution to the existing literature. Ethnography, with its focus on immersive and context-specific understanding, allowed the researcher to get closer and gather information on the daily life, social interactions, and coping mechanisms of migrants during the COVID-19 pandemic. The qualitative ethnographic approach offered a more detailed understanding than quantitative data alone, shedding light on the subtle ways in which migrants navigate challenges, find resilience, and forge 'informal ways of belonging' even in the face of bans on associational life. Therefore, this ethnographic study enriches the existing literature by offering a micro-level perspective that contributes to the broader understanding of how social connections shape the vulnerabilities and resilience of migrant populations during crises like the COVID-19 pandemic.

The paper is structured as follows: first, it provides a literature review on food security in the context of migrant communities, and on the significance of associational life and belonging among migrants in informal settlements. The section that follows describes the methodology used to collect data for this study – ethnography – and presents the background and context of migrants at Lydiate. The study then presents a section on associational life and its significance among Lydiatians. This is followed by a presentation of the study findings, highlighting the impacts that bans on associational life have had on the food security of migrants at Lydiate informal settlement. The final section concludes the study, providing policy recommendations for addressing food security challenges faced by foreign migrants in informal settlements during the COVID-19 pandemic.

Food security in the context of migrant communities

Food security refers to the ability of individuals, households, and communities to access sufficient, safe, nutritious, and culturally appropriate food that meets their dietary needs and preferences for an active and healthy life (Alonso et al., 2018; Pinstrup-Andersen, 2009). The term food security encompasses several dimensions, including availability, access, utilisation, and stability (Gibson, 2012). Availability refers to the physical availability of food, which depends on the production, distribution, and storage of food at the local, national, and global levels (Gibson, 2012). Availability is influenced by factors like climate, natural disasters, conflicts, agricultural policies, food trade, and transportation systems. Access refers to the ability of individuals and households to obtain food through purchase, production, or other means (Pinstrup-Andersen, 2009). Income, prices, market availability, and physical access to food sources influence food access. In addition, social and cultural factors, such as gender, ethnicity, and social status, can affect access to food. Utilisation refers to the ability of individuals to use food effectively for their nutritional needs, and is influenced by factors such as food safety, hygiene, and nutrition education, as well as access to healthcare and sanitation facilities (Alonso et al., 2018). Stability refers to the ability of individuals and households to maintain food security over time, even in the face of shocks such as economic crises, natural disasters, or political instability. It is affected by factors such as social protection policies, savings, and coping mechanisms.

The UN Migration Agency (IOM) defines a migrant as any person who is moving or has moved across an international border or within a State away from his/her habitual place of residence, regardless of: (1) the person's legal status; (2) whether the movement is voluntary or involuntary; (3) what the causes for the movement are; or (4) what the length of the stay is (IOM, 2022). The reasons for migration vary widely and may include economic, social, political, or environmental factors. There are several types of migrants, including economic migrants, who move to seek employment opportunities or to improve their economic status, and refugees, who are forced to flee their home country due to persecution, conflict, or other forms of violence or instability (IOM, 2022). In the context of the COVID-19 pandemic, migrant populations have faced particular challenges, including restrictions on travel and movement, difficulties in accessing healthcare and social services, and economic hardships due to job loss or reduced income (Che et al., 2020). Migrants living in informal settlements or slums may face additional challenges in accessing basic services such as water and sanitation, which can significantly impact their health and well-being (Chirisa et al., 2020; Matamanda et al., 2022).

Studies show that the COVID-19 pandemic highlighted the vulnerability of foreign migrant populations in informal settlements, particularly with respect to accessing sufficient and nutritious food (Niles et al., 2020; Smith and Wesselbaum, 2020). For example, a study by Suhardiman et al. (2021) found that foreign migrant workers in Asia faced significant challenges in accessing food during the pandemic, due to job loss and restrictions on movement. Similarly, a study by Chauhan and Singh (2020) found that foreign migrants in India faced food insecurity due to a lack of access to social protection programmes and basic services such as water and sanitation. In addition to these challenges, foreign migrants in informal settlements also faced discrimination and exclusion from local food systems, exacerbating food insecurity. For example, a study by Chakraborty and Bhabha (2021) found that foreign migrants in South Asia faced exclusion from local food

markets due to language barriers and cultural differences. However, some studies have also highlighted the resilience and adaptive strategies of foreign migrants in the face of food insecurity. For example, a study by Payán et al. (2022) found that Latino immigrants in California, USA, relied on informal food networks and social support systems to cope with food insecurity during the pandemic. In addition to the challenges and adaptive strategies identified in the existing research, several factors can influence food security among foreign migrants in informal settlements. These include factors related to the migrants themselves, such as their socioeconomic status, education level, and cultural background, as well as external factors, such as government policies, the availability of social protection programmes, and the functioning of local food systems. For example, a study by Ogundari et al. (2021) found that the food security of foreign migrants in the United States was strongly influenced by their access to social protection programmes such as SNAP (Supplemental Nutrition Assistance Program), as well as their level of education and English proficiency.

The above preliminary research on food security in the context of foreign migrants in informal settlements during the COVID-19 pandemic highlights the complex and diverse nature of the issue of migrants and food insecurity during the COVID-19 pandemic. While there is a growing awareness of the challenges faced by this population, there is a need for more comprehensive research to: (1) determine the impacts that bans on associational life during the COVID-19 pandemic have had on the food security of foreign migrants; and (2) identify effective interventions and strategies to address food insecurity and promote the well-being of foreign migrants in informal settlements.

Significance of associational life and belonging among migrants in informal settlements

Associational life refers to forming and participating in social groups and organisations based on shared interests or identities (Bhanye 2023a; Giurca and Metz, 2018). For migrants in informal settlements, associational life can provide a sense of community and belonging, and opportunities for social interaction and networking. These groups can be based on a wide range of factors, including cultural, linguistic, religious, or political affiliations and shared experiences of migration and settlement (Sparrowe et al., 2021). Participation in associational life can have numerous positive impacts on the well-being of migrants in informal settlements. Research has shown that involvement in community groups and organisations can reduce social isolation and loneliness, improve mental health, and increase social support networks (Bhanye, 2023a; Wessendorf and Phillimore, 2019). Participating in these groups can also help migrants develop skills and knowledge relevant to their settlement and integration, such as language learning, job skills, and civic engagement (Wessendorf and Phillimore, 2019). Associational life is often seen as an important aspect of civil society, providing individuals with opportunities for social engagement, personal growth, and political participation. By organising themselves into associations, migrants can amplify their voices and influence decision-making processes that affect their lives (Kindler et al., 2015). This can include advocating for improved housing, sanitation, healthcare, and education, and addressing issues such as discrimination, violence, and exploitation. Through collective action, migrants can challenge the structural inequalities and power imbalances that underlie the informal settlement system (Kindler et al., 2015).

Belonging in the context of migrants' experience refers to the sense of social, cultural, and psychological attachment that individuals feel toward the new community they have migrated to (Bhanye, 2022; Gilmartin, 2008). It involves feeling accepted, valued, and included in the new society, despite differences in language, culture, and background. Belonging can significantly impact the well-being and social integration of migrants, as it provides a sense of security, identity, and connection to the wider community (Anthias, 2009; Bhanye, 2022). It can be fostered through various social and cultural activities, such as language classes, cultural events, and community service, promoting interaction and social cohesion among migrants and the wider community (Bhanye, 2023c). Migrants in informal settlements often experience a sense of isolation and disconnection from the wider society. One way to address this issue is by promoting associational life and a sense of belonging

among themselves (Blachnicka-Ciacek et al., 2021). This paper explores the significance of associational life and belonging among migrants in informal settlements, examining the ways in which bans of such associations during the COVID-19 pandemic affected migrants' food security.

Ethnographic fieldwork among Lydiatians

To comprehensively explore the impacts of mandatory lockdowns during the COVID-19 pandemic on food security among foreign migrants in informal settlements, this study employed a qualitative ethnographic approach. The qualitative research consisted of 50 in-depth interviews with migrants and an additional 7 key informant interviews. The study participants were selected purposively, encompassing migrants aged 18 and above, both men and women, and individuals from various migrant generations (first, second, third, and fourth). To enrich the understanding of the associational life and its disruptions, key informant interviews were conducted with community leaders, the local Councillor, and civic activists.

The fieldwork was conducted at Lydiate informal settlement in Zimbabwe's Norton peri-urban area, recognised for its substantial population of foreign migrants of Malawian origin. This location was chosen through a combination of purposive and snowball sampling techniques. Purposive sampling considered the characteristics of the settlement, such as its high proportion of foreign migrants and accessibility. Subsequently, snowball sampling was employed to recruit additional participants through referrals from the initial study subjects.

The research was carried out between January 2020 and November 2021 as part of a broader Doctoral research project examining mobility and sociality among migrants. Leveraging the researcher's privileged position as an insider facilitated a deeper understanding of the associational dynamics of migrants in Lydiate during the pandemic. In-depth interviews were conducted based on participants' willingness and ability to contribute insights into the impacts of COVID-19 on their food security. In addition to interviews, participant observations played a crucial role in gathering data on the effects of bans on associational life. The researcher immersed himself in the settlement, observing daily interactions, social dynamics, and food-related practices. The impact of the pandemic on informal food markets and related activities was also documented through participant observation.

In the course of this research, several COVID-19 measures presented noteworthy challenges that influenced the full-immersion ethnographic approach of the study. Social distancing mandates, restrictions on movement, and health safety concerns posed logistic hurdles to traditional fieldwork methodologies. Consequently, a pivotal decision was made to transition to digital and remote ethnography, leveraging technology to maintain research momentum during a period of stringent lockdowns. The researcher transitioned to remote ethnography at the height of the COVID-19 pandemic and strict mandatory lockdowns, starting June 2020. Digital ethnography (also known as "virtual ethnography," "cyber ethnography," "netnography," or "mobile ethnography") is a digital transformation of in-person ethnography and a form of online or remote ethnographic research that leverages the power of technology – gadgets and internet – to help researchers to remotely generate rich, contextual insights into the lived experiences of social groups under study (See Hjorth et al., 2017; Varis 2016). Digital/remote ethnography involved becoming part of the community's WhatsApp group, facilitated by Dhabuka, an active group administrator known to the researcher before the pandemic. The WhatsApp group emerged as a vital coping mechanism during the bans on associational life. In-depth interviews continued through phone calls, supplemented by conversations on the WhatsApp platform.

The switch to digital ethnography presented both opportunities and challenges. The opportunities included broader access to participants through online platforms, increased flexibility in scheduling virtual interviews, and the potential for real-time observations of digital interactions within the community (Bhanye, 2023a). However, challenges were also apparent, encompassing issues of digital literacy, potential biases introduced

by online communication, and the inability to fully replicate the immersive nature of in-person ethnography. Moreover, disparities in internet access among participants introduced concerns about inclusivity (Hjorth et al., 2017; Varis, 2016).
To address these challenges, the researcher established clear communication channels, fostering a sense of trust and openness in virtual interactions. Importantly, recognising the limitations of virtual ethnography, he paid particular attention to acknowledging and managing potential biases introduced by the digital medium. Additionally, regular check-ins and follow-ups were conducted through phone calls and alternative communication channels to ensure that the challenges of the digital format did not compromise the depth of understanding gained through in-person ethnography. The iterative nature of the research process allowed for continuous refinement of remote methodologies to navigate evolving challenges.

To address ethical issues during the study, informed consent was obtained from all study participants, who were also briefed about the research goals, procedures, and potential risks and benefits. Confidentiality and anonymity were rigorously maintained throughout the study. The data analysis followed a thematic approach. Interview transcripts and field notes were meticulously reviewed, and themes relevant to the research questions were identified. Through an iterative process of coding and analysis, these themes were refined, resulting in a final set that encapsulates the key findings of the study.

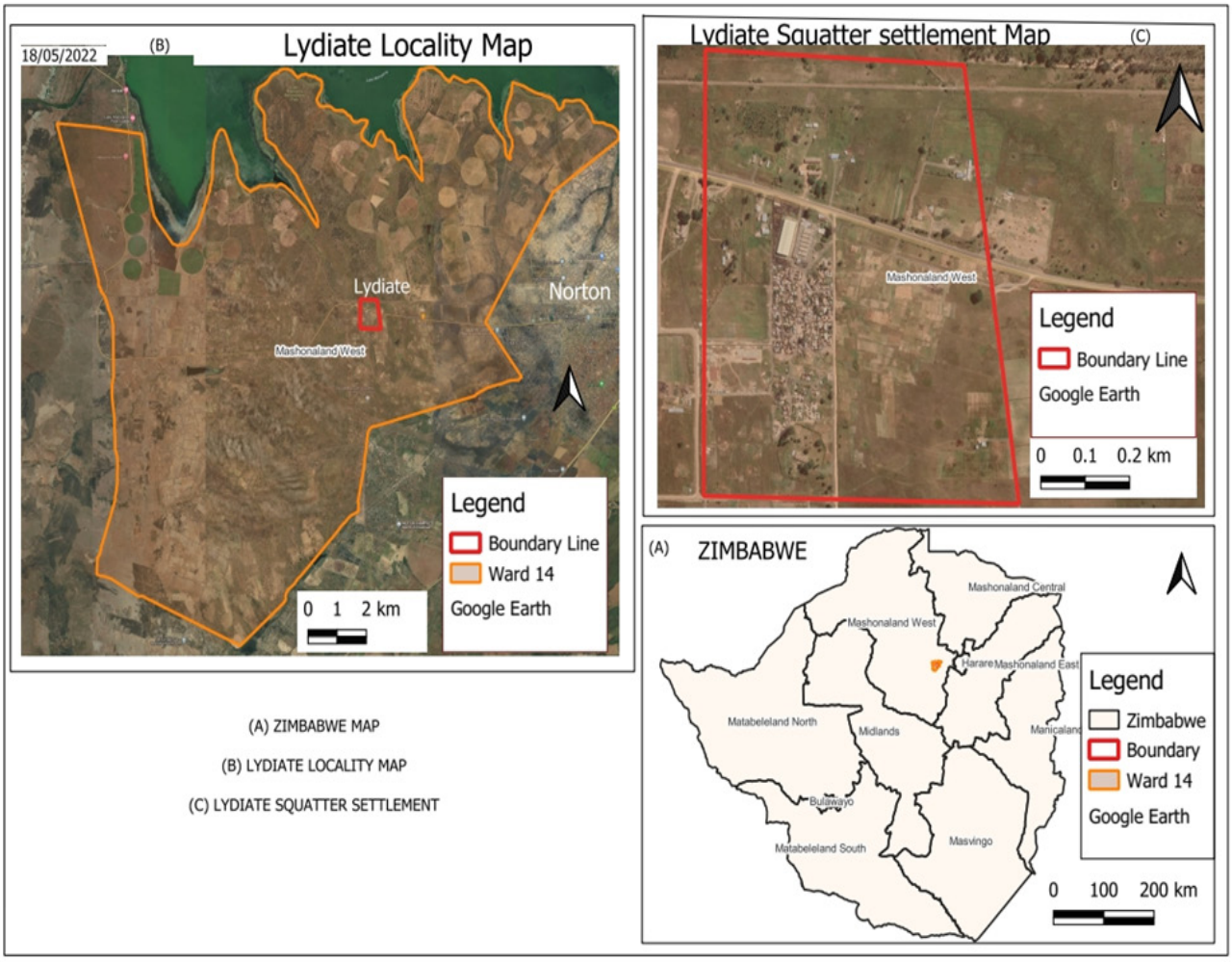
Background and context of migrants at Lydiate

Malawian migrants at Lydiate informal settlement (Lydiatians) have a long migration history linked to colonial policies and practices (Bhanye, 2023c). Beginning in 1895 and up until the 1970s, Malawians migrated to Southern Rhodesia as part of migrant labour pools under the infamous colonial labour migration (Chibaro/Mthandizi) system (Bhanye, 2023c). It was during this period that Nyasaland (now Malawi) acted as a labour reservoir for Zimbabwe and South Africa's colonial capitalist economies, and Malawian migrants were engaged as labourers on colonial white-owned farms and mines (Daimon, 2015). Some of these migrants were settled on Lydiate, a former farm compound. Lydiate squatter settlement is now home to first, second, third and fourth-generation Malawians, who together have become an ethnic enclave and diaspora community in Zimbabwe (Bhanye, 2022). Lydiatians now have internal differences based on the history of settlement. To begin with, there are vauyi vakare, long-term migrants who live in the core of the settlement. Then there are vauyi vazvino, or recent migrants (Bhanye, 2022), who live on the periphery of the settlement in areas known as kuma nyusitendi (now stands). Figure 1 shows the location of the study area, Lydiate.

Lydiate informal settlement falls under Mashonaland West Province of Zimbabwe, in Ward 14 of Chegutu Rural District Council. The community relies on services from shopping areas like Lucky Store owned by the former Councillor Mr. Musevenzi, Lydiate Store, and Mboma shopping and beer drinking area, as well as Mutipitipi Primary School. The area also lies close to other popular areas like Murombedzi, Darwendale, Mapinga, and Trelawney, among others, where some Lydiatians travel for various livelihood activities.

Life in Lydiate informal settlement is generally difficult. Like other informal settlements in Southern Africa, Lydiate is what Nyamwanza and Dzingirai (2020) term a 'rough neighbourhood'. To begin with, there is an acute scarcity of land for settlement, and this is against a backdrop of the population in the informal settlement having grown to about 1200, with more than 60% of the migrants being youths between the ages of 18 and 35 who now require their own individual pieces of land for settlement. The livelihoods in Lydiate are diverse, with peri-urban petty farming, trading, and casual labour being key. However, as in several other African informal settlements, the general livelihood situation in Lydiate is poor. Most people in Lydiate are also illiterate, making it difficult for them to look for better opportunities, including formal employment elsewhere that pays better wages. Peri-urban petty farming barely provides any resources since Lydiatians were denied land during Zimbabwe's Fast Track Land Reform Programme (FTLRP). There is also a tobacco grading plant in the settlement that relies on Lydiatians for labour but generates a trail of sicknesses like Tuberculosis (TB). The plant operates from May to September and, at the height of activity, employs close to 500 migrants.

Figure 1: Location of the study area (Lydiate)



Source: Author

Foreign lands are often rough and uncomfortable for migrants due to the othering between the so-called autochthons (sons of the soil) versus the allogenes or allochtons; and /or the indigenous versus the aliens or strangers (Daimon, 2015). This is the case of Lydiatians, who have often been labelled as aliens, foreigners, and lost ones, along with several other derogatory titles. The migrants are also under constant threats of eviction by local authorities and locals who consider them criminals, outcasts and bandits who flout the law of the land. Most Lydiatians live in inter-generational households crammed into small spaces and buildings, making social distancing and self-isolation during the COVID-19 pandemic largely impossible because of the overcrowding. During the COVID-19 pandemic, regular handwashing was problematic due to a lack of water or adequate sanitation access. Testing for COVID-19 at the small local clinic was challenging due to a lack of resources and capacity. In short, virus containment measures such as hand washing and self-isolation were less effective and often impossible to practice at Lydiate. Another sad reality is that the number of COVID-19 cases in informal settlements like Lydiate were inevitably underestimated. There are also elderly first-generation Malawians who mostly live in poverty and have high rates of chronic medical conditions, like non-communicable respiratory diseases (asthma, tuberculosis etc.), which placed them at risk of severe illness and death from COVID-19.

Associational life and its significance among Lydiatians

Life among Lydiatians is highly dependent on associations with kin, fictive kin, friends, and neighbours. Beginning with the organisation of the community, Lydiatians belong to kin groups. These kin groups are not locked to specific spaces; it is common for members to be spread across the settlement, depending on land availability. Elders in kinship groups remain important and occasionally meet to deliberate over community matters affecting their members. There is a culture of reciprocity between members; people assist one another with basic needs and will attend one another's funerals and celebrations alike. As a community leader said: 'We are like a big family in this community. We support each other, both in times of need and in times of celebration.'[1] In the literature, kinship has widely been identified as a critical factor in facilitating the integration of migrants and their access to scarce resources (see, for example, Kazlou and Wennberg, 2021). The decades of coexistence among Lydiatians have also strengthened their social ties, which are so important in times of need. This came out clearly in an interview with 67-year-old Dorothy Ngadza, who explained:

> *People in this community are now more comfortable with this place than anywhere else because of the strong connection with friends and relatives here. Yes, life can be difficult here and there, but there is no other place where you are better welcome than here. Some of us now have decades staying here, and we have built strong friendships with others here. Some of my friends here have even become like blood relatives. I am also privileged to have four families that I am closely related to here. I have three brothers and a sister who both stay here. We understand each other better and support each other in difficult times.*[2]

I observed that associational life at Lydiate is mediated by the various institutions and networks that have emerged over time in the community. The community, for example, has an established hierarchy of leadership that govern the affairs of the community. There are selected leaders, 'maSabhuku' (village heads), who maintain a register (bhuku) of the settlement. At the micro level, the compound is divided into five units, each represented by a 'Sabhuku', chosen by the community and officially appointed by the powerful chief Chivero. The maSabhuku command respect from the migrants, who regard them as instrumental in facilitating land access. Also active in the compound are Vakuru-vakuru (big men). These include vakuru venzvimbo (the Councillor) representing the state; vakuru vemusangano (the local ZANU PF political party chairperson), and finally, mukuru wevechidiki (the local ZANU PF political party youth chairman). It is common for these leaders to oscillate between Lydiate and the towns of Harare and Norton. These 'big men' have the power to change the politics on the ground, including facilitating access to resources.

Associational life in Lydiate is also strengthened as Lydiatians drink beer together at the nearby beer halls and some sell illicit brews, 'chikokiyana', in the compound. Well-known homes in the community have now become like small beerhalls, which the locals refer to as 'mashabeen'. Lydiatians buy the illicit brews and sit down to drink and chat about various matters in the community.[3] During the COVID-19 pandemic, these shebeens became centres of activity as people could not visit proper bars which were closed. During funerals, Lydiatians also strongly support one another; they bury their lost ones in song, dance and Nyau cult rituals. It is a norm for every household to give support, materially or in kind, to the deceased's family. This is also the case during celebrations, where community members pool resources and have music and meat as they celebrate.[4] Associational life is also meaningful among the youth who occasionally gather, especially during weekends, to play soccer on the Mutipitipi primary school ground adjacent to the community. During other times, the youths gather to play cards, commonly referred to as 'makasi'. During these times, they bond more and tip one another on potential opportunities for making money in the community and building syndicates for exploring opportunities such as menial jobs, fish mongering, and gold panning outside the community. Thus, Lydiate community is punctuated by a frenzy of mobility and transition characterised by migrants, often young, continually moving in and out of the settlement in response to better opportunities elsewhere (Bhanye et al., 2021).

[1] Interview with Community Leader Matambo at Lydiate Farm, 20 June 2020.
[2] Interview with Dorothy Ngadza at Lydiate Farm, 11 May 2020.
[3] Interview with Mr. Tembo at Lydiate Farm, 26 June 2020.
[4] Interview with Mr. Tembo at Lydiate Farm, 23 June 2020.

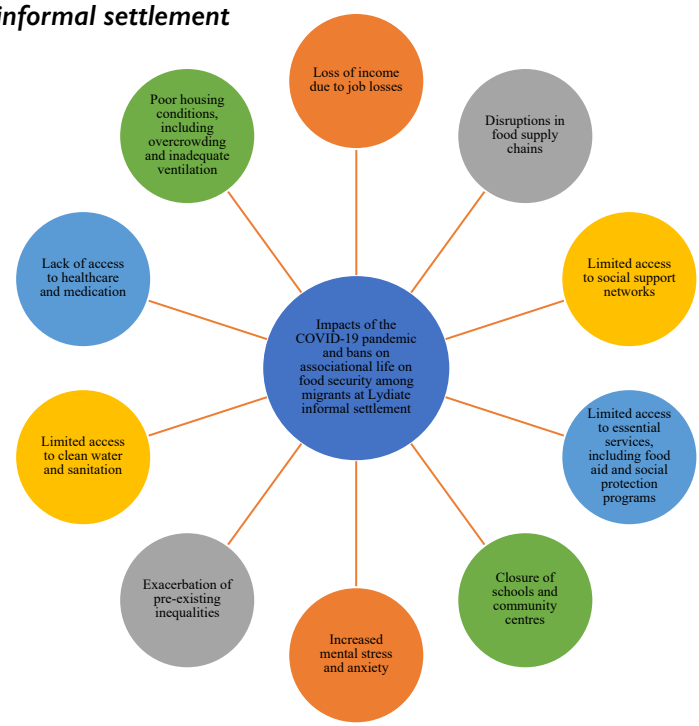
Several established religions bind the people of Lydiate together, from Christianity to Islam and the enchanting Nyau cult. The Islamic Mosque is located by the roadside, and there are multiple churches of various denominations scattered in and outside the compound. Among the churches that I observed and interacted with in Lydiate were the Gospel Power Ministries, the Marange church in Mutufa and Norton, the Zvakazarurwa, the Apostolic church led by Rairo Tembo (who lives in the compound), the AFM at Mutipitipi Primary school, the Calvary Fellowship Ministries, the Pentecostal Holiness church in Norton, the Ever Journey Apostolic church, the Calvary ministries, the Roman Catholic church, the Mwazha, the Anglican church, the Zvakazarurwa Zvavapostori, and the Seventh Day Adventist church. Religious associations in Lydiate have brought the community together through shared rituals and beliefs. Beyond faith and spiritual guidance, members also give one another moral and tangible support like food and clothing handouts.[5] Thus, it is common for members to belong to multiple faiths to maximise the benefits offered by the various religions.

Among the various religions in Lydiate, the Nyau cult seems more outstanding and mysterious. It is customary in Lydiate for the Nyau cult to organise initiation rites for the youth. The enchanting and dramatic Nyau cult has a voice and influence on sociality and associational affairs in the community. Like all other religious leaders, Nyau leadership is respected among Lydiatians; It is presumed to have ritual powers capable of inflicting harm or bringing illness upon insubordinate people who go against its decisions. The popular Nyau ceremonies and dances occur on weekends, usually after church services and funerals.

Impacts of the COVID-19 pandemic and bans on associational life, on food security among migrants at Lydiate informal settlement

The COVID-19 pandemic profoundly impacted the food security of migrants living at Lydiate informal settlement in Zimbabwe. These impacts on food security manifested through loss of income due to job losses, disruptions in food supply chains, limited access to social support networks, limited access to essential services, including food aid and social protection programmes, closure of schools and community centres, increased mental stress and anxiety, exacerbation of pre-existing inequalities, limited access to clean water and sanitation, lack of access to healthcare and medication, and poor housing conditions, including overcrowding and inadequate ventilation (Figure 2).

Figure 2: Impacts of the COVID-19 pandemic and bans on associational life, on food security among migrants at Lydiate informal settlement



Loss of income due to job losses

The COVID-19 pandemic and the subsequent lockdowns resulted in job losses and reduced working hours, impacting the income of migrants at Lydiate informal settlement. Lydiatians are often employed in the informal sector, already characterised by low pay, limited job security, and lack of benefits. The pandemic hit the informal sector hard, with many businesses in nearby towns like Norton shutting down and drastically reducing their operations, leading to job losses and reduced working hours. This loss of income severely impacted the food security of Lydiatians, affecting their ability to provide food for their families and generating food insecurity.

[5] Interview with Mrs. Zvinyenye at Lydiate Informal Settlement, 27 June 2020

A Lydiatian, whose already low and precarious income was significantly disrupted after losing several jobs on nearby farms, commented:

> *I lost my job three months ago at Mboma farm. The operations were affected by Covid-19, and the farm owner decided to stop the chicken project. Now I'm stuck and don't know how to feed my family.*[6]

Figure 3 shows farming activities (livestock and crop production) at nearby farms where Lydiatians used to find employment before the COVID-19 pandemic and bans on associational life.

Figure 3: Farming activities (livestock and crop production) at nearby farms where Lydiatians often find employment

Source: Author's fieldwork

In a similar case, another Lydiatian said:

> *Our lives have been completely shattered. The lockdowns have halted all the economic activities in this community and the nearby areas where we used to get employment. This has resulted in substantial employment loss among young people like me.*[7]

Figure 4 shows the researcher working on a building project with some migrants from Lydiate informal settlement before the COVID-19 pandemic halted their employment. The building project was for a poultry farmer who owned an agro-residential plot adjacent to Lydiate informal settlement.

Figure 4: The researcher working on a building project with some migrants from Lydiate informal settlement before the COVID-19 pandemic

Source: Author's fieldwork

[6] Interview with Mr Gabarinocheka at Lydiate Informal Settlement, 27 June 2021.
[7] Interview with Mr Kainos at Lydiate Informal Settlement, 22 June 2021.

nother migrant at Lydiate informal settlement – who like many other Lydiatians survived owing to the informal sector, which was banned during mandatory lockdowns – explained:

> *They have banned our livelihoods, and we no longer earn an income. They forget that we have recurrent expenses for food every day; how do they expect us to survive during the pandemic?*[8]

Figure 5 shows Mr Jacob's bunches of bananas which he used to sell as his main livelihood before the COVID-19 pandemic.

Figure 5: Mr Jacob's bunches of bananas which he used to sell as his main livelihood before the COVID-19 pandemic

Source: Author's fieldwork

In the final case, a migrant who was forced to skip meals together with his family after he lost his job in the nearby town during the COVID-19 pandemic explained:

> *Before the COVID-19 pandemic, I used to work in the nearby Norton town. The loss of income because of job losses directly affected my ability to purchase enough food for my family. This led to severe food insecurity throughout the pandemic. We were forced to skip meals, eat less nutritious food, and rely on cheap food with little nutritional value.*[9]

Food insecurity arises when people do not have access to sufficient, safe, and nutritious food to meet their dietary needs for an active and healthy life (Hines et al., 2021). Food insecurity can result in undernutrition or malnutrition, leading to poor health outcomes, including stunted growth, micronutrient deficiencies, and impaired cognitive development (Hines et al., 2021).

The COVID-19 pandemic also negatively affected tobacco grading work at Lydiate. For several decades, Lydiatians have been bound by this common practice of providing labour in the local tobacco grading shade that belongs to a white man, who generously allocated some of the Lydiatians' spaces for settlement. The tobacco grading shade (Figure 6) normally has more than 500 people working simultaneously; however, because of the COVID-19 pandemic, the shade could only accommodate a small group at a time, working on a shift basis. While the white owner allocated COVID-19 PEP (face masks, sanitisers) to the workers, tobacco grading exposed them to diseases like tuberculosis, which made them more vulnerable to the COVID-19 virus. However, Lydiatians who relied on the daily earnings from labour in the tobacco grading plant had no option but to take risks to feed their families during the pandemic.

[8] Interview with Mr Jacob at Lydiate Informal Settlement, 20 June 2021
[9] Interview with Mr Peter at Lydiate Informal Settlement, 14 June 2021

Figure 6: Empty Tobacco grading shade at Lydiate during the COVID-19 pandemic

Source: Author's fieldwork

Disruptions in food supply chains

Lockdowns and restrictions on movement to curb the spread of the virus led to disruptions in the production, processing, and distribution of food items, resulting in shortages and price hikes. This negatively affected migrants at Lydiate informal settlement. The disruptions in food supplies were caused by a combination of factors, including the closure of borders, reduced workforce due to illness and restrictions on movement, and disruptions in transportation and logistics. The shortages and price hikes made it difficult for migrants at Lydiate informal settlement to access nutritious food, thus increasing the prevalence of malnutrition and other health problems. The disruptions in food supply chains also impacted the availability of fresh fruit and vegetables, which are essential for a healthy diet. One of the community leaders at Lydiate informal settlement commented:

> *When the government imposed the first lockdown, panic buying and hoarding made it difficult for vulnerable communities like Lydiate to access food. The increased food prices during the pandemic also made it difficult for us to afford nutritious food. People here work in low-paying jobs and do not have access to social protection programmes, making it difficult for them to cope with price hikes. As a result, they are forced to reduce the quantity and quality of food they consume, leading to malnutrition and other health problems.*[10]

The pandemic and associated lockdowns also resulted in limited access to transportation to move from Lydiate informal settlement to other places, making it difficult for Lydiatians to access food markets, grocery stores, and other food sources. This was particularly challenging for the elderly, often first-generation migrants, the disabled, and the infirm and invalids.

Limited access to social support networks

Limited access to social support networks significantly compounded the impacts of the COVID-19 pandemic and lockdowns on food security among Lydiatians. These support networks, which often include friends, family, and community organisations, provide critical support and resources during times of food insecurity. However, lockdown restrictions on gatherings and mobility disrupted these networks, making it harder for migrants at Lydiate to obtain the support and resources they needed to access adequate and nutritious food. Social support networks can be particularly crucial for foreign migrants living in informal settlements, as they may face discrimination and exclusion from formal support systems (Bhanye, 2023d). These networks can provide essential assistance in navigating bureaucratic processes, accessing health care and social services, and finding work and food sources. They can also provide emotional support, which is critical for maintaining

[10] Interview with Mr Mrs Zvinyenye at Lydiate Informal Settlement, 20 June 2021

mental health and well-being during times of crisis. At Lydiate informal settlement, the pandemic drastically reduced access to social and cultural practices like religious gatherings and the Nyau cult practices that are very important for maintaining a sense of community and identity among Lydiatians. Figure 7 shows Nyau Cult gatherings in Lydiate before the COVID-19 pandemic.

Figure 7: Nyau Cult gatherings in Lydiate before the COVID-19 pandemic

Source: Author's fieldwork

Meetings among members of other religious groups (Muslims and Christians) were also affected in Lydiate (Bhanye, 2023c). Because of the restrictions on gatherings, there were no longer 'big Sundays'. In one instance, and at the height of COVID-19 strict lockdowns, members of the Apostolic church were beaten up by the police and soldiers. They had defied COVID-19 lockdown regulations banning church gatherings and had engaged in a public church programme close to the railway adjacent to Lydiate community. Besides the beatings, the soldiers and police forced the church members to drink beer, which is against their religious beliefs.[11] This incident was reported on all social media platforms in Zimbabwe, thus reinforcing migrants' bad reputation as 'deviants,' 'law breakers', and 'perpetual outcasts'.

In the face of these punishments, many churches were closed, greatly affecting numerous people who depended on these gatherings for emotional, spiritual, and social support. The modern Pentecostal churchgoers, for example, believe in a spirit-filled and empowered life through prosperity gospel and demonstrations of power through divine healing and prophecy. For the Pentecostal churchgoers in Lydiate, the ban on associational life meant the loss of hope for tomorrow and exposure to demons and diseases. During the study, I encountered some Christians who had become sickly and despondent because they could not physically attend church on Sundays after the pandemic hit. One female migrant commented:

> *We depend on the church for our emotional and social life. The pandemic did not only disrupt our livelihoods; it also cost our spiritual life. When we meet at church gatherings physically, we are given hope with the word of God; some are healed, while others are protected from potential future calamities by the word of prophecy.*[12]

Because of the pandemic, stigma and discrimination against households affected by COVID-19 increased in the community. Traditional support networks were disrupted as some community members were no longer entertaining visitors. As a respondent in Lydiate said:

> *People here are no longer allowing visitors; this is a massive blow because, as a community, we are used to supporting each other. Some people do not have food to sustain themselves throughout the lockdown but cannot approach other households because they fear the virus.*[13]

[11] Interview with Mr. Kambeva at Lydiate Informal Settlement, 20 June 2020
[12] WhatsApp Interview with Mrs Gidhiza, 10 October 2021
[13] WhatsApp Interview with Mrs Mzauzi, 13 October 2021

The COVID-19 pandemic and lockdowns made it challenging for migrants to access these support networks. They could not physically meet with their support system due to restrictions on gatherings and mobility. Additionally, the economic impact of the pandemic made it difficult for many individuals in Lydiate community to provide financial support to their friends and family members in need, which further strained social support networks. To address this issue, governments, community organisations, and individuals must work together to find innovative ways to maintain social support networks during times of crisis. This could include promoting online communication platforms or providing financial assistance to individuals unable to support their family or friends in person. Additionally, community organisations and local governments can work to provide additional support to foreign migrants who may be more isolated or excluded from formal support systems.

Limited access to essential services, including food aid and social protection programmes

Another significant impact of the pandemic and lockdowns on the food security of migrants in informal settlements was the limited access to essential services, including food aid and social protection programmes. Migrants living in informal settlements often face multiple barriers that limit their access to essential services, including discrimination, exclusion, and lack of documentation (X). At Lydiate informal settlement, these barriers were compounded by the COVID-19 pandemic, making it even more challenging for migrants to access these services. Explaining the increased discrimination and exclusion triggered by the COVID-19 pandemic, a migrant explained:

> *Discrimination and exclusion have become widespread issues ever since the pandemic started. We are perceived as carriers of the virus and are stigmatised and discriminated against by the wider society. This discrimination and exclusion make accessing essential services, including food aid and social protection programmes, difficult.*[14]

Closure of schools and community centres

The COVID-19 pandemic and lockdowns also led to the closure of schools and community centres, disrupting feeding programmes and other nutrition interventions. Schools and community centres often provide essential nutrition interventions, such as school feeding programmes, food distribution, and nutrition education, to vulnerable populations, including migrants living in informal settlements like Lydiate. At Lydiate, the closure of schools and community centres due to the pandemic disrupted these critical nutrition interventions, leaving many migrants, especially school-going children, without access to nutritious food. School feeding programmes at nearby schools like Mtipitipi primary school, which provide free or subsidised meals to students, were disrupted, depriving many children of their only daily meal. This severely impacted the food security and nutritional status of migrant children at Lydiate informal settlement. There was also reduced access to food aid and other forms of assistance typically distributed by community organisations and Non-Governmental Organisations (NGOs), which were forced to suspend operations due to lockdown restrictions. Community centres also play an essential role in providing migrants at Lydiate with nutrition interventions such as food distribution, nutrition education, and cooking classes. The closure of these centres due to the pandemic disrupted these essential interventions, leaving many migrants without access to nutritious food and information about healthy eating habits. The closure of schools and community centres severely impacted migrant women in particular, as they often rely on these institutions for their children's nutrition and education. This severely impacted the food security and nutritional status of migrant families at Lydiate.

Increased mental stress and anxiety

The study also revealed increased mental stress and anxiety among migrants due to the COVID-19 pandemic and associated lockdowns. The pandemic disrupted daily life, leading to job losses, financial insecurity, and

[14] WhatsApp Interview with Dorothy, 18 October 2021

social isolation, which all contributed to increased levels of stress and anxiety among Lydiatians. Furthermore, Lydiatians faced additional stressors and challenges due to their living conditions, including inadequate housing, lack of access to basic services, and social exclusion, which exacerbated mental stress and anxiety levels. This, in turn, severely impacted food security and nutritional status because of a range of unhealthy eating habits, including overeating or under-eating. Overeating often occurs as a coping mechanism for stress and anxiety, leading to weight gain and obesity. On the other hand, under-eating can occur due to a lack of appetite or financial constraints, leading to malnutrition and other health problems. Moreover, the impact of mental stress and anxiety on the body's ability to absorb nutrients is well documented. Stress and anxiety can lead to decreased production of digestive enzymes, resulting in poor digestion and nutrient absorption (Da Silva et al., 2020). Additionally, stress and anxiety can lead to changes in the gut microbiome, which can further impact the body's ability to absorb nutrients (Da Silva et al., 2020).

Exacerbation of pre-existing inequalities

The COVID-19 pandemic also highlighted and exacerbated pre-existing inequalities, particularly for marginalised communities, including migrants living in informal settlements. These communities, like Lydiate, were already vulnerable due to poverty, lack of access to basic services, discrimination, and exclusion from social protection. The pandemic worsened their situation, particularly in terms of food security. Many Lydiatians worked in the informal sector, such as domestic work, street vending, or casual labour, which lacked job security, social protections, and benefits. With the onset of the pandemic, many of these workers lost their jobs or had their working hours reduced, leading to loss of income and increased financial insecurity. This, in turn, impacted their ability to access nutritious food, further exacerbating food insecurity and malnutrition. Amongst Lydiatians, the impacts were disproportionate on women and children, who bear the brunt of food insecurity and other adverse impacts associated with lockdowns and associated restrictions on associational life.

Limited access to clean water and sanitation

Migrants living in informal settlements often lack access to basic services, including clean water and sanitation facilities (Bhanye, 2023c; Matamanda, 2020). The COVID-19 pandemic exacerbated this problem, making it even more challenging for vulnerable communities like Lydiate to maintain their health and well-being. During the study, respondents revealed that limited access to clean water and sanitation facilities increased the risk of infections, including diarrheal diseases, leading to malnutrition, particularly in children. Figure 8 shows two small Blair toilets servicing the entire Lydiate community.

Figure 8: Small Blair toilets servicing the entire Lydiate community

Source: Author's fieldwork

Poor hygiene practices and inadequate sanitation facilities in the community also increased the risk of infectious

diseases, including COVID-19, which could further exacerbate food insecurity. Moreover, the COVID-19 pandemic and subsequent lockdowns increased the demand for water and sanitation facilities, which were already scarce in the community. This resulted in overcrowding and longer waiting times for access to these essential services, further exacerbating the risks of infections and malnutrition. The lack of clean water and sanitation facilities also impacted food security by limiting the ability of households to prepare and store nutritious food. The lack of clean water can for example make it difficult to wash vegetables and fruits, leading to the risk of contamination and illness. Inadequate sanitation facilities also made it challenging to store food safely, leading to food waste and reduced access to nutritious food.

Lack of access to healthcare and medication

Migrants living in informal settlements often lack access to basic healthcare services and medication, which can significantly impact their health and nutritional status (Corburn et al., 2020). The COVID-19 pandemic further exacerbated this issue at Lydiate informal settlement, making it even more challenging for migrants to access essential healthcare services. A community leader at Lydiate informal settlement explained:

> *The COVID-19 pandemic has compounded the lack of access to healthcare services and medication for our people here. Lockdowns and restrictions on movement have also made it difficult for our people to access healthcare services in nearby towns. Further, the fear of infection has led many to avoid seeking care.*[15]

The lack of access to healthcare services and medication can result in untreated health issues, including chronic illnesses, infectious diseases, and mental health conditions. These health issues can impact the nutritional status of individuals, leading to malnutrition and other related health problems. For example, untreated chronic illnesses such as diabetes, hypertension, and heart disease common among Lydiatians affect the body's ability to absorb nutrients, leading to malnutrition. Similarly, infectious diseases like tuberculosis, malaria, and HIV, common in informal settlements like Lydiate, can impact the body's immune system and nutritional status. Moreover, mental health conditions such as anxiety and depression can also impact nutritional status. Individuals experiencing mental health issues may lose their appetite or engage in unhealthy eating habits, leading to malnutrition or overnutrition.

Poor housing conditions, including overcrowding and inadequate ventilation

Poor housing conditions, including overcrowding and inadequate ventilation, are significant challenges faced by migrants living in informal settlements, further compounded by the COVID-19 pandemic. Overcrowding and inadequate ventilation at Lydiate informal settlement increased the risk of infections and impacted the health and well-being of migrants, including their food security. Overcrowding is a significant problem at Lydiate informal settlement, where multiple households often share a single room or living space. This increased the risk of infectious diseases such as COVID-19, as the virus could easily spread in crowded living conditions. Figure 9 shows shacks and cramped living conditions at Lydiate informal settlement

Figure 9: Shacks and cramped living conditions at Lydiate informal settlement

Source: Author's fieldwork

[15] WhatsApp Interview with Mr Bhinya, 06 October 2021

Additionally, the lack of privacy and personal space in overcrowded living conditions among Lydiatians lead to stress, anxiety, and mental health issues, which impact appetite and nutritional status. Inadequate ventilation is also a common problem in informal settlements like Lydiate, where many houses lack windows or proper ventilation systems. Poor ventilation increases the risk of respiratory infections, including COVID-19, as it can cause the build-up of airborne pollutants and pathogens. Moreover, inadequate ventilation can impact individuals' overall health and well-being, leading to headaches, fatigue, and other health problems that can impact their ability to access and consume nutritious food. In short, the COVID-19 pandemic highlighted the importance of adequate housing conditions for promoting public health and food security. Lockdowns and restrictions on movement made it difficult for individuals living in overcrowded or poorly ventilated housing conditions to maintain social distancing and to take other measures to prevent the spread of COVID-19. Furthermore, the economic impact of the pandemic made it challenging for migrants to improve their housing conditions or relocate to safer environments.

Overall, the presented impacts that the COVID-19 pandemic and bans on associational life had on food security among migrants at Lydiate informal settlement are not isolated challenges; rather, they form an interconnected web, where the consequences of one aspect reverberate through various dimensions of individuals' lives. Understanding these interrelationships is crucial for developing effective interventions that address complex challenges faced by migrant communities in the wake of the COVID-19 pandemic and associated disruptions.

Conclusion and way forward

In conclusion, the COVID-19 pandemic significantly impacted the food security of vulnerable populations, including foreign migrants living in informal settlements. Bans on associational life due to mandatory lockdowns disrupted food supply chains and livelihoods, leading to food insecurity among these populations. This paper explored the impacts of such bans on associational life on the food security among Malawian migrants at Lydiate informal settlement in Zimbabwe during the COVID-19 pandemic. The impacts on food security manifested through loss of income due to job losses, disruptions in food supply chains, limited access to social support networks, limited access to essential services, including food aid and social protection programmes, closure of schools and community centres, increased mental stress and anxiety, exacerbation of pre-existing inequalities, limited access to clean water and sanitation, lack of access to healthcare and medication, and poor housing conditions, including overcrowding and inadequate ventilation.

The impacts of the COVID-19 pandemic and of associated bans on associational life were intricately interconnected, creating a complex web of challenges and profoundly affecting the food security of migrants at Lydiate informal settlement. The loss of income, primarily stemming from job losses triggered by the pandemic, acted as a linchpin in this interlinked scenario. As financial resources dwindled, households found themselves grappling with several challenges, including disruptions in food supply chains and limited access to social support networks which were vital for economic sustenance and mutual aid. Compounding the issue, the closure of schools and community centres disrupted not only education but also communal spaces that often served as hubs for resource-sharing and support. The consequences of this disruption were far-reaching, limiting access to essential services, including food aid and social protection programmes that were crucial lifelines for vulnerable populations. As these critical support mechanisms faltered, the vulnerability of households increased, exacerbating pre-existing inequalities within the settlement.

The impacts also extended beyond economic and social spheres to impact mental health, as the pandemic-induced stress and anxiety took a toll on migrants' well-being. This psychological strain further intensified the challenges of maintaining adequate food security, creating a cyclical relationship between mental health and food access. Moreover, the interconnected nature of these impacts extended to basic living conditions. Limited access to clean water and sanitation compounded health risks, especially considering the importance of hygiene in preventing the spread of COVID-19. Simultaneously, the lack of access to healthcare and

medication heightened health vulnerabilities, creating a reinforcing loop wherein compromised health further undermined the ability to maintain food security. Housing conditions played a pivotal role in this interlinked narrative as well. Overcrowded and inadequately ventilated living spaces became breeding grounds for health concerns, including the potential for increased transmission of infectious diseases. Poor housing conditions not only directly impacted the health of migrants but also indirectly influenced their ability to secure and store food adequately.

The findings of the study reveal not only the direct impacts of the COVID-19 pandemic and associated bans on associational life, but also the compounding effect of pre-existing vulnerabilities and marginalisation, significantly exacerbating food insecurity among foreign migrants in informal settlements. Legal or citizenship status of migrants emerged as a critical factor, shaping the extent to which migrants could access essential services and support during the pandemic. Those with precarious legal standing faced higher barriers, limiting their eligibility for social safety nets and exacerbating their susceptibility to food insecurity. Furthermore, the lack of access to robust social safety nets became glaringly apparent, particularly for migrants already on the fringes of formal support systems. The study identified a stark disconnect between the needs of migrants and the available social protection mechanisms, leaving many without adequate assistance during the challenging times brought about by the pandemic. Limited resources further compounded these challenges, with financial constraints restricting migrants' ability to withstand the economic shocks induced by the pandemic and bans on associational life.

Beyond the immediate impacts of COVID-19, these pre-existing vulnerabilities demonstrate the structural inequalities that shape the experiences of migrants in informal settlements. The intersection of legal status, social safety nets, and resource constraints forms a complex array of challenges, significantly influencing food security outcomes during times of crisis. Recognising and addressing these foundational vulnerabilities is imperative for the development of targeted and effective interventions aimed at mitigating food insecurity among foreign migrants in informal settlements, not only during the pandemic but also in the broader context of their lived experiences.

The study's findings also highlight various factors contributing to the vulnerability of foreign migrants in informal settlements, including their legal status, lack of access to social safety nets, and limited resources. The study demonstrates the crucial role of social networks and informal associations in supporting food security among these populations. Bans on associational life disrupted these networks, exacerbating the challenges faced by foreign migrants in informal settlements during the pandemic. Overall, the paper highlights the importance of considering the impacts of the COVID-19 pandemic on vulnerable populations such as foreign migrants in informal settlements, in efforts to address food insecurity. It also highlights the need for more research and policy attention to the unique challenges these populations face during the pandemic and beyond. Ultimately, the findings of this study can inform policies aimed at improving the food security and well-being of foreign migrants in informal settlements and contribute to broader discussions on the intersection of the COVID-19 pandemic, food security, and migration.

The findings of this study contribute significantly to the broader conversation on the consequences of bans on associational life and belonging among migrants in informal settlements. The restriction of these vital community-building activities amplifies the vulnerabilities faced by migrants, leading to a cascade of challenges that extend beyond immediate concerns to impact food security, mental health, and overall well-being. The paper emphasises the pivotal role that associational life plays in the lives of migrants, providing a sense of community, shared identity, and mutual support.

Crucially, this paper reveals the need for context-specific policies that recognise the importance of communal ties and shared experiences among migrants. Banning associational life inadvertently disrupts not only the social fabric of these communities but also their ability to access crucial resources and support networks, thus exacerbating existing inequalities.

Understanding the impacts of bans on associational life and belonging among migrants necessitates a thoughtful approach to policy and practice. Policymakers and practitioners must consider the interconnectedness of social, economic, and psychological dimensions in the lives of migrants. Investments in programmes that facilitate cultural events and community engagement become not only avenues for integration but also essential components in mitigating the negative consequences of imposed restrictions. Thus, the study calls for a re-evaluation of policies that may unintentionally hinder the resilience of migrant communities. Fostering an inclusive environment that encourages associational life and a sense of belonging is crucial for the well-being and food security of migrants. By recognising the impacts of bans on these fundamental aspects of community life, policymakers can work towards creating environments that empower migrants in informal settlements, promoting not only their survival during crises but also their long-term integration and thriving.

The paper suggests that future research should examine how migrants restructure their associational life or negotiate the bans on it that undermine their livelihoods and usual ways of belonging. Preliminary findings from Lydiate, presented for example in Bhanye (2023a), "Nimble Sociality and Belonging": an Ethnography of Migrants' Responses to Bans on Associational Life During the COVID-19 Pandemic, revealed that WhatsApp groups became significant, eventually serving as a new form of associational life among the migrants. Lydiatians created a vibrant virtual WhatsApp group, 'Lydiate Community Updates' for easier communication, job updates and support for each other during the COVID-19 pandemic. Lydiatians also relocated their religious places of worship from public or open spaces to more secretive places after bans on associational life, while others turned to drinking their illicit brew within the perimeters of their community, out of sight of monitoring authorities. Lydiatians also made use of the 'architecture of invisibility', a community barricade, to hide group activities in the community from the public and continue their everyday associational lives even during Covid-19. In short, it seems that migrants find 'informal or nimble ways of belonging' to continue with their lives even after bans on associational life in the community and beyond.

Based on the findings of this study, the following recommendations (Table 1) can address the impacts of the COVID-19 pandemic and bans on associational life on the food security of migrants living in informal settlements.

Table 1: Recommendations to address the impacts of the COVID-19 pandemic and bans on associational life on the food security of migrants living in informal settlements

Recommendation	Explanation
Provide targeted financial support	Governments and aid agencies should provide targeted financial support to vulnerable populations, including foreign migrants living in informal settlements, to help them cope with the economic impacts of the pandemic. This support could include cash transfers, food vouchers, or other forms of social protection.
Improve access to basic services	Efforts should be made to improve access to basic services such as healthcare and sanitation, which are critical to promoting food security and reducing the vulnerability of these populations. This could include providing free or subsidised healthcare services to vulnerable populations, improving access to clean water and sanitation facilities, and promoting hygiene practices to prevent the spread of COVID-19.
Support informal food markets and networks	Informal food markets and networks play a crucial role in supporting the food security of foreign migrants living in informal settlements. Governments and aid agencies should support these networks by providing infrastructure, training, and technical assistance to enhance their efficiency and effectiveness. This could include providing support for cold storage facilities, transport infrastructure, and training on food safety and hygiene.
Develop community-based initiatives	Community-based initiatives can play a critical role in promoting food security and resilience among foreign migrants living in informal settlements. Governments and aid agencies should support the development of community-based initiatives, such as community gardens and urban agriculture, to promote food production and distribution. This could involve providing training, technical assistance, and other forms of support to community-based organisations and groups.

Strengthen social protection systems	Governments and aid agencies should strengthen social protection systems to provide a safety net for vulnerable populations, including foreign migrants living in informal settlements. This could involve expanding social protection programmes such as cash transfers, food assistance, and other forms of support to reach more vulnerable populations.

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From Farmer to Consumer: Exploring Proximity and Direct Selling Initiatives of Organic Farmers of Delhi NCR During COVID-19

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Abstract

The pandemic shed light on the already glaring shortcomings of our elongated conventional food system. Some seek to address the complexity and distance introduced into the food system between production and consumption by developing and participating in alternative food networks. Among them are organic farmers exploring direct selling initiatives to reduce the degree of separation from the end consumer, especially urban consumers. This paper is focused on this section of organic food producers located in Delhi NCR (National Capital Region) in India who are actively seeking participation in short food supply chains. Drawing on data collected through interviews with organic food producers, the paper highlights how they were affected by the COVID-19 pandemic. It shows the advantages and challenges of relying on direct selling against the backdrop of a pandemic and government-mandated social distancing. The discussion is situated at the intersection of literature on alternative food networks (AFNs), short food supply chains (SFSCs), and proximity. The paper examines the critical role of geographical and relational proximity within short food supply chains of value-laden AFN products as the pandemic revealed its own set of challenges to the agri-food supply chain.

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Introduction

Shocks and stressors like COVID-19 have the potential to completely disrupt and introduce insecurities into the food systems of low- and middle-income countries such as India (Bene, 2020). COVID-19 introduced a complex crisis in the food system which impacted the populace asymmetrically and on multiple fronts (see Clapp and Moseley, 2020). The burden on the agri-food supply chain was especially concerning as one of the defining characteristics of the conventional food system – the distance between the sites of production and those of consumption – became its most significant liability.

As agrifood value chains become longer, with an increasing number of intermediaries, they become highly susceptible to disruptions such as pandemics (Minten et al., 2023). The smooth functioning of complex logistics is at the centre of its optimal performance. Low- and middle-income countries like India are in a "transitional" phase of the agri-food supply chain where traditional and modern retail co-exist, and the distance between production and consumption is increasing (McMullough, Pingali & Stamoulis, 2008; Reardon et al., 2020). The abruptness of the first lockdown in India had wide-ranging effects on the agri-food system. The initial phase of lockdown restrictions – the first 21 days (25th March to 15th April 2020) – affected the Indian agri-food supply chain due to movement restrictions. They were affected first by mobility restrictions, followed by declining demand due to the economic downturn, and lastly, price inflation (Minten et al., 2023). Government assessment and interventions at the central and state levels regarding the agriculture and allied sectors throughout the pandemic prevented a complete collapse of the food system. However, its rippling effect was felt over a sustained period. The sector's resilience was amplified due to the nation's significant reliance on regional and local food supply chains to satisfy food demand.

As the mainstream food supply chain struggled under new (and old) challenges, the potential of alternative food networks such as short food-supply chains (SFSCs) and local food systems came to the foreground (Yousefian et al., 2021). They presented possibilities to manoeuvre through the hurdles by providing alternative pathways of resilience and security (Béné, 2020; Blay-Palmer et al., 2020; Thilmany et al., 2020). The flexibility afforded within the space of these diverse (AFNs), with their shorter supply chains and fewer variables and operations, renders their potential an essential space of exploration in the backdrop of the pandemic.

The organic food supply chain is one such space for the realisation of alterity, despite growing concerns regarding its conventionalisation and mainstreaming (Beus & Dunlap, 1990; Buck et al., 1997; Guthman, 2004; Goodman, DuPuis & Goodman, 2012). Demand for organic food in the domestic market in India has witnessed steady growth in the recent past, especially among urban dwellers (Osswald and Menon, 2013; Erler, Keck and Dittrich, 2020; Erler and Dittrich, 2020). According to Osswald and Menon (2013), the organic food supply chain in India is characterised by shorter networks compared to the conventional food supply chain, which can provide critical insights into the operations and viability of 'stronger' alternative food networks (Watts, Ilbery and Maye, 2005).[1]

In India, these newly emergent AFNs are connected to specific socio-cultural, economic and policy contexts that have given them their particular form. Their emergence has been a result of the active engagement of the producers to exercise their agency and seek a way outside of the conventional, despite myriad challenges. Without much governmental support, producers are navigating their way to building new food relations by mobilising proximity. During the pandemic, they had to navigate the challenges posed to SFSCs based on direct and distanced relations by dynamically adapting, innovating and, most importantly, being flexible in their localised responses to it.

This paper is an attempt to highlight the experience of organic food producers from the urban-rural planning

[1] According to Watts, Ilbery and Maye (2005), 'weaker' AFNs represent initiatives that rely specifically on the product's alternative quality (e.g. organic products), while 'stronger' AFNs focus on the network within which the products circulate, not simply the product qualities (e.g. organic direct-selling networks).

region of Delhi NCR, intending to draw the oft-neglected Global South, and particularly India, into AFN literature (Abrahams, 2006; Freidberg and Goldstein, 2011; Moustier, 2017; Bopp; 2020; Erler and Dittrich, 2020). The first section outlines the impact of the pandemic on the Indian agri-food supply chain. The next section sets out the theoretical underpinnings of the paper with a specific focus on the concepts of alternative food networks (AFNs), short food supply chains (SFSCs) and proximity. The third section outlines the methodology adopted for the research and gives a brief description of the field. The fourth and fifth sections draw on fieldwork data to explain why organic farmers participate in SFSCs and how they were affected by the pandemic. The next section discusses the role, for the respondents, of geographical and relational proximity in organic direct-selling initiatives in the context of COVID-19. The concluding section highlights the adaptive capacity of actors within AFNs as alternatives to the mainstream during moments of systemic shocks, and the role of proximity in both agri-food chains.

Covid-19 and the Conventional Agri-Food Supply Chain in India

The Indian subcontinent went into one of the world's most stringent nationwide lockdowns on 25th March 2020 for a 21-day period (later extended in four phases till 31st May 2020) (PIB, 2020).[2] The initial phase of the lockdown led to adverse impacts across sectors, including the agricultural sector. In 2019-2020, the agricultural and allied sector's percentage share in the Gross Value Added (GVA) of India, a largely agrarian country, stood at 17.8% (PIB, 2021), a declining yet substantial figure. Agriculture moreover employs the lion's share of the nation's total workforce: 54.6% (Census 2011).

The potential risk to the sector during the lockdown was amplified as its implementation coincided with the harvest of the rabi (winter) crop: wheat, the second most important crop grown in the country. In 2019-2020, 313.57 lakh hectares were under wheat production (GoI, 2023). Chickpeas, the main pulse crop, and mustard, the second largest oilseed crop, are also grown during the rabi season, along with other vegetables and fruits. Recognising the importance of agriculture and allied sectors in the functioning of the economy, the Government of India announced the exemption of farming operations and support services of the agricultural sector from lockdown regulations on 27th March 2020 (Narayanan & Saha, 2020). Further relaxations for the sector were announced over time as supply chain and operational issues came to the fore.[3]

Several challenges plagued the agri-food supply chain in India during the initial phase.[4] Centralised and state government interventions offered a safety net to the agri-food sector throughout the pandemic which held the supply chains together, especially after the initial upheaval (Potham et al., 2020). However, disruptions were largely attributed to the lack of coordination between the central and state government administrations, and the lack of percolation of information across the administrative chain (Narayanan & Saha, 2020). The disruption of the agri-food supply chain could be felt across the food system as domestic supply chains are responsible for about 80% (in terms of value) of the food consumed in the country (Reardon et al., 2020). Furthermore, 92% of food is purchased, making the population heavily reliant on a well-functioning food chain (ibid).

The agri-food supply chains in India are long rural-urban chains that depend predominantly on perishable food supply chains (McCullough et al., 2008). Several marketing channels and platforms have been made available to primary producers through reforms in agricultural marketing policies (Pingali, 2006; Reardon & Minten, 2011; Pingali et al., 2019). Direct purchasing, contract farming and establishment of private wholesale yards have been provisioned under government regulations (Singh, 2018). However, the public wholesale agricultural markets or mandis, established under the Agricultural Produce Market Committee (APMC) Act,[5]

[2] Based on the 'Covid-19 Stringency Index' of the Oxford Covid-19 Government Response Tracker.

[3] See Narayanan and Saha (2020) for a list of important notifications on the agricultural and allied sectors from the Government of India.

[4] See Abhishek et al., 2020; NAAS, 2020; Narayanan & Saha, 2020; Rawal, et al., 2020; Reardon et al. 2020; Priyadarshini & Abhilash, 2021; Jaacks et al., 2021; Lowe, Nadhanael & Roth, 2021.

[5] Agricultural marketing is a State Subject which means that the APMC Model Act, 2003 can be adopted, modified, and even re-

continue to play a significant role in agricultural marketing, and food producers in India continue to channel their produce through them (Minten et al., 2009; Reardon & Minten, 2011; Pingali et al., 2019).

In the initial stages, the closure of mandis led to a reliance on local village markets where price discovery and competitive buying were improbable (Abhishek et al., 2020). Even though the mandis were made exempt from the lockdown restrictions on 27th March 2020, they did not resume normal functioning for a period after that (Rawal et al., 2020; Singh, 2020). There was a visible deceleration and decline in arrivals of the most important non-perishable rabi crops (wheat, mustard and chickpea) in the mandis during the initial 21 days of the lockdown as most functional markets were dealing predominantly in perishable agricultural commodities (Rawal & Verma, 2020). There was an uptake in the volume of arrivals after the initial phase with some lingering effects (Rawal & Verma, 2020; Lowe, Nadhanael & Roth, 2021). Wholesale prices initially rose by 8% but subsequently resumed a downward trend (Lowe, Nadhanael & Roth, 2021).

Mahajan and Tomar (2020) also observe that the further the production zone from the retail centres (cities) or mandis, the higher the likelihood of the arrival of agricultural commodities declining during the pandemic. The mandis in India are dependent on the physical presence of actors (producers, wholesalers, retailers, commission agents) and are largely cash-based (Varshney et al., 2021). The imposition of stringent rules and regulations to abide by social distancing norms further complicated the arrival and selling of produce in the mandis (Rawal et al., 2020). The infrastructural inadequacies of the mandis made them a breeding ground for the virus transmission, which led to several mandi closures (ibid).

While the impact of COVID-19 on the mainstream food supply chain has been explored at length in the case of India, alternative food networks like direct-to-consumer food supply chains have been largely ignored (Yousefian, Devy, Geetha and Dittrich, 2021). Today, organic farming and food systems are witnessing a renewed push from civil society, the government, and farmers in India due to the deleterious impact of the conventional food system (Narayanan, 2005; Alvares, 2014; Khurana and Kumar, 2020). Organic food producers participate in both conventional food supply chains and alternative food networks, moving fluidly between them. The next section outlines the key concepts of alternative food networks, short food supply chains, and proximity, to anchor the fieldwork within the existing literature.

Theoretical Review

Alternative Food Networks (AFNs)

Agri-food scholars have increasingly taken note of the emerging alternative initiatives within the food system that are reconstructing the narrative of a homogenised and singularly globalised conventional agri-food system (Murdoch, Marsden and Banks, 2000). The conventional food system is largely characterised as one based on intensive monocultural agriculture with heavy reliance on chemical inputs, emphasis on quantity over quality, producing generic and standardised products, and a long food supply chain that disconnects producers and consumers (Beus and Dunlap, 1990; Murdoch et al., 2000; Kneafsey et al., 2008; Maye and Kirwan, 2010). Alternatives are constructed as oppositional to one or more of these characteristics (Sonnino and Marsden, 2006; Maye and Kirwan, 2010).

The theoretical framework of 'alternative food networks' has shed light on attempts to reconfigure relationships between the actors at the two ends of the food supply chain: the producers, and the consumers

jected by individual states (see Rao, Sutradhar and Reardon, 2017 for state-wise adoption of agricultural marketing reforms till 2016). The states and union territories of Kerala, Bihar, Manipur, Andaman and Nicobar, Daman and Diu, and Dadra and Nagar Haveli have not adopted or scrapped the APMC Act. The Central Government, through the Model Agriculture Produce and Livestock Marketing (Promotion and Facilitation) Act, 2017 (APML Act, 2017), has further proposed reforms by addressing the monopoly in agriculture marketing, and offering alternative marketing channels to producers for better price realisation.

(Venn et al., 2006). The alterity of these networks lies in their potential to 're-socialise' and 're-spatialise' food (Renting, Marsden and Banks, 2003) by embedding it within natural, spatial and social contexts (Murdoch et al., 2000). Such specialised and/or dedicated products (ibid) are value-laden and distinguishable from their mainstream counterparts (Goodman and Goodman, 2009). They include organic, Fair Trade, artisanal, regional, and qualitatively differentiated produce that represents a 'quality turn' in the food system (Goodman, 2004; Ilbery and Maye, 2005).

AFNs thus combine the dual characteristic of "dis-embedding from the conventional food industry, as much as they are as a process of re-embedding food into renewed social and economic relations" (Dubois, 2018: 2). This vast body of existing and emerging literature, overwhelmingly studied in the context of the Global North, consistently highlights the 'quality' of food and relations around it (Murdoch et al., 2000; Whatmore, Stassart and Renting 2003; Abrahams, 2006; Venn et al., 2006; Kneafsey et al., 2008; Goodman and Goodman, 2009; Friedberg and Goldstein, 2011; Goodman, DuPuis and Goodman, 2012; Kneafsey et al., 2013; Dubois, 2018).

Abrahams (2006) contends that the AFNs in the Global North and South, while both opposing the conventional food supply systems, are fundamentally different. The development and form of AFNs depend largely on the institutional, regional, cultural, and political context of their emergence (Abrahams, 2006; Friedberg and Goldstein, 2011; Bopp, 2020). AFNs in the South emerged as a "grassroots development imperative which includes survivalist enterprise, accessible food networks for the urban poor and cultural food networks for diverse communities." (Abrahams, 2006: 23). They represent a continuation of practices that have co-existed alongside the industrial turn of the agri-food system and modernising supply chains due to rapid urbanisation, dietary transformation and diversification, economic liberalisation and the entrance of foreign direct investment (Pingali, 2006; Bopp, 2020).

The Indian subcontinent, with its continuance of traditional agriculture and indigenous knowledge systems, spirituality, smallholder structure, and socio-culturally context-specific notions of sustainability, has been argued to provide a strong foundation for the development of AFNs (Bopp, 2020; Erler and Dittrich, 2020). The largely farmer- and civil society-led organic farming movement in India (Alvares, 2014) has sought to find a way out of the exploitative agri-food supply chain that appropriates the value of food away from the farmers to intermediaries and agribusinesses. However, the entrance of intermediaries in the form of NGOs and organisations can disrupt the potential of AFNs to assist producers in improving their livelihood, due to their own vested interests, objectives, and belief systems regarding their functioning (Freidberg and Goldstein, 2011; Erler and Dittrich, 2020). Erler and Dittrich's (2020) study in India reflected how "unreflexive and defensive traditionalism" within these networks can impede the cause of livelihood improvement for farmers. Therefore, farmers are developing their own direct food supply chains that cater directly to the end consumer (Osswald and Menon, 2013).

Establishing direct connections between producers and consumers has been viewed as a means to reform the agri-food supply chains in India and other developing countries (Chand, 2012; Moustier and Renting, 2015). The reliance of producers and consumers on single points of approach to the food supply chain increases their vulnerability to disruptions and shocks such as the pandemic (Yousefian, Devy, Geetha, and Dittrich, 2021). The development of new short food-supply chains has emerged as an alternative for producers and consumers in the city regions of developing countries (Moustier and Renting, 2015), often facilitated through institutional innovations as in the case of India (Chebrolu and Dutta, 2021). Direct marketing initiatives are one such form of SFSC that increased marginally during the pandemic as Resident Welfare Associations (RWAs), farmer producer organisations (FPOs), NGOs and government agencies facilitated connections between producers and consumers in Bengaluru, India (Yousefian et al., 2021).

Short Food Supply Chains (SFSCs)

The narrower concept of the short food supply chain (SFSC) has made critical contributions to developing a more focused understanding of AFNs and the farm-to-fork journey of AFN products (Marsden et al., 2000; Renting et al., 2003). According to Maye and Kirwan (2010: 3), "The key characteristic of SFSCs is that foods reach the final consumer having been transmitted through a supply chain 'embedded' with value-laden information concerning the mode of production, provenance and distinctive quality assets of the product." At their core, SFSCs seek to reorganise the food chain with reduced or, ideally, no intermediaries, and thus to build 'thick' and 'reconnected' producer-consumer relationships (Whatmore et al., 2003; Renting et al., 2003; Kneafsey et al, 2013). The relationship between producer and consumer, rather than the product, is highlighted as the basis of 'alterity'.

Marsden, Banks and Bristow (2000) have developed a three-fold typology of SFSCs to understand their contribution to rural development. They are: a) face-to-face SFSCs (the producer and consumer have direct interaction due to direct selling, including selling mediated by the Internet); b) spatially proximate SFSCs (products are produced and retailed within a particular region of production and the consumers are aware of its 'local' quality); c) spatially extended SFSCs (consumers are located outside the region of production but the product itself is value-laden with information regarding the place and people producing it).

In the context of developing countries, SFSCs are not simply a leftover from the past characterised by deficient infrastructure and catering to urban areas with low population density (Moustier, 2017). They are new and creative channels emerging through the action of consumers, producers, non-governmental organisations and governments, especially in the context of perishable and/or quality commodities like organics (Moustier and Renting, 2015; Moustier, 2017). They are developing as a consequence of the increasing health concerns of consumers and spending capacity (Osswald and Menon, 2013; Moustier, 2017). However, distinguishing between the SFSCs of the Global North and South, Freidberg and Goldstein (2011) note that geographical distance is often considered less important than relational proximity in the former regions due to technological interventions. However, for some producers and in the context of developing regions, spatial distance plays a critical role by re-prioritising the idea of geographical proximity, although always in combination with relational proximity (Moustier and Renting, 2015).

Proximity

Short food-supply chains are ultimately reconfiguring the proximity between producers and consumers (Aubry and Kebir, 2013). In the context of developing countries, proximity holds the following advantages for market organisation: shortening marketing chains, lowering price differentials, indicating information on quality and control, and assuring freshness (Moustier and Renting, 2015). Torre and Rallet (2005) identify two types of proximity that have been adopted in later works on agri-food supply chains (Kebir & Torre, 2012; Aubry and Kebir, 2013; Eriksen, 2013; Dubois, 2018). Geographical proximity is defined as the objective distance in geographical space between two units. This objective measure has a subjective component wherein individual judgement and perception of closeness and farness are critical in understanding geographical proximity. On the other hand, organised proximity refers to relational proximity facilitated by interactions within any "structured unit of relations" or organisation (Torre and Rallet, 2005: 58). Both are interrelated as geographical distance and relational closeness reinforce each other.

Similarly, Eriksen (2013) highlights three domains of proximity in defining local food. Geographical proximity as a domain of proximity refers to the specific spatial or geographical locality, distance and/or radius within which food is produced, distributed, retailed, and consumed. The concept of relational proximity pertains to the relations (market) between actors who are reconnected through alternative production and distribution practices, such as direct selling AFNs. Lastly, values of proximity refer to the values (positive, symbolic, or qualitative) different actors attach to local food. Eriksen's taxonomical contribution can be extended to

understanding direct-to-consumer organic food networks as it accounts for the notions of geographic distance, relational closeness, and quality dimension of organic food.

Dubois (2018) likewise explores the concept of proximity through the dynamics of organised proximities mobilised within AFNs. Dubois outlines the following modes of organised proximities: temporary geographical proximity (occasions of direct producer-consumer interaction, such as during farmers' markets or on-farm sales); social proximity (interpersonal ties between producers and consumers that are mobilised through direct interaction or mediated through a trusted third party); cognitive proximity (convergence of producer-consumer knowledge bases regarding food quality and origin that are transmitted through interpersonal relations in the form of "tacit, 'sticky' knowledge" (ibid: 6)); organisational proximity (the multiplicity of networks and practices producers leverage to transmit information, money and foodstuff to the end-consumer); and institutional proximity (co-creation and transmission of values, norms and institutions between producers and consumers).

Aubry and Kebir (2013) developed a typology of SFSCs based on the bearing of geographical and organised proximity on producer-consumer relations. The first type consists of supply chains with loose producer-consumer relations that resemble the conventional long supply chains. Products are traceable but the relationship is mediated through labels and other confidence markers. This type is based on weak geographical and organised proximity and is therefore not considered an SFSC. The second category of SFSCs comprises supply chains based on indirect relations stemming from strong geographical proximity but weak organised proximity. Product quality is tied to a common geographical territory and the relationship between the producer and consumer is mediated through the presence of one or more intermediaries. Thirdly, there are those SFSCs that are characterised by distanced relations (eg. direct online selling, direct mail order selling). Organised proximity forms the basis of these supply chains that nurture proximity in the form of shared values and confidence rather than localisation of producer-consumer relations. Lastly, supply chains based on direct relations are SFSCs in the true sense of the term as they combine geographical proximity with organised proximity to 'reconnect' producers and consumers (Kneafsey et al., 2008). Producers and consumers can meet each other at the point of purchase (eg. farmers' market, on-farm selling), affording them 'moments of connection' (Venn et al., 2006) or 'temporary geographical proximity' (Dubois, 2018) at farmers' markets, farm gates, farm shops, fairs, and other spaces of co-presence.

This paper begins by drawing on the typology of SFSCs outlined in the work of Renting et al. (2003) and Aubry and Kebir (2013). It highlights the importance of face-to-face SFSCs based on direct or distanced relations for organic food producers of Delhi NCR. The paper furthermore draws on the concept of proximity to explore the role of geographical and relational proximity in SFSCs based on direct selling during the global pandemic. Geographical proximity refers to the geographical distance between the producer and the consumer. On the other hand, relational proximity refers to the direct (market) relationship between producers and consumers that fosters a reconnection based on certain shared values, beliefs, knowledge and their transmission.

Methodology

This study focuses on organic food producers in the Delhi National Capital Region (NCR) who sell part or all of their organic produce directly to consumers. The absence of intermediaries between producers and consumers is central to the idea of direct selling initiatives. As such, they fall within the category of short food supply chains that are face-to-face or proximate (Marsden et al., 2000). In India, direct selling of organic food includes channels like farmers' markets, farm shops, farm (or home) collection, mobile sales points, community-supported agriculture (CSA), farm rental schemes, online sales, and home delivery (Osswald and Menon, 2013; Singh, 2009; observations from the field).

The perspective of the producers is given primacy as they make a concerted effort to tap into alternative

supply chains that involve additional labour (such as processing, packaging, marketing, and relationship building) beyond their role in growing food. It demonstrates their 'capacity to act' (Goodman and DuPuis, 2002) by exercising 'choice' to sell their products directly and recapture value that is otherwise lost to intermediaries. However, their ability to participate in specific supply chains is affected by factors and events beyond their control, such as COVID-19 and governmental regulations around it. How they navigate and adapt to these external factors is at the core of the paper and is explored through the conceptual lens of proximity in SFSCs. The paper draws on interviews conducted with 26 organic food producers of Delhi NCR who are involved in direct selling to the end consumer. The respondents are part of a broader doctoral research on organic food networks of Delhi NCR conducted between April 2022 and October 2023. My doctoral fieldwork started after India had emerged from three waves of the pandemic but with the memories and images of its effects still fresh in the public's mind. As advisories on social distancing and travel restrictions waned and the vaccination drive gained ground, I ventured into the 'fields' of organic food producers for my 'field'work. These instances of temporary geographical proximity (Dubois, 2018) were pivotal to understanding the role of proximity in building AFNs. I experienced the field not only as a researcher but also as a consumer, as my exposure to the subject was intricately tied to eating in the field.

Initially, respondents were approached during visits to organic farmers' markets, trade fairs, and exhibitions held in Delhi NCR. These gatherings were instrumental in introducing me to farmers and key persons involved in the organic farming sector. They, in turn, provided introductions and references to other organic food producers in the region within their social and professional networks. In-person and telephonic interviews were conducted between March and October 2022. The interviews were recorded with the consent of the respondents and transcribed for analysis.

The producers were asked questions specific to their experience of direct-selling organic food during the pandemic. The questions focused on the first phase of the lockdown to understand the impact of the unanticipated nature and resultant initial disruption to the conventional agri-food supply chains. A central criterion for the selection of respondents was that they had to be involved in organic farming before the beginning of the pandemic. This enabled them to specifically gauge the impact of the pandemic on direct-to-consumer selling supply chains in comparison to pre-Covid conditions.

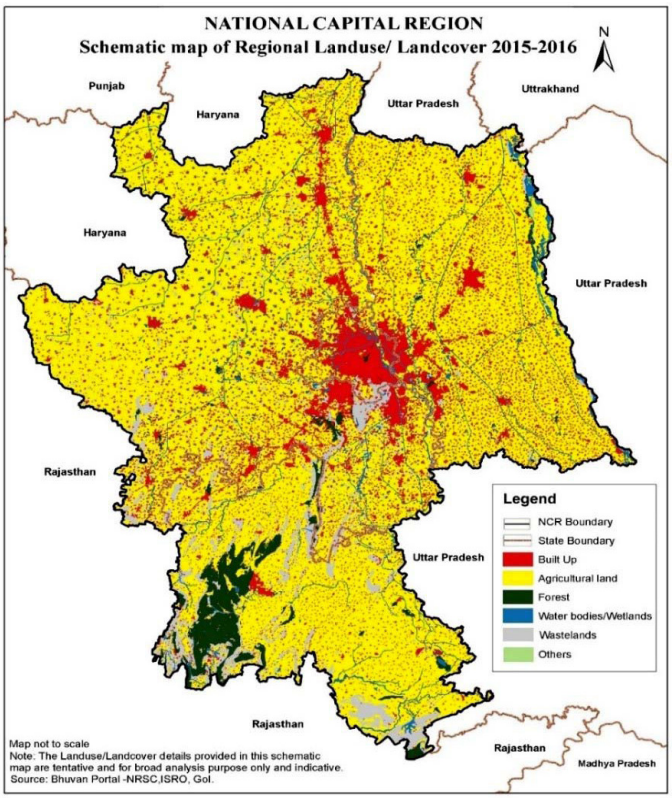
Some respondents in this study practice both conventional and organic farming and participate in both conventional and alternative supply chains. A vast majority of the respondents sell at least some of their produce in the agricultural wholesale markets or mandis, including their organic produce, and even sell them to intermediaries such as organic retailers or producer-aggregators. They participate in the conventional supply chains such as the mandis when they have excess produce, for perishables (as they have a short shelf-life), or for specific crops like rice which do not find a ready market in the region through direct selling. Similar instances of producers operating within both long food supply chains and short food supply chains simultaneously have been observed in multiple studies (Ilbery and Maye, 2005; Aubry and Kebir, 2013).

The location of the study – Delhi NCR – also played a crucial role in understanding the impact of the pandemic on the food system. Delhi NCR is an urban-rural, inter-state planning and development region constituted under the National Capital Region Planning Board Act, of 1985 (NCRPB, 2021). The region covers an area of 55,083 sq. km. (as of 2018). It spreads across NCT-Delhi and select districts from the three adjoining states of Haryana (14 districts), Uttar Pradesh (8 districts), and Rajasthan (2 districts). The region comprises 4 sub-regions, namely: NCT-Delhi, Haryana, Uttar Pradesh, and Rajasthan (refer to Fig. 1). According to the Census of India 2011, Delhi NCR supports a population of 58,157,286 and the region's contribution to the national GDP is about 8%, making it the highest contributor (Census, 2011).

Figure 1: Map of Delhi National Capital Region (NCR) and its Constituent Sub-Regions

Source: Draft Regional Plan 2041 NCR, NCRPB Report, 2021

Figure 2: Schematic Map of Delhi National Capital Region's (NCR) Landuse/Landcover 2015-16



Source: Draft Regional Plan 2041 NCR, NCRPB Report, 2021

The total agricultural land use area in this region is 81.66% as of 2015-2016 (NCRPB, 2021, see Fig. 2). For this study, only the districts within Haryana and Uttar Pradesh under Delhi NCR were considered. The share of each sub-region under consideration in the total agricultural land use in Delhi NCR is (NCRPB, 2021):

- Haryana sub-region: 47.7%
- Uttar Pradesh sub-region: 22.5%

The sub-regions of Haryana and western Uttar Pradesh were at the forefront of adopting and implementing Green Revolution technologies and have experienced agricultural-led growth since the 1960s. Farming here is characterised by an intensive monocropping system with heavy reliance on a well-developed irrigation system, chemical inputs, and HYV seeds. The agricultural landscape is dominated by two food grain crops: rice (kharif crop) and wheat (rabi crop) (NCRPB, 2021). Other crops grown in this region include sugarcane, maize, bajra (pearl millets), jowar (sorghum), mustard, pulses, barley, and varieties of fruits and vegetables. The sub-regions have a network of mandis that cater to the large farming communities of the two states. It is also important to note here that Haryana and Uttar Pradesh emerged in third and fourth position in terms of wheat procurement by the government during the lockdown period (PIB, 2021). Therefore, procurement through government agencies is also an important marketing channel for producers in this region, particularly for wheat.

The two sub-regions have been identified as important sites for the potential adoption of organic food production practices due to their pre-existing heavy reliance on chemical inputs (Mahale, 2002 cited in Singh, 2009). However, neither of the two state governments has adopted an official state organic farming policy (as of 2023). There has nonetheless been the promotion of organic and natural farming in the recent past ("Haryana to promote organic farming in a big way", 2022; "Aim to develop Uttar Pradesh as an 'Organic State': CM Yogi", 2022). However, the move towards organic farming in India has been primarily led by farmers

and civil society organisations without much governmental support (Alvares, 2014), as in the case of the respondents of this study.

The respondents are consciously adopting an 'alternative' path to agriculture and marketing that is still evolving.[6] The paper broadly uses the definition of organic farming as chemical-free farming, due to the diversity of models, principles, and practices adopted by practitioners.[7] A majority of the respondents primarily cultivate non-perishable crops that are conventionally grown in the region: wheat, rice, mustard, and sugarcane. Therefore, during the time of the first lockdown, they were in the process of harvesting or marketing their wheat crop. A significant number also grow high-value perishable crops like fruits and vegetables for self-consumption, while some grow them for commercial reasons as well. They are partaking in the construction and maintenance of short food-supply chains built on direct and distanced relations with primarily urban consumers of Delhi NCR. The next section explores the organic farmers' participation in short food-supply chains.

The Possibilities of SFSCs: Direct Selling of Organic Food in Delhi NCR

Farming communities in the states of Haryana and Uttar Pradesh rely on its robust mandis or government wholesale agricultural markets to sell their produce even though they are plagued by many operational issues (see, Chand, 2012; Jan and Harriss-White, 2012; Cohen, 2013; Singh, 2018). For organic food producers of this region, however, mandis are not a lucrative option. The farmers are neither paid a premium for their labour-intensive and sustainable agricultural practices, nor compensated for the loss in yield. There is an absence of dedicated APMC yards for organic produce or even separate organic selling points in existing mandis. Consequently, many farmers face disappointment in terms of remuneration. One of the farmers commented:

> *When we go to the mandi, the value of a donkey and a horse is the same. Now in the mandis donkeys are getting sold and we are going to sell horses but get the same price, then we'll also raise donkeys only. (Interview with a farmer from Sonipat, Haryana)*

Seeking 'fair' compensation for labour and ecosystem services is a crucial catalyst for organic farmers in the region to sell directly to the end consumer. This end-consumer generally has the capacity to pay a premium price for the products and is primarily located in the high-income earning urban centres of Delhi, Gurgaon, and Noida within Delhi NCR, which has a significant middle class. This is corroborated by findings from other studies on organic food and AFN initiatives in India (Osswald and Menon, 2013; Erler and Dittrich, 2020; Yousefian et al., 2021). Partaking in face-to-face short food-supply chains based on distanced and direct relations (Marsden et al., 2000; Aubry and Kebir, 2013) becomes a reality due to improved infrastructure, an urban consumer population seeking out healthy and/or safe food supported by the rural-urban planning region and percolation of internet connectivity.

Geographical proximity to potential customers provides them the platform to seek better remunerative avenues and develop relational proximity. By eliminating middlemen from the equation, the farmers are remunerated better, retain a higher value of the product and are also able to offer their value-added produce to consumers at lower prices (Hinrichs, 2000; Chand, 2012; Kneafsey et al, 2013; Dubois, 2018). A farmer explained:

[6] Here I differentiate between the respondents of this study, and farmers who are 'organic by default.' The latter are farmers who traditionally practice non-chemical farming in hilly, tribal and rain-fed regions of the subcontinent and are not certified organic.
[7] It is important to note here that some respondents also identify themselves as practising 'prakritik' or natural farming rather than organic farming. Natural farming is seen as going one step further than organic farming in terms of sustainability. The basic distinction they make between the two is that while organic farming still relies on the market for inputs, such as bio-inputs, in natural farming, farmers use materials (cow dung, cow urine, curd, gram flour, etc.) available with them or locally to formulate their own inputs and make them on-farm. For other respondents, the difference in nomenclature is not a cause of concern and they believe it can be confusing and divisive. For the purpose of the study, those farmers who are or have been certified under organic certification systems recognised by the Government of India or who consider themselves organic farmers have been included.

> *When the customer is buying directly from the farmer, then it benefits both parties. The farmer can sell it for two rupees more, and the person who is buying can save two rupees compared to the market. Everyone benefits. (Interview with a farmer from Karnal, Haryana)*

Selling directly from the farm gate also eliminates the logistical costs involved with transportation. Moreover, delivery of produce to the end consumers may lead to losses if the economies of scale are unfavourable. Some farmers choose to overlook this since they witness the relational or non-monetary benefits of engaging in direct selling, owing to the social embeddedness of these market relations (Hinrichs, 2000; Kneafsey et al., 2013). Direct-to-consumer models promote the potential development of trust-based relationships with end-consumers guaranteeing them fair prices and a ready market based on relational proximity. This is evident in the narrative of a farmer:

> *I like selling to my direct customers. One reason is they at least know us by face. We give them first priority. They know us by face, they have bought organic from us and feel that they have bought good food, safe food from us. When their requirements are met, then we sell them to others. (Interview with a farmer from Charkhi Dadri, Haryana)*

Relational proximity helps build more trust-based relations due to increased interactions (both online and offline), knowledge sharing, dissemination of 'quality' aspects of products, places, and practices, and co-creation of values and beliefs through interactions. Nonetheless, there is consensus that direct marketing can be challenging, especially in the initial years. Limited access to direct markets, low retention rates, increased reliance on e-commerce channels by consumers, limitations of time, fluctuating or low demand for specific produce or products, a finite food basket, shelf-life of products, logistical issues, and systemic shocks like the pandemic and natural calamities. This has led organic farmers in the region to simultaneously straddle both the conventional and the short food-supply chains. However, the producers' first inclination is to sell their produce directly to consumers rather than to intermediaries of the conventional marketing channels. The pandemic posed its own challenges to these emergent SFSC structures.

Direct Selling Organic Food in the Time of a Pandemic

When asked about the impact of the lockdown on their everyday life, the organic farmers unanimously responded by saying that it was business as usual in the villages. It was the city-dwellers who were locked indoors and COVID was a predominantly urban disease, according to them. Exempting agricultural activities from the lockdown opened up the villages and movement within them. Yet even as agricultural activities continued, with some emerging issues related to the availability of inputs, machinery and labour, agricultural marketing suffered in the initial stage, including producers engaged in direct selling.

The majority of respondents in this study sell at least a part of their organic produce from their homes or their farms. Customers, who collect their orders (often made by pre-booking in the case of wheat) directly from the producer's farm or home, include extended family or members of the farmer's social circle with whom they have pre-established trust-based relations. During the pandemic, organic producers whose clientele was local and lived in nearby rural and urban areas, and who had moved back to their ancestral (village) homes, could collect their orders without any hindrance. Regular customers were informed about the harvest through social media channels (primarily through the platform WhatsApp) and over the phone, just as they had been in previous seasons.

> *I didn't have any problem in selling. We were able to sell everything…All our customers came and bought it from our house itself. I didn't step outside the four walls of my house with even one kilo of my produce. If a relative requested me to put their order on a bus, I just went and loaded it on the bus. That's it. That's only 5-10 kilos, not more than that. Only for relatives. (Interview with a farmer from Jhajjar, Haryana who had harvested wheat during the first lockdown)*

Geographical proximity was advantageous for the farmer. However, it was coloured by the role of social embeddedness and its impact on the direct-selling producer-consumer relationship. The aspect of relational

proximity based on pre-existing relationships proved important in how the geographical distance was navigated. Nevertheless, the importance of the geographical distance between the sites of production and consumption is clear in the narrative of a farmer in Panipat, Haryana, who had harvested about 250-300 quintals of wheat during the time of the first lockdown. He said:

> *The organic customers I have live far away. I don't have that many customers who live nearby. So all the wheat crop we had harvested at the time was supposed to go outside. But all modes of transportation and everything were shut down. It was very difficult to send it. The harvest just remained in my house throughout the year. Almost 60% of our harvest was wasted.*[8]

This experience was echoed by another producer who used to sell his vegetables at an organic farmers' market held in one of the major cities of Delhi NCR, Gurgaon. The sales of his vegetables ceased completely and instead, he had to sell his crop in the mandi at a time when the rates for vegetables were falling. However, he was able to sell his wheat without any difficulties because he had a regular base of local customers for his grains.

This highlights another factor that determined the experience of organic food producers engaged in direct selling or not: the choice of what crop and variety to cultivate. Those engaged in farming non-perishable crops were relatively less affected than producers growing fresh, perishable produce. However, as noted above, the existence of storage infrastructure and transportation facilities can play a vital role in how much and how long the harvest can be stored. The following observation was made by a farmer in Karnal, Haryana.

> *People in normal small towns buy their entire year's stock at one go [specifically referring to non-perishables like wheat]. They don't have any problems or any worries even if Covid continues for a year…. But the people who have suffered the most damage during Covid have been vegetable farmers and fruit farmers. The most amount of damage. This crop [pointing at his rice fields] can be stocked, it's not a problem. When it ripens, we can harvest, dry, and stock. We can sell it even after a year without any concern. But we can't store vegetables in our house, nor can we store fruits. They will melt and spoil. And there aren't enough cold storage facilities to store all the vegetables. Even if the produce is distributed throughout the village, there will still be waste.*

When there are no travel restrictions, farmers can opt to sell their fresh produce directly to consumers in major cities, albeit considering economies of scale. But COVID-19 presented a particular challenge as it altered what constituted face-to-face and proximate rural-urban food supply chains. Those who relied on the major cities of Delhi NCR, especially for fresh produce, had to rethink their clientele. This can also be attributed to the fact that while the cities were under lockdown it was almost business as usual in the rural areas with people visiting each other's farms and homes.

An organic vegetable producer from Panipat, Haryana sold all his produce to about 25-30 families in Delhi before Covid. However, the geographical distance between the farm and customers made him rethink his strategy and instead focus on developing a clientele close to the farm. He witnessed an increase in his local clientele as he started selling the produce to them at local market rates, and he became known to people in the village through word-of-mouth. Customers could see his production practices directly at the farm and some were curious. However, they were initially hesitant due to the perceived high cost of the produce and because they believed he had an "officer-like attitude" so he would not want to sell the produce to the village residents or cater to their queries regarding the produce and visits to the farm[9]

Producers like him re-evaluated the potential benefits of selling organic food to their immediate neighbours

[8] The wheat harvest was destroyed due to inadequate storage facilities and the introduction of moisture into the crop, that attracted pests. Inadequate storage infrastructure is a problem that plagues the Indian agri-food supply chain even in the absence of systemic shocks like the pandemic. It was aggravated during COVID-19 as more farmers chose to store their produce rather than sell it due to falling prices and logistical issues (Rawal et al., 2020).

[9] The people in his village knew that the farmer sold the vegetables from his farm to people in Delhi. Additionally, the farmer was himself an outsider to the village as he had left his job in the banking sector to start his organic farming endeavour. Building relational proximity was a legitimate concern for him.

despite the decrease in the price premium that they would normally charge people living in the major cities. It was still seen as beneficial to the organic farmer as there was less food waste, higher prices than offered at the mandi, and monetary gain derived from eliminating transport costs. Additionally, one of the principles held by some of the producers was to bring good food to those among whom they lived and with whom they socialised. The rationale for a third farmer was simple.

> *Most of the people didn't have work, or a good earning (during the pandemic). At the time, we also thought, why should we sell it to them at the same rate as we do in Gurgaon and Delhi? What is their fault? We don't have to bear any transportation costs, we don't have to invest any time, and we didn't require extra labour. So, we also thought about it a little and set the price accordingly. (Interview with a farmer from Sonipat, Haryana)*

Another farmer mentioned that as urban areas went into stringent lockdown, people started flocking to the rural areas where they had families or homes. This gave farmers access to newer customers in close geographical proximity, who were aligned to value and seek out fresh, healthy and organic food. The demand for organic products also witnessed an uptake during this period as people turned to this sector for immunity-boosting products and healthy food options like organic products (USDA, 2021). People started to seek out organic producers near them for quality produce like moringa powder, turmeric, and so on to fight the virus. Consequently, some farmers adapted to these newly emerging demands they received through feedback, owing to their relational proximity with old and new consumers.

Furthermore, organic food producers who directly sell to consumers often also home deliver or courier their products to consumers. During Covid, these established channels proved beneficial to those farmers who had a consumer base within close geographical proximity as they could use passes granted by local authorities to deliver their produce which fell under the category of 'essentials'. A farmer in Karnal, Haryana, mentioned that during Covid he was able to supply other perishable products to his customers as he delivered milk and dairy products to them regularly. This helped 'thicken' his relationship with the customers as they appreciated him continuing his services despite the fears of COVID-19.

A farmer from Bulandshahr in Uttar Pradesh set up a collection point in Ghaziabad so that his customers from the city could continue to collect their orders without any hitches.[10] He also mentioned how his consumers came together to help one another as one person collected the produce for those living in the same residential communities or complexes. This reduced crowds and supported social distancing measures. Farmers also increasingly adopted the use of social media and digital payment methods to strengthen their connection with consumers and facilitate the seamless functioning of a socially distanced delivery system building an SFSC with distanced relations.[11]

Farmers with established clientele not only want to retain their hard-earned customers but also feel an obligation to cater to them. Long-term economic and social relationships may develop between producers and consumers within short food supply chains, leading to the development of a sense of responsibility and trust between the parties. The realisation of such relationships depends on factors such as frequency of interactions, quality of interaction, shared values and beliefs around notions of quality, and inclination to build social relations, that is, organised proximity (Dubois, 2018).

Relational proximity plays a critical role in this instance as the interests, sense of belonging, values and beliefs of producers and consumers in relation to the organic food system affect the motivation for both to reconnect with each other (Kneafsey et al., 2008). Most farmers give precedence to their regulars who have come to trust the producer and build a relationship with them (if only to the extent of buying organic

[10] The farmer also runs a farmers' producer organization (FPO) and procures organic products from other farmers to sell to the end-consumer.

[11] Even pre-pandemic, the role of social media and digital transfers were increasingly gaining importance due to multiple factors, including a push from the government of India under its 'Digital India' programme, increasing coverage of fast internet networks, the proliferation of digital payment applications, and popularisation of social media.

products). This continued during the pandemic. A farmer in Bhiwani, Haryana, explained:

> *When I harvest the wheat, I can't say yes to any new consumer because even before harvesting it is booked. I think that I have 15 customers. It becomes my moral duty to ask them if they want the wheat or not, whether I ask them in January or February. If someone says yes, then okay. And then I estimate how much yield I will be getting this time. And only after fulfilling the requirements of my regulars, if I have any excess and I get a call, I say yes.*

Trust plays a pivotal role in direct-to-consumer networks, which became even more important during the pandemic. For farmers, the pandemic tested this relationship. A question that emerged for them was whether their customers would return when the lockdown ended. It is evident from the responses that the organic food supply chain based on a direct-to-consumer marketing model did not remain unaffected by the pandemic.

Alternative Food Networks during a Pandemic: Insights from Delhi NCR

The respondents of this study all participate in what can be termed as 'strong' alternative food networks (Watts et al., 2005). Not only the 'quality' of the product circulated in the network but also the journey from 'farm to fork' and the potential for 'reconnection' (Kneafsey et al., 2008) are of importance for the producers. They allow a dynamism and connectedness that enables local food supply chains to adapt quicker to supply chain shocks like COVID-19, with the flexibility afforded by adopting localised responses and mobilising the actors' resilience (Bene, 2020; Thilmany et al., 2020).

The concept of proximity has been taken as the focal point of analysis to contextualise the role of short food supply chains for organic food producers during the pandemic (Kebir & Torre, 2012; Aubry and Kebir, 2013; Eriksen, 2013; Dubois, 2018). Spatial relations and social relations work in tandem within direct selling SFSCs (Hinrichs, 2000). Therefore, this section explores proximity within the organic food networks of Delhi NCR from two perspectives during the pandemic: geographical and relational proximity.

Geographical proximity

The spatial or physical distance between organic food producers and their consumers became a vital parameter that determined the smooth operations of direct-to-consumer supply chains. Geographical proximity constraints (Torre and Rallet, 2005) in the form of the immobility of agricultural land introduced barriers to the operation of SFSCs. Restrictions on the movement of people and goods were at the heart of managing the spread of the virus during COVID-19 in India, which made distance even more embedded in the functioning of the food system.

The impact of geographical distance between production and marketing sites was evident in the initial faltering of the Indian food supply chain during the pandemic (Mahajan & Tomar, 2020). Additionally, the rule of social distancing altered the subjective perception of geographical distance (Torre and Rallet, 2005) and took away opportunities for 'temporary geographical proximity' (Dubois, 2018) presented during in-person interactions. Distances became 'relatively further' due to the reconfiguration of how geographical spaces were constructed into zones. Therefore, urban areas that were perceived as geographically proximate pre-Covid, became geographically distant with the introduction of movement restrictions during the pandemic. Major urban areas were under stringent lockdown restrictions, while movement in villages continued largely unrestricted. A majority of the respondents relied on an urban clientele located in the major urban centres in the region. Urban, middle-class consumers are at the heart of the "new consumer revolution" (Srinivas 2012: 358) in India and are driving demand for organic food (Osswald and Menon, 2013). Respondents whose clientele lived near them were able to conduct business as usual and sell their produce from their farmgate or homes and even continue/start home delivery without too many hardships. Non-perishable and value-added organic products could even be stored for when mobility restrictions were relaxed for customers.

On the other hand, respondents whose customers lived in distant cities/towns were unable to reach them and vice versa, and suffered due to falling sales. This was especially true for producers of perishable food where post-harvest losses were immense. The lack of adequate storage facilities and infrastructural support caused many to lose their crops. A shortened food supply chain has been evidenced to be particularly beneficial for perishable products with a closer farm-to-fork distance, due to their short shelf-life (Blay-Palmer et al., 2021). Respondents, especially perishable organic food producers, began seeking local consumers and clientele within their own and neighbouring villages and towns, who were accessible during the pandemic. This showcased the flexibility of short food supply chains as producers were able to navigate the blockades of the lockdown through their capacity to adapt and leverage their resilience (Bene, 2020). Systemic shocks can rapidly sever rural-urban connections in a planning region like Delhi NCR. However, as other studies show, they can also help develop resilient production-consumption food networks as producers and consumers rely on geographically contiguous or proximate regions by reconfiguring the SFSCs (Blay-Palmer et al., 2021; Yousefian et al., 2021).

Relational proximity

Direct selling entails developing a personal relationship (to varying degrees) between the producer and the consumer that is generally based on trust (Hinrichs, 2000). This direct relation between producers and consumers at the interface of alternative production and provisioning practices is relational proximity (Eriksen, 2013), and is often based on shared values and confidence (Kebir & Torre, 2012). However, the development of a community based on relational proximity has been contested (Freidberg and Goldstein, 2011).

In alternative food supply chains of organic food, relational proximity is mediated by a shared logic of belonging to the same network of producers and consumers of 'quality' and value-laden food products, and a logic of similarity deriving from a shared vision and values of organic food and farming (Torre and Rallet, 2005). The pandemic highlighted the importance of relational proximity for the respondents in a few ways.

Organic farmers continued to cater, often at limited capacity, to regular consumers with whom they shared a trust-based relationship. Mutual accountability and trust evolve in long-term producer-consumer associations through the medium of food and the exchange of values and knowledge. The resulting relational proximity between the two parties has the ability to overcome shocks and stressors like COVID-19 (Thilmany et al., 2020). Nonetheless, these producers' ability to continue to cater to requirements was affected by spatial distance from the consumers during the initial phase of lockdown.

Face-to-face interactions with distant consumers were greatly reduced as a result of restrictions on mobility. Social media channels became a medium to update consumers about the different stages of production and processing the farmers were undertaking, as a form of establishing virtual reconnection (Bos & Owen, 2016) or relational proximity. Owing to relational proximity, most producers, particularly those who produced non-perishable and value-added products, were able to retain their regulars once restrictions were relaxed. In contrast, there was an observable decline in the retention of new customers acquired during the pandemic once its initial threat passed.

Additionally, direct interaction and feedback from consumers allowed the producers to adapt to the demands of the market of the 'new normal'. One such instance was farmers meeting the increased demand for immunity-boosting food products during the pandemic, owing to their diversified production practices (Galanakis, 2020). Respondents reported increased demand for products like raw turmeric, moringa powder, millet and giloy, as well as for their value-added products during the pandemic. They were able to capitalise on such demand owing to direct requests and feedback from consumers and to participate directly in the co-creation and transmission of localised discourses on 'healthy' and 'immunity-boosting' foods.

Furthermore, respondents realized the importance of developing relational proximity to those in their immediate geographical proximity. Concerted efforts were made by producers whose customers lived in distant urban areas to develop a local clientele for their produce. The knowledge of an organic farmer's practices in their community and among neighbours, flexibility to determine their own price points, and social capital were mobilised to expand the network of local customers. In this instance, a combination of geographical proximity and relational proximity (for example, based on membership of the same village community or social group and shared values and beliefs) became the mobilising factors for nurturing relationally proximate face-to-face food networks.

Conclusion

During COVID-19, the mainstream food supply chain adapted and adjusted to the demands of the new restrictions and regulations applied to the agri-food sector. After an initial phase of disruption, the sector slowly regained its equilibrium with a few persisting underlying effects. The short food supply chains were likewise taking cognisance of the 'new normal.' The geographical distance between the farm and the fork became more pronounced as lockdown measures were announced, and organic food supply chains were not unaffected. This paper highlights the co-existence of disruptions, vulnerability, and resilience within the space of alternatives during the span of the pandemic, through the experiences of organic food producers engaged in direct-to-consumer selling models in Delhi NCR.

Consumers who were once considered geographically close to producers became perceptually distanced as mobility was localised. This increased the subjective judgement of geographical distance (Torre and Rallet, 2005) and diminished geographical proximity. For producers of organic food in Delhi NCR, the importance of geographical proximity to the consumer became more pronounced as it directly affected their ability to sell their produce. Therefore, rather than the 'death of geography' (Morgan, 2004)[12] in the face of the increasing prevalence of the relational proximity discourse, the pandemic highlighted the continued relevance and even primacy of the spatial dimension. This is true for SFSCs and AFNs in the Global South, even in the absence of systemic shocks (Moustier and Renting, 2005; Freidberg and Goldstein, 2011).

Direct selling initiatives fall within the scope of face-to-face short food-supply chains, including those initiatives that are mediated through the Internet (Marsden et al., 2000). Organised proximity is characteristic of these SFSCs that are based on distance relations and direct relations (Aubry and Kebir, 2013). On the other hand, geographical proximity is critical to the construction and maintenance of supply chains with direct relations while it is not as consequential in SFSCs based on distanced relations. With the perception of distance being affected, producers, particularly reliant on supply chains with direct relations, had to adapt. How they fared during the pandemic depended on the ability of their production practices and marketing channels to navigate restrictions on movement, especially rural-urban movement, to cater to new demands and clientele, and to maintain relational proximity in the face of geographical distancing.

While some respondents were able to capitalise on their proximity to consumers, others had to re-evaluate their networks and alter their operations. This paper demonstrates that in alternative short food-supply chains, geographical and relational proximity matters, particularly in times of crisis when the resilience of the food system is being challenged. However, when the physical mobility of people is restricted in direct-selling food production-consumption networks, thus distancing both the place of production – that is, the immobile agricultural land (a support good) – and the producers from their consumers, the issue of geographical proximity outweighed organised proximity. As a result, producers had to build relational proximity with

[12] Morgan (2004) argues that organisational proximity cannot be a complete substitute for geographical proximity within learning and knowledge networks and flows across multiple spatial scales. I take this thesis forward in relation to AFNs and SFSCs where relational proximity has gained prominence in the work, to note that during the pandemic, geographical proximity played an even more important role in direct selling marketing initiatives.

potential consumers within geographically proximate locations. Moreover, pre-existing relational proximity based on membership and similarity along non-organic food-related parameters can be used to nurture relational proximity within budding organic food producer-consumer networks.

Fewer operations and shorter chains with greater connectedness between actors offered flexibility to the organic food producers in Delhi NCR. Alternative food networks can provide farmers in India with alternative avenues to improve their livelihood opportunities by leveraging the potential of SFSCs and proximity within specific rural-urban regions. The capacity to adapt and resiliently face challenges are heightened when multiple marketing channels are available to prevent the total collapse of livelihood in the event of monopolistic conventional channels being disrupted. Producers can move fluidly between supply chains based on considerations of comparative advantage rather than forced choice.

Ultimately, evidence from a comparative perspective of both supply chains suggests that with Covid-like events, characterised by their potential disruptiveness, the food supply chain faces vulnerabilities in the initial stages. With movement restrictions, geographical proximity emerges as an essential concern for a food supply chain increasingly dependent on the transportation of goods and services. Localised responses and resilience capacities of the respondents were key to how well the respondents fared through the initial disruptions that lay bare the vulnerabilities of our supply chains. The pandemic drove home a clear lesson: the flexibility and adaptive capacities of food supply chains and their actors determine the resilience of the food systems.

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COVID-19 and the Neoliberal Resilience of Food Provision in Istanbul: Non-Regulation and Agility in the Fruit and Vegetable Wholesale Markets

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Abstract

This research examines the impacts of the COVID-19 pandemic on the Istanbul fresh fruit and vegetable provisioning between March and September 2020. In line with global trends, the measures taken within the scope of the pandemic were expected to cause disruptions in various provision channels. Apart from the logistic problems experienced in the first couple of weeks of the pandemic, we observed that there was no severe crisis in the fresh fruit and vegetable provision systems of Istanbul in 2020. Based on our fieldwork conducted between June and September 2020, we attribute this resilience to two key factors: (1) the non-regulation and ineffective control of pandemic measures, allowing actors to operate without major constraints, and (2) the agility of provision actors in adapting to various channels and positions. By exploring these dynamics, we aim to contribute to discussions on neoliberal resilience, emphasizing the importance of reclaiming the concept of resilience without reinforcing the hegemony of the neoliberal agrifood system.

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Introduction

> *Turkey is currently not self-sufficient and is experiencing a partial famine. … There may be serious problems in accessing food in Turkey. … Famine has knocked on our door, now it will cross the doorsill. (Aysu, 2022)*[1]

> *COVID-19 did not affect much. Only certain intermediaries had trouble like those working with hotels, restaurants, and airports. But the products that they had been buying and selling were bought by other intermediaries like supermarkets or stallholders in the local markets (pazarcı). (Interview 8, shopkeeper in Bayrampasa Wholesale Market, Istanbul, 22.09.2020)*

Istanbul, with its almost 16 million inhabitants, is the most populous city in Europe, and the 13th most populous city in the world. Nearly one out of five people in Turkey lives in Istanbul, the population density of which is 2.905 people per square kilometre. According to the records of the Provincial Culture and Tourism Directorate of Istanbul, in 2019, before the COVID-19 pandemic, the number of foreign visitors hosted in the city was almost equal to its own population. Moreover, as of 9 September 2021, there were over half a million Syrians under Temporary Protection (SuTP) living in Istanbul, the majority of whom were considered to be among the most food-insecure social categories.[2]

The situation of food (in)security in Turkey, as reflected in and reverberating through the available data, estimations, and predictions, is contradictory. Although Turkey has no available data in the section on hunger and food insecurity statistics in FAOSTAT Country Profiles, some other globally used indices provide food insecurity estimates. For instance, according to the Economist Impact (2022) Global Food Security Index (GFSI), in 2022 the prevalence of undernourishment in Turkey was 2.5%, and of underweight children was 1.5%. The Global Hunger Index report (GHI), published jointly by Concern Worldwide and Welthungerhilfe, measures and tracks hunger at the global, regional, and country levels (Von Grebmer et al., 2020). In 2023, Turkey was one of 20 countries with a low GHI score of less than five. HungerMap developed by the World Food Programme (WFP), also tracks trends in household food consumption, which is one dimension for tracking acute food insecurity. The WFP (2022), contrary to the GFSI and GHI estimates, listed Turkey among the countries with the highest prevalence of insufficient food consumption. On 7 June 2022, 14.8 million people, almost 18% of the population, had not had sufficient food over the past 90 days.

The Istanbul Planning Agency (2022) conducts the monthly Istanbul Barometer survey, which provides information about Istanbul on many topics ranging from Istanbulites' economic situation to their emotional state. In November 2022, 66% of the respondents to the survey stated that they were worried about having enough food, and 70.3% of the participants stated that they could not buy the food they wanted during the month due to financial difficulties. Furthermore, 62.4% of the participants stated that they reduced their portions because they could not obtain enough food in the same month.

Although its role in these recent statistics remains indeterminate (due to the lack of relevant studies), it is plausible to state that the COVID-19 pandemic emerged when the majority of Istanbulites were already facing significant challenges in terms of access to adequate, healthy, and sustainable food. Yet, as the words of the shopkeeper in Istanbul Bayrampasa Marketplace quoted at the beginning of this article clearly reflect, the pandemic seems to have had no substantial effect on Istanbul's fresh fruit and vegetable provision. This is quite surprising, considering the expectations and comments of both mainstream and critical circles, especially those during the initial phase of the pandemic, and the words of the former president of the Farmers' Union (Çiftçi-Sen), Abdullah Aysu (2022, cf., 2020) quoted above.

[1] For Abdullah Aysu's early warnings on the risk of famine due to the pandemic, see his video interview published online in March 2020 (Aysu, 2020).

[2] As defined by the Food and Agriculture Organization of the United Nations (FAO, n.d.), food insecurity is the situation when people 'lack regular access to enough safe and nutritious food for normal growth and development and an active and healthy life'.

How are we to understand this unexpected 'resilience' of the fresh fruit and vegetable provision systems of Istanbul faced with the COVID-19 pandemic? This question also brings to mind the following thought-provoking observation that emerged in the stimulating discussions held during the 'mini-conference' titled 'The Food System in the (Post-) Pandemic World: Disruptions, Vulnerability, Resilience, and Alternatives'[3] of the International Sociological Association (ISA)'s Research Committee on Sociology of Agriculture and Food (RC40): 'The hegemonic (capitalist-industrial) food system has proven to be "resilient" in the face of the pandemic!?'

Based on our fieldwork – conducted between June and September 2020, a period when the pandemic was continuing but the relevant restrictions and measures were reduced, with a claim of returning back to 'normal' – we attribute this resilience to two key factors: (1) the non-regulation and ineffective control of pandemic measures, allowing actors to operate without major constraints; and (2) the agility of provision actors in adapting to various channels and positions. By exploring these dynamics, we aim to contribute to discussions on neoliberal resilience, emphasising the importance of reclaiming the concept of resilience without reinforcing the hegemony of the neoliberal agrifood system.

The article consists of five sections. After this introduction, the subsequent part engages in a discussion about the theoretical underpinnings and directions of the paper, particularly concerning the processes of neoliberal restructuring and their observable durability, which is referred to as 'neoliberal resilience'. The third section sheds light on the fresh fruit and vegetable provisioning channels and actors in Istanbul, with a specific focus on wholesale markets, which serve as central elements in our analysis. The fourth section elucidates the fieldwork and analysis procedures, along with presenting our findings, which constitute the two primary pillars of the aforementioned neoliberal resilience in our case. The conclusion revisits the concept of neoliberal resilience and, drawing on the discussions presented in the preceding sections, it highlights the ways in which our findings contribute to both the neoliberalisation of resilience, and the attempts to reclaim the concept of resilience.

Conceptualising the Unexpected Resilience during the Pandemic under Neoliberalism

As it is still fresh in our memories, one of the widely debated issues in relation to the pandemic has been its effects on food provision systems. During the pandemic, related disruptions (as well as concerns about their possible escalation) in agricultural and food production, international trade and food circulation, supply chains, and consumption spheres prevailed on the popular agenda and in debates. There was a kind of common fear, though with different underlying motives, crosscutting various actors – e.g. the Food and Agriculture Organisation of the United Nations, transnational agrifood capital, and dissident grassroots movements and NGOs – that those disruptions could quickly turn into a food crisis, even a famine, for certain regions and communities (FAO, 2020a, 2020b; Harvey, 2020; Altieri and Nicholls, 2020; Clapp and Moseley, 2020; The Food and Land Use Coalition, 2020; van der Ploeg, 2020).[4]

Turkey was no exception to those escalating concerns and fears. Existing issues and food insecurities, as well

[3] For more information on the RC40 'mini-conference', please see the Introduction to this special section.

[4] During the pandemic, we witnessed once again the promotion of the 'we are all in the same boat' discourse, especially by those in power. For instance, here is what a member of the Coronavirus Scientific Advisory Board (an advisory group set up by the Ministry of Health specifically for 'the fight against the COVID-19 pandemic' in Turkey) said: 'Such epidemics are treated like a natural disaster. As in all other natural disasters, you will be successful in the fight against the pandemic if you put aside political fights, and personal interests, and act jointly as a nation (...) after all, we are all in the same boat.' Contrary to such a 'scientific' view, it is important to highlight the unequal impacts of the pandemic across different geographies and social categories, so much so that we are not all in the same boat and even some of us have no boat at all. For a critique of this discourse in relation to necropolitics in the context of Turkey, see Bakıner (2020), and for a discussion on the diversified impacts of the pandemic on agricultural producers in Turkey, see Keyder et al. (2020).

as vulnerabilities related to ecological problems,[5] climate crisis in particular,[6] were expected to escalate with the pandemic, especially for Istanbul, a giant metropolitan city, where complex food supply chains are vital for its food provision (cf., Aysu, 2020; Büke, 2020a, 2020b; Dogan, 2020a, 2020b; Günaydın, 2020; Keyder et al., 2020). The main underlying reason for such an expectation can be pointed out as the neoliberal policies that have been restructuring agrifood relations in Turkey since the early 1980s.

One of the important outcomes (if not aims) of neoliberalism has been the reshaping of the international division of labour based on capital's search for 'cheap labour' and 'cheap nature' (Clapp, 2012; Magdoff et al., 2000; McMichael, 2013; Weis, 2007; Wolf and Bonanno, 2014). Through policies such as market liberalisation, de/re-regulation, financialisation, and privatisation, producers of the Global South have been forced to shift their crop design towards more labour-intensive, export-oriented, and/or high-value-added crops such as fresh fruits and vegetables, or towards the production of crops (mostly based on extractivist production models) that are significant for the agri-food industry, livestock complex or biofuel sectors such as maize, soybeans, and oilseeds. Despite liberal mainstream arguments, which promoted the so-called 'free market' as the primary mechanism to achieve food security (Otero et. al, 2013), the rural and urban labouring classes of many countries, including Turkey, have experienced this process as a significant erosion in their rights to determine their own agri-food systems, and to produce and/or access healthy and sustainable food (cf. Aydın, 2001; Öztürk et al., 2021).

To make sense of the extent of this erosion, particularly in the field of agriculture, here are some macro statistical data (Turkish Statistical Institute (TurkStat, 2023). The proportion of the rural population in the total population decreased from 57.5% in 1980 to 6.6% in 2022. The share of agricultural output, including forestry and fisheries, in the Gross Domestic Product, which was approximately 31.2% in the 1970, dropped to 6.5% in 2022. In 1980, one in every two employed individuals worked in agriculture, but by 2020, this figure had decreased to one in every six people. The total agricultural area, which was around 42 million hectares in the 1990, has dwindled to 37.753 million hectares as of 2020. It is important to note that the burden of all these setbacks has fallen mostly on small producers (Aydın, 2001, 2010; Boratav, 2009; Ecevit, 2006; Ecevit et al., 2009; Keyder and Yenal, 2011).

There were thus clearly good reasons for the concerns about the likely negative effects of the COVID-19 pandemic on food provision systems, and this research has also been a product of those concerns. We have focused on fresh fruit and vegetable provisioning, which is not only considered to be indispensable for a healthy diet but also has a significant share in household food expenditures. For instance, according to Otero et. al's (2013: 277) calculations for the 1985-2007 period based on FAO statistics, fruits and vegetables have been among the top five basic food sources that constitute at least 59% of the total calorie intake in the country.

Here, fresh fruit and vegetable provisioning includes all the processes that products go through between production and consumption, such as preparation for the market (sorting, stacking, classification, etc.), preservation, transportation, packaging, and retail sales. Although the focus of this research has been Istanbul's wholesale markets (in Turkish: hals), to understand the overall picture of the entire provision processes, we reached out not only to the brokers (komisyoncu) and merchants (tüccar) (i.e., the main actors of wholesale

[5] According to the Environmental Performance Index published by Yale Center for Environmental Law & Policy at Yale University and the Center for International Earth Science Information Network at Columbia University, Turkey ranks 172nd among 180 countries in the Environmental Performance Index, 176th in Ecosystem Vitality, and 166th in Climate Change Mitigation (Wolf et al., 2022). The Chamber of Environmental Engineers Istanbul Office's 2023 report on 'Istanbul's Environment Status', in addition to mega projects as 'ecological destruction projects' threatening Istanbul's agricultural land and forests, states water and air pollution, and waste management as the major ecological problems of Istanbul. See below for more information on mega projects' impacts on Istanbul's agriculture.

[6] Considering the risk of extreme coastal events, Istanbul was identified as the most vulnerable to the impacts of climate change among the European coastal cities (Abadie et al., 2016).

markets),[7] and their professional organisations, but also to producers, 'organised' and 'traditional' retail actors, alternative food initiatives, and the representatives of Istanbul Metropolitan Municipality's related institutions. Admittedly, we found it surprising that during our research we did not encounter a significant disruption or hear a crisis narrative due to the pandemic. Except for the short period of shock and panic following the declaration of the pandemic,[8] there have been no major disruptions to supply chains, such as the physical inability of consumers to access food products, and there was no reported scarcity of food or beverages on market shelves. Almost all of our interviewees mentioned significant 'structural problems' with regard to the provision systems such as inflation and overall economic difficulties, fluctuating prices, long working hours, and infrastructural problems like inadequacy or lack of cold chains, the smallness of shops, traffic problems, and so on. However, none of them attributed these problems specifically to the pandemic.

To understand this, we have tried to analyse: (1) the main features of the pandemic management and regulation in the wholesale markets; and (2) the effects of the pandemic on the characteristic features of the provisioning channels and their actors. We argue that there are two main pillars underlying the seeming resilience of the fresh fruit and vegetable provisioning of Istanbul: (1) managing the pandemic and the related measures via non-regulation and/or ineffective control and monitoring of the implementation of the policies and measures, i.e., regulation of the pandemic conditions by non-regulation; and (2) the ability and capacity of the so-called 'traditional' provision actors to quickly move and shift among various provision channels and positions, in other words, the agility of the provision actors which are mobile and/or transitive.

We think that our findings can be discussed in relation to the concept of neoliberal resilience, which can also be seen as one of the features of the resilience of the capitalist-industrial agrifood system in general. Neoliberal resilience has been, on the one hand, a product of 'exploring the mechanisms that have allowed neoliberalism to spread and remain resilient' in the face of 'popular disapproval' (Axe, 2023: 637) and crises such as 'the Global Financial Crisis of 2008 and the Great Recession of the 2010s' (Jabko, 2021: 337) (cf., Madariaga, 2017, 2020; Rodríguez, 2021). On the other hand, it has been used to criticise the appropriation of the concept 'resilience' by neoliberalism, or, to put it differently, to scrutinise the neoliberal form of the concept of resilience itself (cf. Dobbins and Plow, 2023; Ferguson, 2019; Hamilton, Zettel and Neimanis, 2021; Meriläinen et al., 2022).

While these critiques might call for an abandonment of the concept, we care about not constructing a 'capitalocentric discourse' (Gibson-Graham, 2006, 2008) that would contribute to the hegemony of neoliberal agrifood system by obscuring the alternatives that already exist. Hence, in line with Meriläinen et al. (2022), we are also interested in reclaiming the concept of 'resilience' by focusing on the social relations between provisioning actors that cannot be interpreted as the resilience of neoliberalism itself.

In this regard, we claim that: (1) while non-regulation points to the resilience of the existing neoliberal agrifood regime through the sacrifice of decent living and working conditions of the provisioning actors in the wholesale markets, as they have no other option than continuing their business as usual; (2) the agility of the small and medium scale provisioning actors points to the informal connections between them, which appear to be crucial for the resilience of the provisioning networks while simultaneously made invisible and undermined by neoliberal regulations favouring supermarkets over wholesale markets in Istanbul.

In the next section of this article, we introduce the wholesale markets in the fresh fruit and vegetable

[7] According to the law no. 5957 issued in 2010, a broker is a professional who works on a commission basis on their own behalf and on behalf of others for the purpose of the wholesale of goods. The commission on the sales price is what the broker earns for this service. This commission is set at a maximum of 8% by this law, and it is also stipulated that this maximum rate may be reduced by the relevant ministry if necessary. The same law defines the merchant as a professional who works on their own behalf and account for the wholesale of goods. The merchant who does not work on any commission, carries out trade activities.

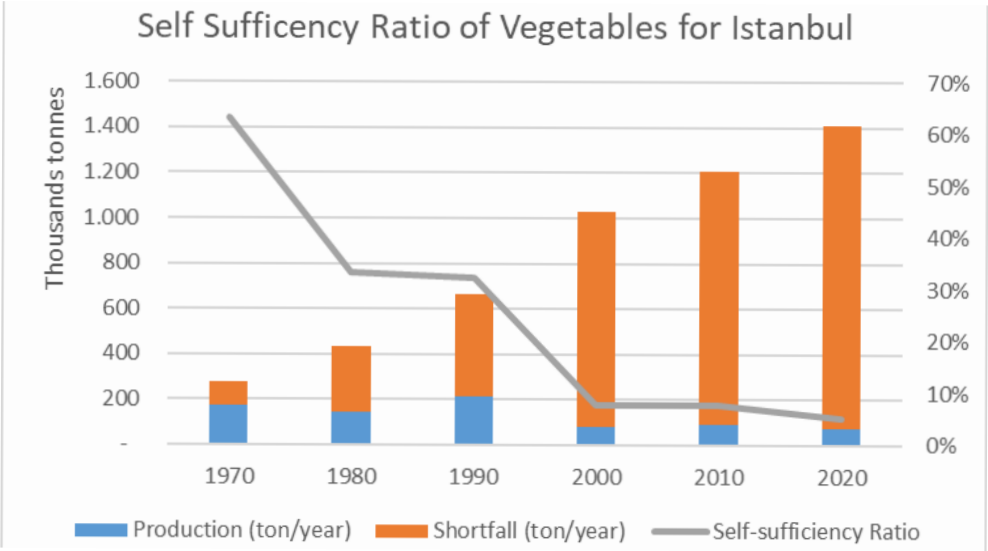
[8] Based on the measures taken against the pandemic and the experiences of our interviewees, it is possible to categorize our research period into three major episodes in 2020: (1) Shock and Panic (11 March – 11 April); (2) Lockdowns (11 April – 1 June); and (3) 'New Normal' – Controlled-reopening (1 June – 30 September).

provisioning networks in Istanbul. After setting the stage, we discuss these two main pillars of the apparent resilience of the fresh fruit and vegetable provision systems in detail in the following section.

Istanbul's Food Provisioning and the Wholesale Markets

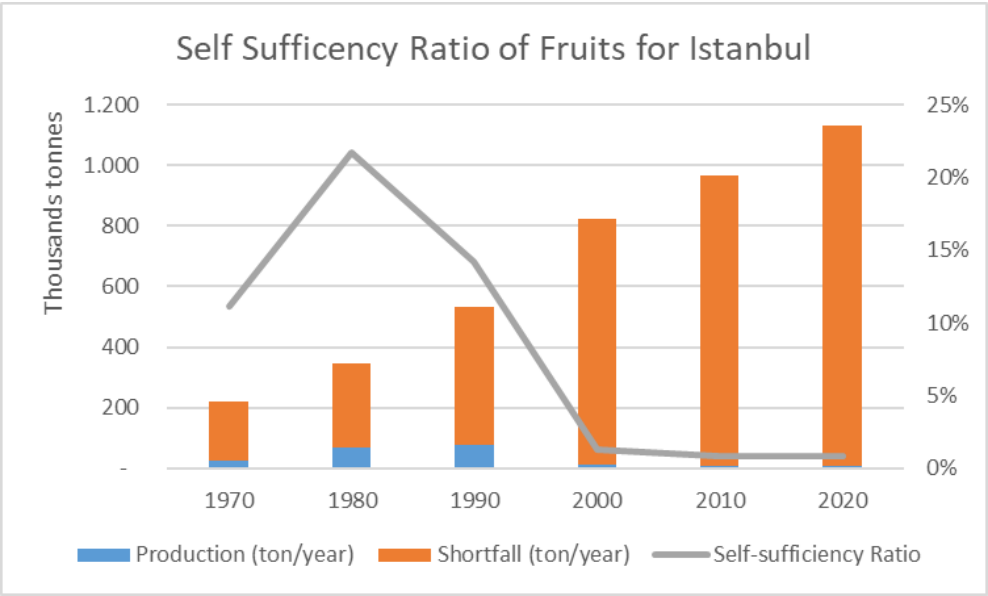
Given its massive population characterised by various forms of inequality, we have calculated that Istanbul residents consume around 1.5 million tons of fresh fruit and 2 million tons of fresh vegetables per year (Yerküre, 2021). It is worth noting that only 1% of fresh fruit and vegetables consumed in Istanbul is produced within the administrative borders of the city itself (Yerküre, 2021). There might be nothing surprising about this, given the enormous scale of Istanbul as a megacity. Yet it is important to note that, until the early 1970s, and the early 1980s respectively, Istanbul was capable of producing over 60% of the vegetables and over 20% of the fruit needed by its residents for a balanced diet (Yerküre, 2021). Figures 1 and 2 below provide an overall picture of how Istanbul's vegetable and fruit production-need balance has changed since the 1970s.

Figure 1. Istanbul's Vegetable Production and Need Balance (1970-2020)



Source: Authors' own calculation based on the National Statistical Institute (For pre-2004 data) and TurkStat (2020) statistics

Figure 2. Istanbul's Fruit Production and Need Balance (1970-2020)



Source: Authors' own calculation based on the National Statistical Institute (for pre-2004 data) and TurkStat (2020) statistics

The relatively better situation for vegetables compared to fruit can be attributed to the fact that some of Istanbul's famous historical gardens (called bostans in Turkish) in the inner city continue to produce, albeit with some difficulty, and that vegetable production continues, albeit marginally, in the few remaining agricultural production areas on the periphery of Istanbul. The best known of Istanbul's bostans are the Yedikule Bostans (which date back to the construction of the Walls of Istanbul (Constantinople) in the 5th century), the Piyala Pasha Mosque Bostan (the construction of the mosque was completed between 1563 and 1574, and the Kuzguncuk Bostan (its construction date is unknown) (Istanbul City Council, 2021). These bostans historically played a significant role in the food provisioning of the Istanbul of Byzantium and the Ottoman Empires, as well as of the Republic of Turkey from 1923 until the 1950s (cf. Kaldijan 2004, 2000). Regarding the current production of Istanbul's bostans, Shopov and Çakmakoglu (2013) estimate that a total of some 40 tons of vegetables (purslane, lettuce, dill, chard, cabbage, parsley, tomato, pepper, cress, lamb's ear, cauliflower, eggplant, corn, kale) and about four tons of fruit (fig, mulberry, pomegranate) are harvested from the bostans located in the historical peninsula (Suriçi) and around the Walls of Istanbul (cited in Istanbul City Council, 2021: 15).

It should however be noted that those bostans were already marginalised both spatially and in the memory of Istanbulites, and the remaining marginal ones are currently under significant threats.[9] In addition to the trajectories of agrifood policies, urbanisation and industrialisation processes, especially since the second half of the 20th century, have led to the loss of Istanbul's bostans as well as significant declines in the city's agricultural areas, orchards, pasture, and forests (Yerküre, 2020, 2019). While the population of Istanbul was three million in the 1970s, it exceeded 7 million in the 1990s. In the following 20 years, the population doubled again, and by 2022, Istanbul's population exceeded 15 million. As production areas decreased and fruit and vegetable production declined within the city, self-sufficiency[10] decreased dramatically with the rapid increase of the resident population and the number of tourists.

As Istanbul industrialised in the 1960s, it became the primary address of internal migration of the rural population within the country. Agricultural production areas in and around Istanbul were transformed into industrial facilities and slum areas built by the incoming population on their own. Becoming a mega metropolis by the 1990s, Istanbul expanded outwards, deindustrialising Istanbul itself and swallowing the countryside around it. As industry moved eastwards and westwards towards other provinces of the Marmara Region, Istanbul grew and became more crowded with the service and construction sectors. For instance, since 1995, while available total agricultural land in Istanbul has declined by 27.5%, this decline is 74.2% for vegetable growing land and 31.4% for fruit growing land (Yerküre, 2021). Recently 'mega projects' like the North Marmara Highway, Istanbul Airport, and the Third Bosphorus Bridge have also emerged as serious threats to the city's agrifood system. Together with the Istanbul Canal Project – the construction of which is currently one of the most contentious issues of the city – these four mega projects will cause Istanbul to lose a total of almost 20% of its agricultural land and pasture, and 4% of its forests (Yerküre, 2021).[11]

Given this socio-historical background, according to the records of the wholesale markets, Istanbul's current major fresh food suppliers are Turkey's fresh food production hotspots like Antalya, Mersin, Adana, Izmir, Bursa, and Eskisehir. The journey of fresh fruit and vegetables from the fields to the tables of the end consumers is organised by multi-actor and complex provision channels and processes (see Figure 3). It can be said that at the centre of this complex lie the wholesale markets, which are still the main intermediaries in Turkey, especially for fresh fruit and vegetables. Istanbul has two major public (Bayrampasa Hali and Atasehir Hali) and

[9] In addition to the ongoing construction and infrastructural projects, one of the recent threats that the bostans have been facing are 'green' threats, consisting in dedicating these spaces as parks, hobby gardens, recreation areas, playgrounds, etc. For a critique of these new 'green' policies, which prioritize recreational rather than productive activities, in terms of the creation of new rent areas through ecological gentrification and green washing, see (Istanbul City Council, 2021).

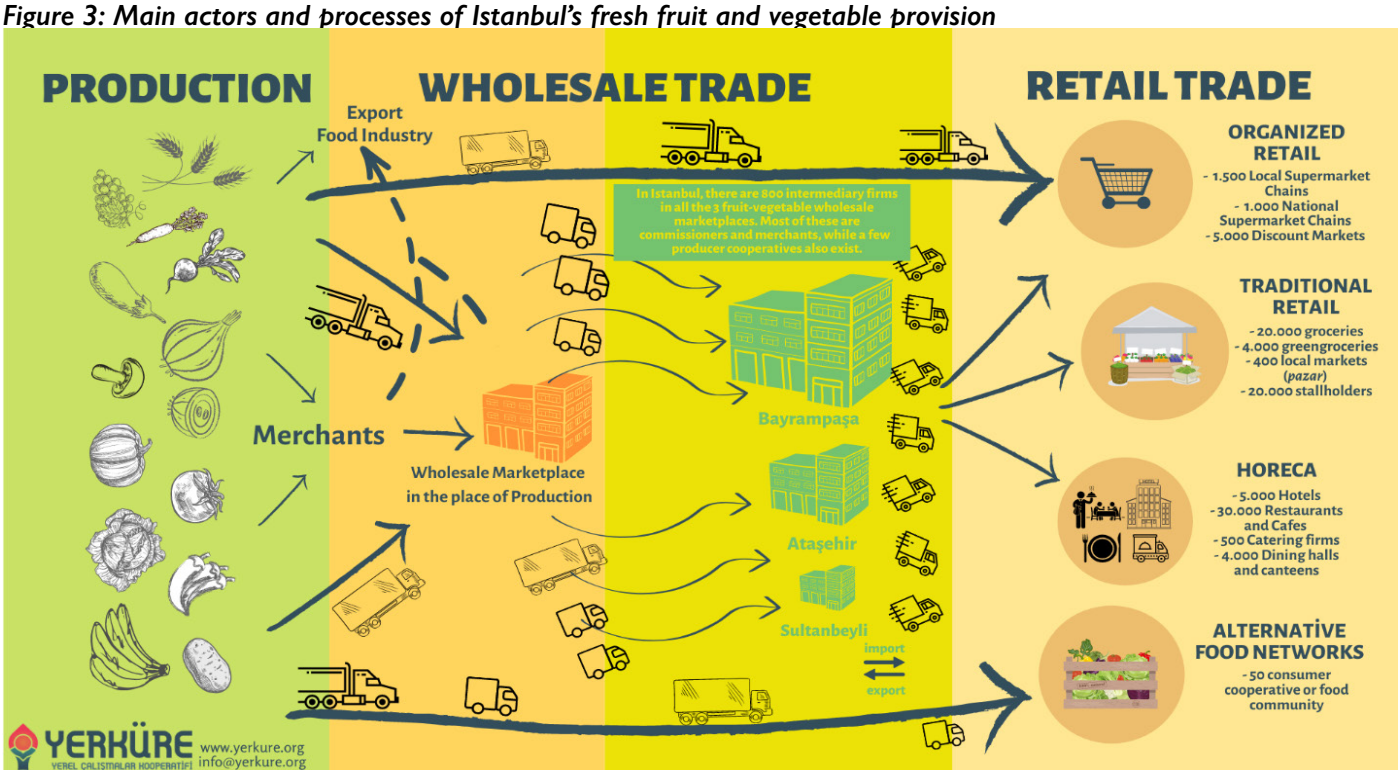
[10] In this context, the self-sufficiency rate was used as the ratio of fruit and vegetables produced within the city to meet the recommended nutritional needs of the urban population.

[11] Especially the Kanal Istanbul Project – which is the only one of the four listed above that has not yet been realized – has been at the center of urban as well as national politics. For instance, one of the major promises of the current mayor who was elected in 2019 from the main opposition party, has been to stop the project.

one small-scale private (Sultanbeyli Hali) wholesale markets. Until the latest legal change in 2010 (effective in the mid-2010s, see Turkish Republic Official Gazette, 26 March 2010), all fresh fruit and vegetables were obliged to pass through these marketplaces.

Today, Istanbul's annual fresh food input is estimated to be 7.5 million tons, and out of that, approximately 3 million tons pass through three wholesale markets of the city which are usually considered to be the 'traditional' distribution channel. In other words, approximately 40% of fresh food deliveries still pass through Istanbul's wholesale markets. This means that almost 10 thousand vehicles – 160 eighteen-wheelers, 1,100 trucks, 5,200 pick-up trucks, and 3,350 passenger cars – go in and out of the wholesale markets of the city every day (Yerküre, 2021).[12]

Figure 3: Main actors and processes of Istanbul's fresh fruit and vegetable provision



The rest of the fresh food is transported through national retail chains' own supply systems (usually referred to as 'modern' or 'organised' distribution), which is made possible by the legal change mentioned above. Although the literature lacks 'systematic research on supermarket-led changes in Turkey's agri-food system', it is clear that supermarkets have been increasing their hegemony in food provisioning, especially through policies and mechanisms like market liberalisation and joint ventures since the 1980s 'at about the same time as in Latin America, South and East Asia, and Central and Eastern Europe' (Atasoy, 2013: 549, 561). While the role of supermarkets has been marginal in fresh fruit and vegetable provisioning in Turkey, the share of supermarkets in perishable food provisioning 'is estimated to have risen from 30% in 2004 to 43% in 2009' (Atasoy, 2013: 561).[13,14]

[12] According to calculations from a previous study, which considered vehicle license plates (assumed to represent the provinces of departure to arrive in Istanbul), as of 2018, the total annual distance travelled by vehicles arriving at Bayrampasa and Atasehir was 158 million kilometres (Yerküre, 2019). This also translates to a carbon emission of 100 kilotons, equivalent to the annual electricity needs of 17,439 houses (Yerküre, 2019). For further discussions and alternative proposals to this model, deemed unsustainable in light of climate change, see Yerküre (2019).

[13] It is important to note that the definition of perishable food here includes dairy products and meat, in addition to fresh fruit and vegetables (Atasoy, 2013: 561).

[14] Although studies on consumers' choice for fresh fruit and vegetable channels are limited in Turkey, we believe, Akpınar et al.'s (2009: 220) research conducted in Antalya provides crucial insights regarding the underlying reasons for the increasing choice of supermarkets: 'The primary factors that lead consumers to opt for modern retailers when purchasing fresh fruits and vegetables are credit card acceptance, cleanliness and hygiene standards, availability of parking facilities, and opportunity to buy different products from single place.' This is also in line with our own findings. Supermarkets, during the pandemic, seem to have managed to

The data regarding the number of retail actors show the massive scale of retail. In Istanbul, there are around 1,500 branches of local supermarket chains, 1,000 branches of national supermarket chains, and 5,000 branches of discount supermarkets; all together these 7,500 stores constitute 'organised' retail. On the other hand, with its 20,000 grocers, 4,000 greengrocers, 400 marketplaces, and 20,000 stallholders, Istanbul still hosts a significant number of 'traditional' retail actors. In terms of the eating-out and food service sectors, there are over 30,000 restaurants and cafes, 5,000 hotels, 4,000 cafeterias and canteens, and 500 catering firms in the city.

Significantly, thanks to growing opposition at grassroots level to the corporate-industrial agrifood system, the number of alternative food initiatives and networks has also been increasing rapidly, especially since the 2000s. In this regard, there are currently around 50 consumer cooperatives and food networks in Istanbul trying to provide healthy and sustainable food to their beneficiaries (Degirmenci, 2019: 22). Although the search for alternatives to capitalist provisioning models is not new in Turkey,[15] alternative food networks (AFNs) are a rather recent phenomenon (Karakaya, 2016; Degirmenci, 2019; Ince and Kadirbeyoglu, 2020).[16] It is possible to say that the increasing public attention and interest in a healthy diet in the COVID-19 context led to a rising interest in AFNs that aim to provide sustainable, healthy, local, and ecological food to their beneficiaries. They have become more visible and, we would say, gained strength during the pandemic (cf., Keyder et al., 2020).

In order to understand how the complex fresh fruit and vegetable provision systems have (not) been affected by the pandemic, we focused mainly on the actors and processes at the public Bayrampasa and Atasehir fresh fruit and vegetable wholesale markets of Istanbul (see Photo 1 and Photo 2). There are 800 intermediary companies in these wholesale markets, composed almost exclusively of merchants and brokers, with only two producer cooperatives. The shops in the marketplaces are generally small areas of 70-80 square meters (see Photo 3). Fixed staff such as clerks, accountants, and porters work alongside the merchant/broker.

Photo1: Early morning traffic at Bayrampasa fresh fruit and vegetable wholesale market (Photo credit: authors)

create an image of 'safe' places for shopping since they exercised more control over the rules of wearing a mask and keeping at least 1.5 meters distance, which was a significant challenge at the open-air neighbourhood markets (pazars).

[15] With the increasing internal migration in the 1950s, different models were developed to facilitate access to food in the face of food inflation in large cities, particularly Istanbul. The most prominent of these models were publicly led and operated discount stores and consumption cooperatives established in public institutions and large private sector enterprises (Öztürk, 2006). Also see (Yenal and Nizam, 2020) for a historical analysis of the seed politics in Turkey since the 1960s, and the 'quiet activism' that has paved the way for alternative movements since the 2000s.

[16] For a discussion on the milestones in the emergence and spread of AFNs in Turkey, see Karakaya (2016: 183-207). See also (Nizam, 2017; Nizam and Tatari, 2022; Tatari, 2022) for cases of geographical indications that posit new place-based alternatives.

Photo2: Noon at Atasehir fresh fruit and vegetable wholesale market (Photo credit: authors)

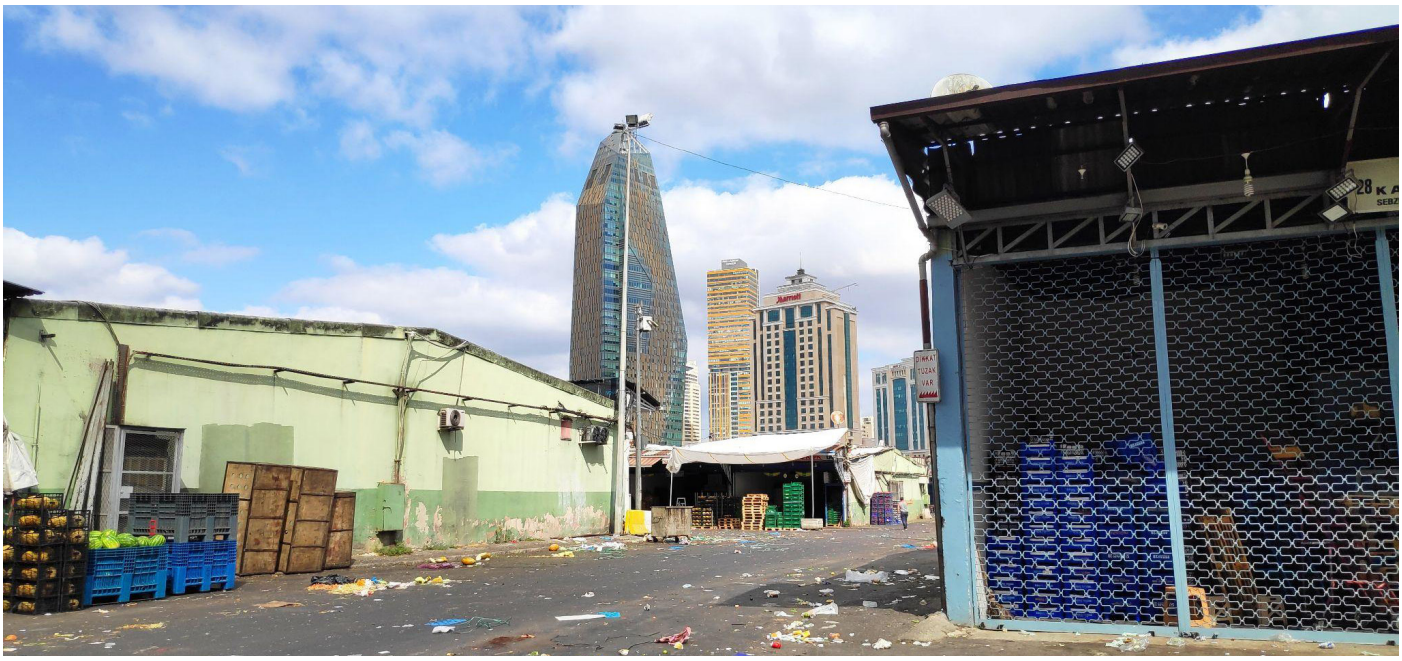


Photo 3: A stack of plastic containers in front of a shop in Bayrampasa Hali (Photo credit: authors)

In an average workplace, the number of employees is usually five but may increase in summer and autumn when trade is intense (IMM, 2015). In addition to fixed employees, the rickshaws and porters make up a significant part of the marketplace workforce, handling the products arriving at the store and carrying them to buyers' vehicles that cannot reach the store due to traffic. It is important to note that these rickshaws and porters are mostly composed of migrant and informal workers. Wholesale markets operate from night to morning. Trucks start to enter the wholesale marketplaces after 8pm, with most entrances being between 11 pm and midnight. The trade in the marketplaces starts to intensify after midnight as well and decreases with daylight. By noon, there is almost no one around (see Photo 2).

Given this structure and the daily routine of the marketplaces, we asked about the effects on it of the COVID-19 pandemic. The common emphasis of interviewees representing different actors was that the pandemic did not lead to serious problems in fresh fruit and vegetable provisioning. The next section delves into this conundrum.

Fieldwork, Analysis, and Findings

We had the opportunity to participate in two interconnected research projects in 2019 and 2020 on Istanbul's food provision systems (Yerküre, 2020, 2019), before embarking on this research. Both were products of the collaboration between Greenpeace Mediterranean and Yerküre Local Studies Scientific Research Cooperative. The first one is titled Turkey's Agrifood System and Istanbul's Food Provision System: Tendencies, Problems, Alternatives (in Turkish, Türkiye'nin Gıda Sistemi ve Istanbul'un Tedarik Zinciri: Egilimler, Sorunlar ve Alternatifler) and the second one is titled Feeding Istanbul: Alternatives and Opportunities with a Focus on Farmers' Markets (in Turkish, Istanbul Nasıl Beslenir?: Üretici Pazarları Odagında Alternatifler ve Olanaklar). While the former aimed to identify the limitations and major problems of Istanbul's food provision systems by situating them within the trajectories of the agrifood system in Turkey, the latter formulated policy suggestions for Istanbul by analysing good examples and practices (at the global, national, and Istanbul level) aimed at sustainable, fair, short, community-building, and local food provision systems.

Thanks to the research phases of these two projects, we became familiar with the actors in the food provision networks in Istanbul. When the COVID-19 pandemic hit in March 2020, and many concerns about food provisioning had increasingly become public by June 2020, we decided to design this research on the effects of the pandemic. As we knew from our previous research experience that the wholesale markets occupy a central place in Istanbul's fresh fruit and vegetable provision, we designed our research to investigate the effects of the pandemic on Istanbul's fresh fruit and vegetable provision networks and planned our fieldwork accordingly.

Our previous experience made it possible for us to implement a purposive sampling method. This in turn allowed us to select information-rich cases for the purposes of the research when it came to the actors in the wholesale markets, such as the only producer cooperative, the municipal authorities that were in charge, and the existing civil society organisations formed by the brokers. Besides these actors, we also used the snowball sampling method to interview brokers/merchants in the two wholesale markets, some of whom were also agricultural producers themselves. We also included in our research representatives of the relevant actors outside the wholesale marketplaces. While we used snowball sampling to reach stallholders in the local markets of Istanbul, we again used purposive sampling to interview 'modern' or 'organised' retail actors, representatives from the existing civil society organisations of 'traditional' retail actors and restaurants, and the alternative food networks.

In total, we interviewed 10 brokers/merchants in two wholesale markets, 3 agricultural producers, 4 'traditional' retail actors, 1 authorised local officer of an 'organised' retailer, 1 manager of a chain restaurant, and 1 representative of Tourism Restaurant Investors and Gastronomy Enterprises Association (TURYID), 2 representatives of brokers' associations (IMESKOM and AYMESKIAD), 1 representative of the stallholders' chamber, 1 representative of the agricultural engineers' chamber, 3 representatives of the municipality bodies operating in the wholesale markets, 4 members of consumer cooperatives and 1 activist of a neighbourhood solidarity initiative. Furthermore, we spent one day and night in each of the two public wholesale markets (Bayrampasa Hali and Atasehir Hali) and observed the working practices. We have also supported our qualitative analysis with the analysis of quantitative data based on the available statistics on the production, provisioning, and consumption of fresh fruit and vegetables in Istanbul.[17]

[17] For instance, the related data on production and supply were collected and analysed to assess the relative importance of different channels or market powers of various actors in fresh fruit and vegetable provisioning. Data on the prices of fresh fruit and vegetable products were similarly analysed to assess the impacts of the pandemic in terms of economic access to the related

We have focused our analysis on the wholesale marketplaces and used the other key actors' data as material for cross-checking. To do so, we categorised our interview data and fieldnotes according to the key actors' narratives and experiences of the impacts of the pandemic: 'traditional' retail actors (neighbourhood-based local marketplaces greengroceries, stand holders), 'organised' retail actors (chain markets, discount markets, supermarkets), HORECA (hotels, restaurants, cafes), alternative food networks (cooperatives, solidarity initiatives, etc.) and the wholesale marketplaces (brokers and merchants at the Bayrampasa Hali and Atasehir Hali). To understand the possible factors underlying the brokers' and merchants' experiences and narratives affirming that the pandemic had had no serious negative impact on the food provisioning channels (which is shared by other key actors except the HoReCa sector), we focused on two main questions during our analysis: (1) How was the pandemic itself managed in the wholesale markets so that the system appeared to be resilient? (2) What are the characteristic features of the provision channels and their actors that might lead to this rather unexpected 'resilience'?

Before going into the details of our findings/claims with respect to these questions, we would like to highlight that almost all our interviewees emphasised that 'structural problems' had characterised the provision channels and processes prior to the pandemic, as well as during and after it. Here is a list of those structural problems foregrounded during our fieldwork by the brokers and merchants: inappropriate locations of the wholesale marketplaces; the lack of cold chains; limited storage facilities; smallness of the shops, which also does not allow room for cold storage; traffic jams; long working hours and difficult working conditions; high prices and inflation; uncertainty regarding quantity and prices of products and hence unpredictability of prices; delays in payments and cash flows, and prolongation of maturity periods, which puts particularly small enterprises in jeopardy. The quotations below might be helpful to see how they phrased these problems:

> *There has been no increase or decrease in our product supply and sales. (...) However, we have already been in trouble, and we already had many problems such as difficulties in entry and exit, irregular and long working hours, etc. We don't have a warehouse, we sell daily. (Interview 22, shopkeeper at Bayrampasa Hali, 22.09.2020)*

> *This wholesale market needs to be moved out of here. There should be cold storage units in the shops. We have one here with three to four tons of capacity. But not everyone has this. It is needed for cherries etc. in the summer when it is very hot. It is a daily need or use. You throw away many items in the heat. (Interview 21, shopkeeper at Bayrampasa Hali, and representative of a professional association, 22.09.2020)*

> *What is needed is not being done at the wholesale markets. These hals do not suit Istanbul. I am ashamed to host and invite people. It is written in the law that laboratory, control etc. should be in place, but it doesn't work like that. (Interview 2, representative of a professional organisation, 24.06.2020)*

These narratives on the significant structural problems further intensified our curiosity regarding the bewildering question of why the fresh fruit and vegetable provisioning channels of Istanbul were not affected by the pandemic. We propose that the observed resilience can be attributed to two primary factors: (1) regulating pandemic conditions through non-regulation: provisioning actors navigating the pandemic and its measures through a lack of regulation and/or ineffective control and oversight in policy execution; and (2) mobility/transitivity: the adeptness and capacity of provisioning actors to rapidly adapt and switch between various provisioning channels and roles. The next two sub-sections discuss these two factors respectively.

Pandemic (non-)regulation in the wholesale markets

When we inquired in our interviews about the effects of the pandemic on the wholesale markets, people mentioned that only the first couple of weeks following the announcement of the first case in Turkey (11 March 2020) were in a sense an aberration from the routine of the wholesale markets. They talked about the rise in demand that peaked on 10 April, the last day before the first lockdown. 11 April was the only day

products. Based on our analysis of the available quantitative data, we have also prepared an infographic series titled 'Agricultural Production and Food Provision Systems of Istanbul with Infographics': https://yerkure.org/wp-content/uploads/2022/03/Yerkure-Koop.InfografiklerIeIstanbuldaTarimsalUretimGidaTedarikSistemleri.compr_.pdf

that the wholesale markets were closed in Istanbul. This period between 11 March and 11 April was typically narrated in the interviews as the period of 'shock and panic'.[18] Shopkeepers said that the prices increased during this period, yet this increase was temporary. A public officer in the Quality Control Department in the municipal office at Atasehir wholesale market expressed this panic as follows:

> *During the worst times of the pandemic, maybe the week around or before the first lockdown, the buyers did not even ask the price. Everyone was interested in getting the products no matter the price, all that arrived at the market was sold. (Interview 3, Officer, Atasehir, 17.09.2020)*

However, none of our informants told us that this price fluctuation continued. Another temporary increase they observed was the number of individual consumers who came to the wholesale market. In addition to the increase in demand and prices in the first couple of weeks, many shopkeepers mentioned a temporary shortage of porters and rickshaws in this period. They added that none of this lasted long; towards the end of April 2020, the wholesale market was back to 'normal' except for the traffic problem that lasted longer. Everyone highlighted that the biggest challenge of this period for the shopkeepers and buyers in the wholesale markets was the traffic jams.

> *The pandemic did not affect the food but the functioning of the marketplace, especially the vehicle density. For instance, Mondays, as the day after the weekend lockdown, became very crowded. People who would normally spend three hours here had to spend six to eight hours. This was mostly due to the problem of traffic. (Interview 6, Officer, Bayrampasa, 22.09.2020)*

> *We can say that the biggest effect of the pandemic here was the traffic jams. As part of the pandemic measures, the timetables for entry and exit have been changed. Before the marketplace was closed only for two hours every day; now it is closed for six hours for cleaning purposes. We also made changes to ensure that the ones who enter and the ones who exit do not encounter each other. This caused an immense increase in traffic problems, especially in the first couple of weeks. However, our records indicate that the number of vehicles entering and exiting the marketplace did not change. (Interview 7, Officer, Bayrampasa, 22.09.2020)*

When we asked whether the individuals had to share their HES code[19] (issued by the Turkish state to track the contagion) in the marketplace, the director answered that this would not be possible given the high number of people present in the marketplace. Given that most of the porters and rickshaws are informal labourers, the expectation of tracking everyone in the marketplace did not seem realistic to us either.

By the time we visited the wholesale markets in August, the traffic jam was also back to its normal pre-pandemic levels. During our visit, many told us that the pandemic regulations of the entry-exit timetables were no longer implemented. Except for the change in operation hours, almost nothing had changed for the actors in the marketplace during the pandemic.

The Istanbul Directorate of Fresh Fruit and Vegetable Wholesale Market took some new management decisions in its offices. For instance, employment shifts were reorganised so that only one or two employees were present in each municipal office every day. Yet the measures were not implemented in the same way in the marketplaces themselves. As the general secretary admitted during our interview in his office located on the upper floor of the marketplace: 'Precautions like social distancing were implemented in the offices but such a control is not really possible downstairs'. As we also observed in the marketplace, the use of masks and gloves was quite uncommon, and there were no special precautions regarding social distancing. The director stated that in the marketplace the municipality used large screens and audio announcements on social distancing and provided informative brochures and hygiene kits to all the shops. Yet it was difficult to observe whether the measurements were enforced.

No state or municipal authority was involved in a study of filiation inside the marketplaces.

[18] It is important to note that the marketplaces were closed due to the pandemic only on 11 April, which is also the underlying factor in the abovementioned peak of the demand on 10 April.

[19] Hayat Eve Sığar (HES) is an application obliged by the Turkish state during the pandemic.

> *Filiation officials [groups managed by the Ministry of Health] did not come here, probably they did not detect anyone here as the source of contagion. As far as we know, only one shop owner passed away due to COVID-19. (Interview 6, Officer, Bayrampasa, 22.09.2020)*

Some shopkeepers told us about the cases they heard of from their neighbours in the market, but each shop was responsible for taking care of their hospitalisation processes, and there was not a particular filiation study group that followed the cases inside the marketplace.

> *There is not any administrative unit keeping track of the pandemic in the marketplace. We also distributed masks and disinfectant; we keep constantly asking the shopkeepers about their needs. (Interview 4, Shopkeepers' Association, Atasehir, 17.09.2020)*

Most of our informants stated that COVID-19 somehow did not cause contagion in the marketplace. Some told us that a few shops they knew were closed for a couple of weeks when the owners or workers were infected.

Based on our interviews, it is clear that, apart from the change in entry-exit times in the marketplaces and a limited spread of the use of masks and disinfectants, the pandemic measures did not have a great impact on the functioning of the marketplaces. The measures taken were kept to a minimum and they had no legal sanction. Thus, the absence of a serious problem in the supply chains in this process was ensured by exempting the existing structure from the pandemic measures and the related restrictions as much as possible so that the actors could continue their 'normal' routine to a large extent. One of the main factors effective in the 'ineffectiveness' of the pandemic appears to have been the deliberate non-interventionist and non-regulatory role of the relevant public authorities and private sector actors, and/or their deliberate non-execution and non-control of the existing measures and procedures against the pandemic in the wholesale markets.

We think that this situation can be conceptualised as 'regulation by non-regulation'. While the pandemic-related regulations were implemented in Turkey, the agricultural sector as a whole and all the food provision networks were kept exempt from them. As they were declared exempt, the food provision actors were allowed to be mobile during curfews without being tracked through HES codes, unlike everyone else in Turkey who had to provide their HES code to travel. Hence, not only were the general pandemic regulations not implemented when it came to food-related activities in the country, there were also no regulations designed for the specific conditions in the wholesale marketplaces.

In this regard, it is possible to point out two dimensions implicit in this regulation by non-regulation. First, it is possible to talk about a consensus on not implementing the pandemic measures and restrictions in this area, so that the food supply would not be 'disrupted'. We interpret this consensus as a state of negligence of which the municipal bodies in charge of the wholesale markets, the wholesale market actors themselves (employees, merchants, brokers, suppliers, porters, etc.), and the consumers, were all part, albeit implicitly.[20] Secondly, it is possible to see this situation as an extension of the livelihood concerns of the small and medium-scale provision actors, and in this sense as their 'compulsory sacrifice'. In other words, the state of regulation by non-regulation can be seen as an indication that marketplace actors, who continued to work intensively under the threat of the pandemic, put their livelihood concerns before their health concerns.

Agility in the Food Provision Networks

During our research in the wholesale markets, one clear finding was that there was no significant shortage of any particular fresh fruit or vegetable during the first six months of the pandemic in 2020. *'There is not a significant change in the number of products bought and sold in the market; we can notice a slight decrease in some, but it is not likely that the reason is pandemic'*, the general secretary said.

[20] It is important to note that there are power relations underlying this consensus. State actors, including municipal authorities, did not design any particular regulations targeting the wholesale markets even though their position required them to do so. By contrast, the other actors in the markets did not have any alternative to simply being careful in their usual working circumstances.

While none of the shopkeepers mentioned any significant food shortage in the provision processes, they emphasised two main disruptions in the provision networks: 1) importation and exportation of the fruit and vegetables considered 'luxuries' (such as avocado and Mediterranean greens); and 2) food producers and intermediaries in the HoReCa (i.e., hotels, restaurants, cafes) sector were the most affected. Significant demand loss in HoReCa and export markets were underlined by our informants.[21] However, almost all brokers and merchants underlined that the intermediaries who used to work with the HoReCa industry were able to switch quickly to the sale towards other actors like markets and stallholders in local bazaars.

> *COVID-19 did not affect much. Only certain intermediaries had trouble like those working with hotels, restaurants, and airports. But the products that they had been buying and selling were bought by other intermediaries like supermarkets or stallholders in the local markets. (Interview 8, shopkeeper in Bayrampasa Wholesale Market, Istanbul, 22.09.2020)*

We observed that this mobility or transitivity between different food provision networks happened much faster in Istanbul than in Western Europe in particular (e.g., IPES, 2020), where the differentiation of food markets (wholesale, HoReCa, retail) led to temporary shortages due to the adaptation of provision networks to the effects of the measures taken against the pandemic. One important underlying reason is that the legal regulations, certification mechanisms, and production-packaging practices do not really differentiate between sales targeting HoReCa and other retail channels such as supermarket chains. As wholesalers in the marketplace and stallholders at local markets (pazarcılar) expressed in our interviews, it was easy for the seller to find a new buyer outside the HoReCa industry. Although some chains that were heavily affected resulted in a marketing problem for the producers (i.e. they were not able to sell their products due to the disappearance of the marketing channels with the pandemic; cf., Keyder et al., 2020), our research in Istanbul wholesale markets suggests that the intermediaries, which used to sell to the HoReCa industry before the pandemic, were able to sell to other intermediaries or buyers in the wholesale market.

The wholesale markets of Istanbul are still places where all the buyers (HoReCa, stallholders in the local markets, intermediaries for groceries and other retail, and supermarkets) meet and choose among various intermediaries. However, since the supermarkets choose to bypass the wholesale markets,[22] the majority of the wholesalers consist of small and medium-sized intermediary actors.

> *Most of the big supermarkets are not present here; there are only one or two offices here that work with these supermarkets. (Interview 7, Officer, Bayrampasa, 22.09.2020)*

> *We usually sell to the supermarkets that have one or two branches. The big ones take care of their own provisioning, they have many sales representatives in different areas of production and many distribution centres outside the wholesale markets. (Interview 9, Shopkeeper, Bayrampasa, 22.09.2020)*

> *60 to 70% of the buyers here are stallholders in local markets and 10 to 15% are greengrocers. Then there are intermediaries that buy the different products here in order to sell or distribute to the restaurants or small grocery shops. Our guess is that there are very few supermarkets as buyers in the wholesale market; most of the supermarkets have their own warehouses and provisioning networks. (Interview 3, Officer, Atasehir, 17.09.2020)*

This composition of the traders allowed for transitivity between networks, which apparently became a resilience factor during the pandemic. Once we focused more on the stories demonstrating these quick shifts between networks, we realised that this characteristic of transitivity in Istanbul's fresh fruit and vegetable provision system results not only from the easy shift of the products between provisioning channels, but also

[21] The HoReCa sector seemed to posit a more significant problem in the wholesale markets. An important effect of the pandemic concerning the HoReCa actors was the rise of credit use and the prolonged periods of payments. However, it is worth nothing that the sector seems to play only a marginal role in the provisioning networks, since, as stated in our interviews, 99% of the products sold at the wholesale markets end up with domestic consumers.

[22] There are not any studies on the impact of COVID-19 on the supermarkets in Turkey. Yet our findings suggest that the supermarkets did not experience shortages; on the contrary, they faced an increase in demand due to hygiene concerns, and they were able to buy from the wholesale markets when they needed extra supplies of fresh fruit and vegetables.

from the easy shift of the traders between different positions in the provisioning networks. In other words, the same actors may occupy multiple positions in the supply chain, and this multiple positionalities is also crucial for the seeming resilience of the provisioning networks.

In our interviews, we encountered many actors who were simultaneously producers, brokers, merchants, and stallholders. Many intermediaries told us that their extended families continued to be agricultural producers. A significant number of wholesalers in the marketplace used to be stallholders in local markets. This allowed them to closely follow the patterns of local markets thanks to their contacts: either through members of their extended families who continued to be stallholders, or through the stallholders who had been their regular customers in the wholesale market for many years. The case of Nejdet,[23] which is not an exception among our interviewees, illustrates this point. Nejdet had had a shop in Bayrampasa Wholesale Market for 25 years. He defined his shop as a continuation of 'father-uncle occupation'. His brothers and other relatives were also in this business and were running different shops in the marketplace. Before opening his shop, he had worked as a stallholder in local markets, selling lemons, and later he also became a merchant. With this background, he confidently explained:

> *That's why we know this business well. To supply quality products cheaply is the key. We bring products from Çanakkale, Bursa, Antalya, Izmir, Konya, etc. [His brothers are in some of these places, and he goes to other places during the harvest season, stays there, and buys crops based on his own 'fieldwork'.] We are better in the regions where my brothers are. We have connections. There are producers in other regions that we have been working with for a long time. (Interview 9, Shopkeeper, Bayrampasa, 22.09.2020)*

Another pattern we observed was that some wholesalers managed a group of supermarkets in particular districts of Istanbul. While large supermarket chains choose to use their own warehouses and bypass the transactions in the wholesale markets, they might also choose to outsource the management of their fresh fruit and vegetable sections. Ahmet's case is illustrative of this. Ahmet is 65 years old, and he is also a producer in Çanakkale. He contracts with other producers in Çanakkale and buys their products to sell to certain supermarkets in Istanbul. Given these connections, he states that 'The shopkeepers of the wholesale markets (halciler) know what is grown in which region and of what quality.' (Interview 8, Shopkeeper, Bayrampasa, 22.09.2020)

All these patterns indicate that the merchants in the wholesale marketplaces are organically well connected to the different channels of fresh fruit and vegetable retail trade in Istanbul. This transitivity or, better put, connectivity, which allows intermediaries (brokers and merchants, i.e. shopkeepers) in the wholesale markets to follow both the production and retail patterns closely, enables them to be familiar with the totality of the provision system, to be aware of the expectations, and to predict possible price changes, food shortages or buyer reactions in the retail markets. Hence, we argue that the seeming resilience of Istanbul's fresh fruit and vegetable provision system during the pandemic also relied on the agility of actors, based on their capacity to shift among various channels and their multiple positionalities within these channels.

Conclusion/Discussion: The neoliberal resilience and/or the resilience of the capitalist agrifood system

This article focused on the provisioning of fresh fruit and vegetables in Istanbul during the first six months of the COVID-19 pandemic in 2020. The starting point for the researchers was the unexpected resilience narratives of the provisioning networks. After providing the related conceptual underpinnings of the study, we first described the detailed picture of fresh fruit and vegetable provisioning networks, and the place of wholesale markets in them. We then analysed the ways in which the regulations to control the pandemic affected the wholesale markets. Our analysis suggests two main reasons behind the seeming resilience of the provisioning networks: non-regulation of the wholesale markets, and agility of the actors in the provisioning networks owing to their mobility, transitivity, and connectivity.

[23] Pseudonyms are used throughout the article for our interviewees.

First, we argued that the daily routines and operations under the pandemic conditions revealed two dimensions implicit in what we called 'regulation by non-regulation'. On the one hand, while the existing pandemic measures and restrictions were not implemented in this area, no new regulations were designed for these markets. On the other hand, this state of negligence meant that the wholesale market actors continued to work intensively during the pandemic by putting their livelihood concerns before their health concerns. Secondly, our research suggested that the actors in the provisioning networks were able to switch quickly between different sectors and positions. Almost all the brokers and merchants we spoke to emphasised that the intermediaries who used to work with industries affected negatively by the pandemic, such as hotels and restaurants, found new buyers from other sectors. In addition to the transitivity of the products and sectors, we also found that the wholesale market actors are organically connected, especially to the producers and stallholders in local markets. This allowed them to be familiar with the totality of the provision networks and with the expectations and ongoing patterns in the production and retail trade, which in turn contributed to their manoeuvres in the wholesale market.

As indicated in the second section, we suggest that the apparent resilience of the fresh fruit and vegetable provision systems of Istanbul in the COVID-19 context can be discussed in relation to the concept of neoliberal resilience. Combining the two trajectories of the concept, we think that neoliberal resilience can be seen as an important conceptual tool to explore the intricate relationships between adaptability and critique – in other words, the dialectical tension between neoliberalism's adaptive strategies and the socio-ecological challenges it creates and faces.

We interpret the two main pillars – regulation by non-regulation, and mobility/transitivity of the small and medium scale provision actors – underlying the apparent resilience of the fresh fruit and vegetable provisioning networks in the face of the COVID-19 pandemic through this dual meaning of neoliberal resilience. Regulation by non-regulation signifies the endurance of the prevailing neoliberal agrifood system at the expense of the well-being and working conditions of those involved in wholesale markets, who were compelled to carry on with business as usual due to a lack of alternatives. The agility of small and medium-scale provisioning actors underscores the informal ties among them, deemed vital for the resilience of provisioning networks, despite their devaluation by the neoliberal discourse and practices.

Within this context, we consider our interviewees' opinion that they did not experience a significant problem due to the pandemic, also in relation to their emphasis that they were already dealing with serious structural problems before the pandemic. In this regard, it can be argued that neither regulation by non-regulation, nor the agility of the provision actors through mobility, is sustainable. Both factors can be seen as forms of a lack of public regulation with regard to basic human rights like decent living and working conditions. They can also be seen as the primary mechanisms through which the small and medium-scale provision actors are connected to the market in a way that continuously reproduces their fragility and insecurity.[24]

This, we believe, also implies the significance of the interconnections between diverse economic models and relations that are variously (and mostly pejoratively) labelled as 'informal', 'traditional', 'disorganised', etc., and the capitalist provision channels labelled, approvingly, as 'formal', 'modern', 'organised', etc.[25] That is to say the making of the commodity relations and capitalist provision systems[26] on the basis of non-commodity (or at least less commoditised) social relations (and vice versa) – for example, subsistence relations based on care, reproductive labour, family and kinship, communal relations, etc. (cf., Mies and Bennholdt-Thomsen, 2000; Gibson-Graham, 2006, 2008) – require more attention and further study in our case as well.

[24] Here one can also recall Walker's (2020: 11) statement that 'resilience is not always good and desirable', and, as examples for such forms of resilience, he lists 'evil dictatorships, salinized landscapes, and psychotic states in people'. The resilience of capitalism in general, and capitalist agrifood relations in particular, can also be discussed in relation to Walker's (2020) point.

[25] We owe special thanks to the anonymous reviewer, who drew our attention to this point.

[26] We understand this process akin to 'the making of the "commodity-intensive society" [Illich, 1981] where "needs" are increasingly defined and met in terms of mass-produced packaged goods and services' (Atasoy, 2013: 548).

Here resilience seems to appear as both a paradox and a multifaceted nexus. The paradox lies in the dual role of resilience as both a defensive shield against 'external' challenges and a strategic tool for neoliberalism's 'internal' agenda. It underscores the tension between the adaptive strength of neoliberalism and the critical discourse that reveals its instrumental use of resilience. The 'nexus' refers to the fact that neoliberal resilience emerges from a complex interplay of interconnected networks of factors, forming a nexus of 'internal' adaptations and 'external' influences.

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Food Movements, Resistance, and new digital repertoires in (post-)pandemic times

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Abstract

While the Covid-19 pandemic demonstrated the vulnerability of the global food system, new resilient repertoires of collective action also showed how to overcome the multiple dimensions of this crisis. Food movements played an important role in creating innovative alternatives for a more just food system. In Germany, the pandemic affected and continues to affect agri-food relations. This article argues that digital communication was an important tool to connect people for purposes beyond sharing food and supporting food-related needs. Social media became a virtual platform for social mobilisation and innovation around food alternatives during and in a (post-) pandemic world. Two relevant actors in the German food mobilisation were the protest campaign Wir haben es satt! and the food movement Slow Food Germany. The work presented here is based on digital ethnographies and an analysis of documents from the period 2020-2022. The analysis focuses on how these two movements dealt with the crisis scenario, in relation to three classic levels of protest and social movement research: (1) actor level; (2) action level; and (3) transformation level. The comparison shows that both movements developed innovative digital and hybrid repertoires of collective action, and fostered coalitions between actors fighting for a socio-ecological transformation of the food system.

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Introduction

The Covid-19 pandemic – exacerbated in many places by the consequences of the climate emergency, the biodiversity crisis, and the Russian war in Ukraine – revealed the vulnerability of the current food system. Inequalities and injustices in global value chains, local food shortages and food insecurity became topical once again and part of global and German political debates (Birner et al., 2023; Open Society, 2020). These interconnected crises affected people, animals, nature and the environment in various dimensions and at different scales (Sanderson Bellamy et al., 2021). In particular, neo-colonial continuities of oppression, exploitation, and power inequalities related to food production and access to healthy and good food became visible in various scenarios in Germany – reflecting the consequences of modern neo-liberal capitalist and patriarchal social structures (Brückner et al., 2021).

Such moments of rupture are crucial starting points for social mobilisation and counter-action by activists and a mobilised civil society. In this sense, this article considers how social movements adapted and mobilised in the face of the Covid-19 pandemic. Before this crisis, there were already solutions and ideas to address food inequality and insecurity in different contexts; nevertheless, new solidarity and repertoires of collective action emerged, showing how the multiple dimensions of this crisis could be overcome (Sanderson Bellamy et al., 2021). In this paper, we argue that digital communication was a significant tool to connect and mobilise people politically in Germany, and not only to share food, help one another with food supplies, and exchange experiences and ideas about where to find healthy food and how to prepare it. Social media became a fundamental platform for agri-food relations, creating new connections and collaborations between food producers, retailers and consumers (Hidayah et al., 2021). Furthermore, digital communication and action fostered social mobilisation and innovation around food alternatives during the pandemic and in a (post-) pandemic world (Lewis, 2018; Rohlinger and Corrigall-Brown, 2018). This article examines the new repertoires developed by two relevant actors in the German food mobilisation: the protest campaign Wir haben es satt! (WHES) [We are fed up!] and the food movement Slow Food Germany (SFD). Both demonstrated innovative digital means and hybrid repertoires of collective action. They also built networks of solidarity with other actors to foster a coalition of food movements and initiatives fighting for a socio-ecological transformation of the German food system.

The paper draws on ethnographic work and documentary analysis (see more in Section 2.3). We present the results of our analysis according to three classical levels of protest and social movement research (Calderón and Castells, 2020; Castells, 2007, 2017; Milan, 2015; Rohlinger and Corrigall- Brown, 2018; Van Dyke and Amos, 2017): (1) actor level; (2) action level; and (3) transformation level. First, we present the actors of the movements, but remain at a descriptive level. Second, we examine the practices with a focus on the new digital repertoires of collective action (Selander and Jarvenpaa, 2016). Third, on the transformation level, we examine the demands and goals of the actors. The last two axes form the basis of the final comparison between SFD and WHES.

This article is divided into five sections. First, after this brief introduction, we discuss the key concepts of this work, such as food movements and the new repertoires of collective action. Second, we present the state of the art, situate it in the German context, and then introduce our studied cases and outline the methodology. Third, we discuss the findings on innovative repertoires of collective action from the first case study, SFD. Fourth, the protest campaign WHES is analysed to trace the impact of the Covid- 19 pandemic on their collective actions. Finally, a comparison of the two cases is made to identify and discuss similarities and differences between their innovative repertoires.

Food movements and the Covid-19 pandemic

The global food system and its agricultural economy are characterised by power dynamics and hierarchies, in which food plays a critical role in generating or perpetuating multiple dimensions of inequality (Friedmann,

1982, 1993; Motta, 2021b; Patel, 2007). Moreover, changes in the food system are closely linked to entangled global social and environmental crises, given the scale and speed of such changes and the inequalities they reinforce. The disruptions caused by these crises hit certain groups of people the hardest, leading to an increase in social, gender, generational and ethnic inequalities (Della Porta, 2021). Additionally, the Covid-19 pandemic was more than a public health emergency; it can be described as a triple crisis, with health, environmental and economic dimensions (Delanty, 2021). These instances of disruption provide critical opportunities for social mobilisation around food.

Social movements are advocating for a fundamental transformation of the food system at local, national, and international levels. The umbrella term "Food Movements" (Motta, 2021a) includes peasant movements, food sovereignty movements, alternative food networks (AFNs) and initiatives, rural feminist movements, food justice movements, and agroecological movements, and should be understood as an analytical concept. However, the food movement concept is not intended to cover all the aims and historical aspects of different food movements in their specific contexts. Rather, it seeks to bring together a wide range of actors who are actively engaged in transforming food systems. Social innovations and mobilisations around food offer a unique opportunity to witness and analyse social transformation, as they play an active role in changing the landscape of food politics and food systems (Alkon and Agyeman, 2011; Allen, 2010; Counihan and Siniscalchi, 2013; Goodman et al., 2012; Guthman, 2008; Holt Giménez and Shattuck, 2011; Motta, 2021a).

Food movements have mobilised around concepts such as food sovereignty, food democracy, and food justice, among others (Alkon and Agyeman, 2011; Guthman, 2011; La Via Campesina, n.d.; Slocum, 2007). Despite the different approaches and agendas within the heterogeneity of food movements, they share a rejection of the current neo-colonial and capitalist food system (Holt Giménez and Shattuck, 2011; Holt-Gimenez and Patel, 2012) and offer alternative practices to address the growing structural challenges at different scales, drawing on local and regional strategies and knowledge (Jarosz, 2014). These discourses and practices travel across transnational networks, but they are also specific to their contexts. Food-related discourses provide a means of understanding local struggles, their transformative potential, the scales at which they can operate, and their ability to transcend spatial and social boundaries (Motta, 2021a).

Food movements, like other social movements, use traditional repertoires of protest, such as demonstrating and occupying the streets; but they also employ non-traditional ones, such as using everyday practices and alternative economic models to shape their strategies (Fladvad, 2018; Gibson- Graham, 2008). Such practices often involve community-based and equitable food production, distribution, and allocation, and recognise the role of food as a unifying element between people and a relationship builder between humans, animals, and nature (Wichterich, 2002).

The concept of "Food Inequalities" shaped by Renata Motta (2021a) shows how multiple structural forces (economic, political, environmental, cultural, epistemological, etc.) are always interconnected with plural and intersectional inequalities (gender, race, class, etc.) and need to be analysed from a multi-scalar and relational perspective. Examining the complex interplay of structural, intersectional, and spatial inequalities addressed by food movements guides us in identifying approaches and windows of opportunity for social-ecological transformations of the food system. Therefore, when analysing two movements during the Covid-19 crisis in Germany, it is essential to be aware of the history and discourses specific to their context (see more in Section 2.2).

New repertoires of collective action: insights from food movements

Today, social mobilisation is strongly influenced by digitalisation and has thus shifted discussions to areas and people that would otherwise be difficult to reach with more traditional protest actions (Van Laer and Van Aelst, 2013). This hybrid nature of digital protest actions and communication brings out a new multidimensionality of the public sphere (Calderón and Castells, 2020). It reflects the relational nature and embedded power hierarchies; the public sphere is not a neutral place, but a network of constantly changing power relations,

with many different temporalities and spheres of negotiation (Fuchs, 2022). Building on Tilly's (1977) concept of the collective action repertoire as a distinct mix of tactics and strategies developed and used collectively by protest groups to enforce demands on individuals or groups, Van Laer and Van Aelst (2013) analysed how the internet has influenced the development of this collective action repertoire within social movements seeking social and political
change.

> *On the one hand, the Internet facilitates and supports (traditional) offline collective action in terms of organisation, mobilisation and transnationalization and, on the other hand, it creates new modes of collective action. The Internet has indeed not only supported traditional offline social movement actions such as the classical street demonstrations and made them more transnational, but is also used to set up new forms of online protest activities to create online modes of existing offline protest actions. By doing so the Internet has expanded and complemented today's social movement 'repertoires of collective action' [Tilly 1984; McAdam et al. 2001] (Van Laer and Van Aelst, 2013: 231).*

Digital repertoires of collective action refer to the strategies and tactics that social movements use in the digital realm to advance their goals and mobilise support (Chadwick, 2007). Common elements of digital repertoires of collective action include social media campaigns, online petitions, hacktivism, email bombs, virtual sit-ins and protest websites, etc. (Van Laer & Van Aelst, 2013). These digital repertoires have become an integral part of contemporary social movements, allowing for rapid communication, the mobilisation of global support, and the amplification of messages – making it easier for movements to influence public opinion and effect change. However, they also present their own set of challenges and ethical considerations, such as the spread of misinformation and the potential for surveillance and repression by authorities, as well as the issue of unequal access, known as the digital divide (Norris, 2001).

In order to look at the changes in the repertoires of collective action due to the pandemic, it is necessary to compare the main tactics and strategies of the two food movements before, during and after the crisis. In this paper, digital or hybrid repertoires were specifically identified and analysed as the main formats of collective action, due to contact restrictions and bans on street mobilisation. To be able to localize these concepts and debates, we focus now on the two case studies discussed in this paper.

Food movements in Germany and the Covid-19 pandemic

Slow Food was one of the first food movements in Europe, a new social movement in the sense of Castells (2010). The movement seeks to transform the agro-industrial food system because it is unsustainable, socially unjust, and produces nutritionally unsafe food. It calls for a relocalization of the food system (Allen, 2010; Goodman et al., 2012). Slow Food began in northern Italy as a way of reaffirming local food culture and resisting the homogenisation promoted by changes in the food system. The group of founders wanted to bring the pleasure of eating good food and drinking good wine, as part of the local culture, into political engagement within the Communist and Socialist parties. Slow Food has many facets, which makes it difficult to define. It is a social movement but it also acts as an NGO, a foundation, and even an event organizer and business owner (Siniscalchi, 2013). In this paper we consider it as a social movement, something that can encompass all these other aspects, since it is an organisation that seeks social change through mobilisation (Touraine, 1985). Slow Food Germany (SFD) was founded in 1992. It is the first and one of the strongest national associations in the movement outside of Italy, with around 11,000 members who work in local chapters called convivium. It began as a place where people who liked good food, mainly from Italy, could meet and eat together. Despite its hedonistic aspect, in the last decade the SFD has taken a more political direction, engaging in debates on social issues surrounding agri-food relations and forging various alliances.

The second case study is the collective protest action Wir haben es satt! (WHES). Organised in January every year since 2011, in Berlin, it brings together food movements (including Slow Food Germany) in the coalition Meine Landwirtschaft [My agriculture]. Since its inception, more than 55 supporting food movements have joined the coalition, which is responsible for gathering and preparing a campaign and a large protest march. The diversity of its activists – farmers, environmental movements, animal welfare organisations, global justice

movements, international development NGOs, etc. – constitutes a broad alliance demanding an agrarian and food turnaround, that is, an agrarian, ecological and socially more just, animal- and environmentally-friendly agrarian and food system in Germany and worldwide (Meinecke et al., 2021). The coalition is an important critic of the hegemonic German food system, which petitions the federal government to change its socially unjust and unsustainable food policies. It chooses a different slogan every year to address specific problems in the German system, such as the monopolisation of supermarkets, the regulation of GMOs, the decline of small-scale farming, the violent conditions of animal husbandry, and so on. On the one hand, the heterogeneity of the actors in the coalition can be seen as its greatest potential, as it brings together different perspectives and agendas. As a result, actors join forces and, as a "socio-ecological coalition" (Motta, 2022), have a stronger political voice and influence on food policy. On the other hand, alliance building is also structured by differences and power struggles.

Placing these two movements in the context of the pandemic and related crises in Germany, it becomes clear that the discourses around food in German society have changed, as we will show and discuss throughout this paper. Suddenly, certain foods became temporarily unavailable, food prices began to rise, and some people did not have access to good or sufficient food. As the first waves of Covid-19 hit Germany, food insecurity suddenly became part of the public concerns of the German population, rather than being associated with distant problems in the so-called 'Global South' and 'development programme'. According to the Federal Statistical Office (2022), consumer food price inflation was over 20% in 2022. This has exacerbated the food situation of people who already live in poverty and/or are threatened by poverty and "first world hunger" (Riches and Silvasti, 2014). While food security was previously invisible in many places, it has now become clear that it also exists in Germany; in 2021, an estimated 12.5 million people in Germany were at least temporarily affected (Bundestag, 2022). According to the FAO, 1.1 per cent of German households are severely food insecure, i.e. are exposed to a "high probability of reduced food intake and therefore can lead to more severe forms of undernutrition, including hunger" (FAO, 2021). In recent political debates and discourses, many actors from the political sphere and civil society have spoken of food poverty – Ernährungsarmut in German – when referring to the interrelations between socio-economic and class struggles and the access to good and healthy food in the German context (Biesalski, 2021; Birner et al., 2023; Pfeiffer, 2014; Von Normann, 2011). Unlike most concepts of food insecurity, this one distinguishes between "material and social food poverty" (Feichtinger, 1996), specifically targeting inequalities and deprivation at the societal level.

SFD's collective actions can be grouped around three axes: education of children and young people, including awareness-raising campaigns; biodiversity, with projects to promote the commercial value of local food products threatened by homogenisation; and advocacy, influencing public policies at local, national and European level. Environmental issues, the consumption of locally produced food and animal welfare are common topics of discussion. Slow Food is a consumer movement that brings together different components of the food system, from producers to consumers, through chefs and other economic actors in the food sector, academics and policy makers (Kalix Garcia, 2023). Although there are different lines of collective action in SFD, with some groups being more gourmet and others more political, they have one thing in common: their activities are based on meeting around food – either in fancy restaurants or at DIY (do it yourself) picnics (Kalix Garcia, 2023). Before the pandemic, their digital repertoire of collective action was still limited, mainly to online campaigns at the European level.

The WHES protest, on the other hand, emerged as a counter-mobilisation (Fraser, 2017; Motta, 2022) against the annual agricultural fair Green Week in the German capital. WHES takes place on the weekend before the fair and is the main collective action of the Meine Landwirtschaft coalition. As mentioned above, this is a broad coalition that includes peasants, environmentalists, animal welfare groups, global justice activists, and international development NGOs. They campaign for a more equitable, ecologically sound, socially just, animal-friendly, and environmentally sustainable agricultural and food system. Over the years, the demonstration has mobilised between 10,000 and 50,000 people from across Germany. Before the pandemic, in January 2020, 27,000 people occupied the streets of Berlin. The traditional repertoire of collective action of the

Meine Landwirtschaft coalition includes personal interaction, such as workshops, street marches and political actions with visual statements at political landmarks. Before the pandemic, it already had a digital repertoire of collective action, but like the SFD, was limited to smaller online campaigns and photo actions.

Methodological approach

The analysis of what we call digital or hybrid repertoires of collective action of food movements in Germany is based on digital ethnography (Hine, 2000; Pink et al., 2016; Postill and Pink, 2012), followed by qualitative content analysis (Kuckartz and Rädiker, 2022; Mayring, 2022). Digital ethnography is a research method used to study and understand the behaviours, practices, and cultures of online communities and digital spaces (Hine, 2000; Pink et al., 2016). By adapting traditional ethnographic research techniques, such as participant observation, data collection, field notes and interviews, we conducted our digital ethnographies with the movements and their respective actors.

Ethical considerations and our reflexivity as researchers play an important role in the work presented here, especially when dealing with personal information, consent, and privacy concerns.[1] Our digital ethnographies followed SFD and WHES over a period of almost two years (2020-2022) with varying degrees of intensity, focusing mainly on key moments of protest action for this first phase of fieldwork and data collection. In total, we collected material from 7 different online campaigns, 5 hybrid protest actions and 2 hybrid collective experiences. In addition, Lea Zentgraf participated in the two major hybrid protests in 2021 and 2022, accompanying activists online and on the streets, and Thalita Kalix participated in the hybrid collective experiences. In a second phase, the resulting data was analysed with deductive categories following the methodology of Mayring (2022), and systematised along different axes of food inequalities (Motta, 2021a). Conducting a comparative ethnography between social movements of different scales, and doing so during the pandemic, posed a number of challenges. It meant that, as researchers, we had to apply more tools to deal with the complexities of each reality and make them comparable (Castañeda Salgado, 2010; de Suremain, 2019). On the other hand, the data generated by such contextual diversity is particularly rich and allows for a more meaningful comparative analysis. It is crucial to always keep in mind that these are localised cases and spatialities, that the aim is not to generalise, but to understand exactly their particularities and to analyse how they can communicate, coexist or even complement each other. As Conway argues:

> *The recognition and valorization of social struggles at various scales and arising from distinct places enacts an expanding politics of diversity and recognition that acknowledges the multiplicity of alternative visions, values and world views, and the presence of existing "other worlds." Such a spatial praxis instantiates relations among social movements at different scales that are more horizontal and less hierarchical and are characterised by greater reciprocity, dialogue, mutual respect, and recognition. It invokes an alternative socio-spatial imaginary of both the global and the movement as rooted in places/locales that are dispersed, diverse, and increasingly densely networked in a huge variety of ways, rather than as single and unitary (Conway, 2008: 223).*

By comparing the two cases, this paper shows how two different social movements adapted and mobilised in the face of the Covid-19 pandemic, helping to identify which repertoires of collective action can be drivers of social change in the face of crisis. Although SFD and Meine Landwirtschaft communicate, coexist and complement each other, they are very different in terms of history, organisational structures, political agendas and protest repertoires. We argue that by comparing a more established and traditional food movement (SFD) and a more heterogeneous socio-ecological coalition (WHES), it is possible to identify adaptations at different scales. As we have clarified and discussed the theoretical framework, the context of the cases studied

[1] In this sense, we also want to reflect briefly on our own positionality and potential biases: Thalita Kalix's doctoral research brought her into contact with activists and leaders in *SFD* before the pandemic and the shift of many collective actions to new digital and hybrid formats. As such, her interactions in the digital realm were shaped and facilitated by her previous experiences and collaborations with the movement. The data presented here on *WHES* is part of a larger research project within the Junior Research Group *Food for Justice: Power, Politics and Food Inequalities* (Motta, 2021a). Some findings have already been published so far, including on the coalition politics (Motta, 2022) and data from a protest survey (Meinecke et al., 2021). Lea Zentgraf joined this collaborative research in 2021 to organise the data collection and analysis of digital repertoires. Her research builds on the contacts and previous studies of the research group, which also facilitated her access to the field.

here and the methodological approaches used, we move on to analysing the two movements: Slow Food Germany and Wir Haben es Satt!

Slow Food Germany

As noted above, while the different forms of collective engagement within SFD may vary, with some groups leaning towards gourmet experiences and others more towards political engagement, they have one thing in common: their activities revolve around gatherings focused on food, whether in upscale restaurants or at informal picnics. When the Covid-19 pandemic swept through Germany in March 2020, the transition to online activities was a major challenge for SFD.
Everything goes online

Slow Food Youth Germany (SFY), the only chapter whose members are spread across the country rather than localised, brings together around 200 activists aged between 18 and 35 and has been quicker to adapt its repertoire to digital formats. Previously, the young activists, living in different parts of the country, met twice a year for a weekend and were in touch by phone or video for specific projects. When the pandemic hit, they not only changed the communication platform, setting up a Telegram group and monthly Zoom meetings, but were also able to mobilise and create new ways of sustaining their activism. In fact, the group met more often than usual during the first months of the pandemic. The digital sphere became fundamental not only to mobilise but also to strengthen internal communication. In many social movements, these channels were seen to play a crucial role in facilitating rapid response and networking in the context of a dynamic pandemic situation, particularly through features such as chat groups (Kavada, 2022; Mayer et al., 2021). In Zoom meetings, SFY members shared their experiences and struggles in their work, their lives, and their cities, creating new networks of solidarity across scales. The meetings were structured and planned by an organising team that changed each time and always had an agenda, with strategies that the group had already used before.

There were several collective actions and campaigns forged by SFY in 2020. The first was #SlowFoodSolidarity #StayHomeStaySlow, which aimed to encourage people to stay at home whenever possible and to support those who could not do so. Within the group there were some workers, such as bakers and farmers, who had to continue working, and others, also in the food sector, who lost their jobs. However, many members were able to work from home. Solidarity would mean looking for ways to help producers and food workers get through this crisis, as well as solidarity with everyone who stayed at home to help control the virus.

The first traditional collective action they had to adapt from offline to online was the World Disco Soup Day, as early as April 2020. The event has taken place every year since 2017 on an international level, with each location promoting its Disco Soup (Schnippeldisko) at the same time. The format was created in Berlin in 2011 as part of the first WHES protest campaign and was taken up internationally by SFY. This is a big party to raise awareness about food waste. It combines the collective preparation of a meal with food that would otherwise go to waste, with music, performances and talks about food waste and other problems in the current food system. In 2020, the challenge was to take it into the digital realm. The German edition took place on Zoom, with different 'rooms' for the dozens of participants to interact while cooking at home. There was also a live broadcast on YouTube of the Zoom collective room, with music and some talks by Slow Food activists and partner movements and organisations, such as representatives from Fridays for the Future.

Figure 1. *German participation on the World Disco Soup Day. "Live from your own four walls", started with activists hitting their pots and pans in an "Alarm for the food change".*

Source: @SlowFoodDeutschland YouTube reproduction

The format was repeated in 2021 and 2022, still under the pandemic restrictions, with some changes. With more time to prepare for it, and the experience of 2020, discussion groups and workshops were planned to make the event more engaging. However, in 2023, with the end of the pandemic's restrictions, the event reverted to an in-person format.

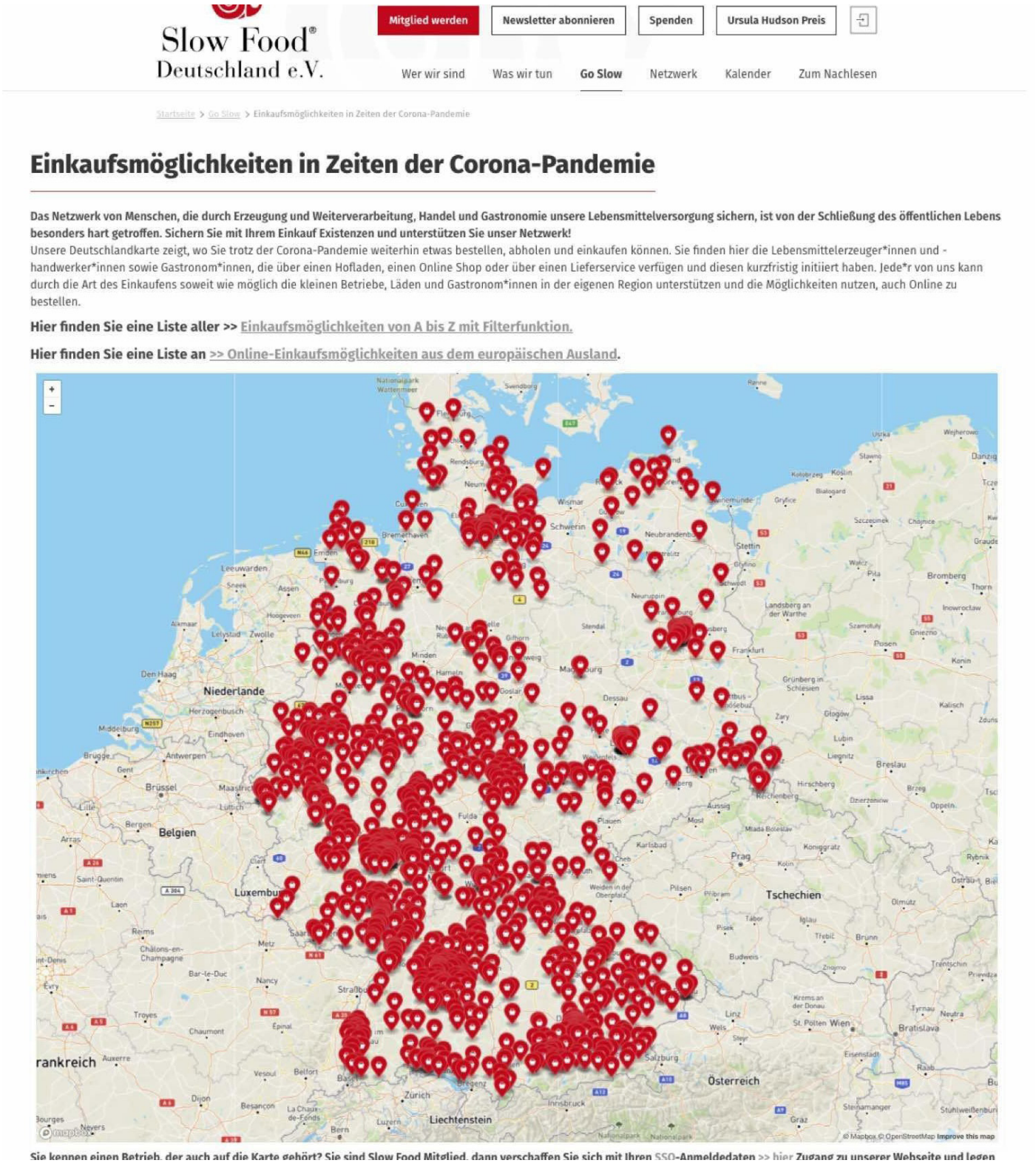
New formats, same scope: SFD Map and Taste@Home

As well as adapting existing events to take place online, new collective actions were created within the SFD during the pandemic. One of the first was a map on the SFD website where people could find and contact food producers involved in the movement across the country. The project started a few weeks after the start of the pandemic, as it took some time to create and select participants. Only companies associated with the movement were eligible to appear on the map, which was hosted on the SFD website. This was done to attract curious people to the food movement and to raise general interest in its agenda. Eventually, the map became a permanent feature of the SFD website, serving as a tool to facilitate interactions between producers and consumers.

New to the movement's repertoire of collective action was the organisation of online tastings. This format not only allowed consumers to have 'live' contact with producers, but also widened the range of people who were familiar with the movement. At local level, SFY Berlin launched a project called Taste@Home, where a selection of products such as bread, cheese, antipasti, and so on from the Berlin and Brandenburg area were assembled into a tasting box. This was then distributed by bicycle couriers on a specific date. On the same day, they organised a tasting dinner via Zoom. The decision on who would take part in the project was based on the producers' need for support because, as a member explained, "corona is super harmful to the retail sector and restaurants":

> *[...] it was great. And then what was thrilling, it widened up the possibilities of how to organise events because the winegrower also participated [...]in the south of Germany that evening and spoke about how she cultivates wine. And it is totally an opportunity. And also, Anna from Stolzen Kuh was there because we had salami or cheese. [...]. And she wouldn't have come for an evening tasting in Berlin. But sitting two hours in front of a computer, closing it and feeding again animals: brilliant. YES. That was something where I thought 'Okay, some things are easier online'. And yes, for some people, it was a new opportunity (H., 2020, in interview to Kalix Garcia, 2023).*

Figure 2. *SFD Map of producers and restaurants*



Source: SFD website reproduction

The same format, but on a larger, national scale, was launched by SFD. The first was a wine tasting, as the movement's wine commission was researching and learning more about sustainable ways to produce the traditional drink. They sent out a box with six bottles of wine and instructions on what to serve with them.

Figure 3. *Tasting boxes from SFY Berlin, SF Akademie and SFD chocolates and Ark products.*

Source: @slowfoodyouth_berlin Instagram reproduction (left) and own work (others)

The tasting was broadcast on Zoom with a sommelier and some of the producers. Later, on the occasion of Terra Madre, Slow Food's major international event held every two years in Italy, which would be transformed into an online version in 2020, SFD organised more tastings in this format.

The big difference between the SFY Berlin project and the national ones was the scale and the publicity. While the youth group focused its publicity on social media (mainly Instagram and Telegram), the SFD marketed its tastings through newsletters and its website. The first strategy easily reached people outside the movement, while the second was a way of reaching potential new members, as these tasting boxes were usually for more than two people. In addition, the SFY tasting was cheaper than the others: it cost 35 euros, while most of the SFD tastings cost between 45 and 70 euros. These tastings, although innovative in their digital format, have been part of Slow Food's activities for several years. One of the main aims of the movement has always been to connect small producers with consumers, and in this way to influence the production, distribution, preparation, and consumption of food.

Online Campaigns: #WithdrawtheCAP, #GoEAThical

SFY had invested in online campaigns as a collective action even prior to the pandemic. Many of these mobilisations form part of the Slow Food Europe office's strategy, which is used for lobbying the European Parliament. The office has been instrumental in influencing key agricultural and food agendas in alliance with various other social movements and NGOs. One of these campaigns was #WithdrawtheCAP, launched by several NGOs and movements linked to the agri-food world. The aim was to put pressure on the European Parliament not to adopt the then proposed reform of the Common Agricultural Policy (CAP) because of its incompatibility with the movement's principles on the environment, animal welfare, and the interests of small farmers.

SFD also ran workshops with young activists as part of #GoEAThical – Our Food, Our Future – an EU campaign that aims to raise awareness among consumers, especially young people, about the food system and its injustices. They showed how products consumed in Germany are made in other parts of the world, often with harmful effects on the environment and poor working conditions for the people who grow them. The issue of exploitation of migrant workers has been discussed by the SFY – which even produced a podcast

– but the focus has mainly been on Italy and Spain. Yet the pandemic highlighted that this type of exploitation is also taking place in Germany's fields. The issue was the subject of an article in Slow Food Magazine (03/2020). In June 2021 an online cooking course focused on the arrival of seasonal workers from Eastern European countries to work in precarious conditions and without adequate safety measures during the pandemic. The harvesting of asparagus and strawberries in Germany depends heavily on seasonal workers.

Figure 4. *An online cooking class debated the working conditions of seasonal migrants*

Source: SFD website reproduction

Analysing the changes in the SFD's repertoire of collective action during the Covid-19 pandemic, we can see that there have been several changes: first, more online communication, e.g. the SFY group on Telegram; second, the migration of in-person events to online, such as the Disco Soup; third, completely new formats, such as the producers' map or online tastings; and fourth, a continuity of actions that already existed, but with agendas made more explicit by the pandemic. However, not all of them lasted, e.g. the Disco Soups went back to the offline format in 2023. The producers' map and the online tastings are still collective actions used by the movement in its quest to connect consumers and producers.

Wir haben es satt!

When the Covid-19 pandemic hit Germany in March 2020, the WHES protest march had just taken place in Berlin. The challenge for the coalition seemed distant, as they had almost a year to adapt the next WHES street protest to the new conditions. Over the next three years, the pandemic had a significant impact on the conventional methods of collective action used by the Meine Landwirtschaft coalition, as many of its activities depended on in-person interactions, including workshops, public demonstrations and politically charged events with visual statements in key political locations.

Exploring hybrid repertoires: #Fußabdruck, #Schnitzeljagd

As a result of the ongoing pandemic, preparations for the big WHES campaign in January 2021 had to go digital. All the discussions and the usual preparations for the march took place online. Instead of the usual big street march, the campaign was organised into several hybrid political actions: a tractor march in and around Berlin and a collaborative photo action in front of the chancellor's office. The latter was the result of the coalition's first big digital collective action.

In December 2020, it was still unclear whether people would be able to come together on the streets in January 2021, due to severe lockdown restrictions and social distancing. In response, Meine Landwirtschaft launched a digital campaign called Footprint under the hashtag #AgrarwendeLostreten – which can be translated into English as "Let's kick-off agrarian change" (Figure 5). The coalition had previously used social media (Instagram, Facebook, Twitter and Flickr), so the infrastructure for the dissemination was already in place.

Figure 5. *Post on Instagram with Call for Participation in the Action Footprint in December 2020. The Slogan says: "Let's kick- off agrarian change! Food is political!".*

Source: @wir_haben_es_satt Instagram reproduction

The idea of the campaign was simple but highly effective. All activists and allies of the coalition could send in their home-made footprints accompanied by demands for agrarian change until the day of the photo action on site. Some explanatory videos were posted on Instagram for a few weeks to reach and motivate people. On 16 January, tens of thousands of footprints (Figure 6) sent in by activists from all over Germany (and beyond) were hung in front of the German parliament as a visual message and representation of the demands for a more sustainable, fair, and ecological food policy.

Figure 6. *Two pictures from the visual statement and protest action (a) colourful footprints with vegetables and a 'bio' sign; (b) the mass of the footprints and some activists with a banner make a visual statement for agrarian change*

Source: Flickr Meine Landwirtschaft.

In the course of 2021, Meine Landwirtschaft organised a series of small-scale local protests with a reduced number of participants. The main demands were to oppose factory farming and pesticides, to promote small-scale and family farming, and to demand more political action from the then Federal Minister Julia Klöckner. In September, the successful collective action #Schnitzeljagd took place, which could be translated as #ScavengerHunt or more literally, 'hunt the steak'. Organised in a hybrid format, it combined different challenges over three days and was based on a toolkit that activists received at home beforehand. In an explanatory video, Saskia Richartz (former spokesperson of WHES) mobilized the activists:

> *We need to talk, because the way we produce our food and feed ourselves has massive negative impacts. For the climate, for biodiversity, and, also, for many people who produce our food. But there are alternatives to the false solutions of agribusiness. Alternatives to the seed monopolies, genetic engineering, and pesticides. Become part of the solution with us. We create small urban biotopes for biodiversity, save food and stand in the way of agribusiness. With the #Schnitzeljagd, we are on track with the food revolution.*[2]

All challenges were accompanied by a hashtag and a video with instructions on what to do, where and when (Figure 7). For each challenge, activists would explore their cities and make a small impact by planting seed bombs to increase biodiversity in parks or other green spaces, saving food from supermarkets and sharing it in their neighbourhood, raising awareness, and boycotting food produced under unsustainable and unfair conditions. They could post their results on social media using the relevant hashtags and share their experiences with others in the coalition and beyond.

Figure 7. *Pictures to illustrate the five challenges of #Schnitzeljagd: (a) #SeedbombChallenge; (b) #BilligfleischNein-Danke; (c) #RettetDenRest; (d) #Foodies 4people; and (e) #Foodies4futures.*

Source: @wir_haben_es_satt Instagram reproduction.

The broader agenda of the collective action focused on the negative impacts of pesticides, monoculture agriculture and intensive livestock farming on biodiversity, climate, and the future of the planet. This echoed

[2] Link to video: https://www.facebook.com/WirHabenEsSatt/videos/aktion-schnitzeljagd/640569970171271/

the main themes of other (digital) protests throughout the year and the January hybrid mobilisation under the slogan "Vote out the Agribusiness! For more peasant and ecological agriculture and animal husbandry, for climate justice and global solidarity!" These issues also featured in many of the video and text interviews posted on the WHES website, an interesting way of giving visibility and voice to the different actors in the coalition. However, despite the new digital repertoires that facilitated communication and mobilisation, the campaigning and protest culture of the Meine Landwirtschaft coalition remained primarily focused on the ultimate impact in the streets, farms, urban gardens and communities in 2021. The collective actions were still more organised as internet- supported and not entirely internet-based (Van Laer and Van Aelst, 2013) in 2021. This changed in 2022, when Meine Landwirtschaft fully embraced the digital repertoire of collective actions.

Embracing digital repertoires: #Staffellauch, #Ernährungswende

In 2022, Mein Landwirtschaft activists used digital repertoires, so that the big WHES protest campaign in January was prepared as a more complex and interconnected collective action. The protest repertoire was threefold. First, a digital video campaign under the slogan #Staffellauch [Leek relay run], with short, self-made videos of the protesters passing along a leek – as if it were a relay baton – from farms to kitchens to canteens, while voicing their demands for a transition in agriculture and food.[3]

Second, in a visual action in front of the German parliament (Figure 9), activists spelled out in huge letters formed out of hay bales, the central demand of the digital campaign: Agrarwende Jetzt! [Agrarian Change Now]. The third action was a tractor demonstration in Berlin, which ended at the Federal Ministry of Food and Agriculture with speeches and a dialogue with the newly elected Federal Minister Cem Özdemir.[4] At this third event, the leek digitally transmitted in the videos was handed over to the minister and his state secretaries as a real baton with a QR code to the videos. The digital campaign was thus materialised and delivered as a concrete political demand (Figure 8).

Figure 8. *Two pictures from the Protest Action #Staffellauch; (a) Instagram Post with a Call for Participation: "Due to the Pandemic, the March is postponed. Instead there will be the Videoaction #Staffellauch"; (b) Picture of the Federal Minister of Agriculture and Nutrition Cem Özdemir with the symbolic leek stick*

Source: @wir_haben_es_satt Instagram reproduction

The impact of the digital protest was immense; over 1,500 videos were submitted and edited into a video of over four hours.[5] The messages from the activists were varied, many involving their working and living environments in creative ways. In the end, there were carrots, bees, cows, chickens, people – all united by

[3] We would like to thank Marie Hanau (former research assistant at Food for Justice) for her help in the organization of the digital campaign's material.

[4] The current German Government – a coalition of the Social-Democrat-Party (SPD), Liberal Party (FDP) and Green Party (Bündnis 90 Die Grünen) – created a momentum of political change in the beginning of 2022. Regarding German food politics, it was the first time that a Green Minister became head of the Federal Ministry for Agriculture and Nutrition.

[5] Link to the videos: https://www.youtube.com/watch?v=3TTL6_FuScI

agri-food relations – calling for change in food and agricultural policy. The overall message was clear: there are many different dimensions to consider if we really want a structural transformation of the food system. Some pointed to socio-economic and material aspects, such as access to land, lack of subsidies for organic and small-scale agriculture. Others spoke of social, interspecies, and intergenerational justice, calling for better regulation of pesticides, monocultures, and fertilisers to protect not only humans but also more-than-humans (insects, animals, soil, water). Some other aspects such as gender equality, queerness, and solidarity with other marginalised groups (e.g. seasonal migrant workers) were also present but less topical. Another common theme was that food is highly political and that it is the responsibility of government to promote the much-needed socio-ecological transformation.

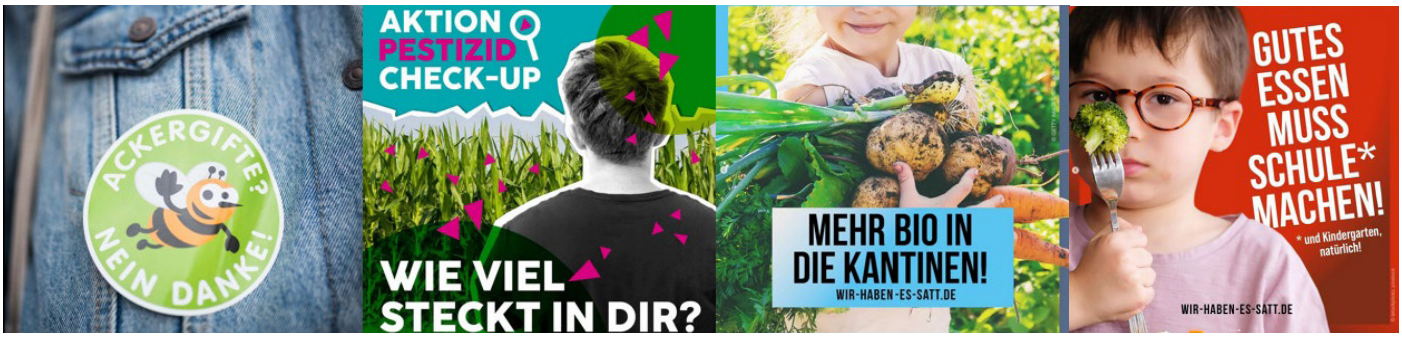
Figure 9. *Visual protest action in front of the German Parliament with a materialisation of the Campaign Slogan 2022: "Agrarian Change Now!"*

Source: Flickr Meine Landwirtschaft

The protest was widely covered by the media, and its political impact within the ministry itself was far greater than in previous years. The coalition was surprised by the widespread involvement from all sides and the open and interested political response from politicians and the public. The digital repertoires facilitated the participation of activists from all over Germany and beyond, broadening the political demands and reaching more citizens. As a result, the coalition gained greater visibility and increased its influence on the public debate on food politics. The digital archives enabled the visibility and inclusion of often marginalised activist groups in street protests, such as farmers and food preparation/craft workers in predominantly rural areas across Germany, who were spared the long journey to Berlin. In addition, the video messages established connections across different scales, both urban and rural, as well as regional/local and national/transnational. Actors from these different spheres engaged in a conversation by passing the leak baton.

Other digital/hybrid actions in 2022 were the Pesticide Check-up where people could send in their hair to be tested for pesticide residues –, more interviews with coalition activists posted on the Website, and the #Ernährungswende [Nutrition Turnaround] digital campaign. This campaign was focused on raising awareness of the potential of community food in schools, nurseries, and canteens.

Figure 10. *Different images from the protest actions in 2022; (a) Sticker with a bee saying "Pesticides? No thank you!" [Reference to a famous Anti-Atom-Movement Slogan]; (b) Call for Participation for the Pesticide Check-up "How much is inside you?"; (c) Slogan of the awareness campaign #Ernährungswende "More organic food in the canteens" (d) another slogan "Good food must go to school" as a reference to school canteens as possible game changers for more organic farming*



Source: @wir_haben_es_satt Instagram reproduction

In 2022, a diversification of the issues and demands of Meine Landwirtschaft could be observed. Furthermore, the more frequent and dynamic use of digital and hybrid repertoires of collective action clearly had a positive impact on the public visibility and political power of the food movement coalition. Activists embraced digital repertoires as part of their protest actions and created structures and digital narratives that would continue into the future, even after the end of social distancing and bans on assembly. However, there are certain functions of physical street protest that cannot be replaced by digital forms of protest. "Showing oneself, standing, breathing, moving, standing still, talking, and remaining silent are all aspects of a sudden assembly, an unanticipated form of political performativity that brings liveable life to the forefront of politics" (Butler, 2015: 18).

Commonalities and differences

In Germany, various social movements and initiatives are creating a heterogeneous protest landscape around the transformation of the food system – with different repertoires of collective action that provide disruption, show alternatives and/or resistance. Slow Food Germany and the coalition behind the Wir haben es satt! protest campaign have much in common, but there are also differences and ambivalences. To reflect on how these two actors have responded to the Covid-19 pandemic, we have organised the comparison around two different axes: the food movements' repertoires of collective action, and the food inequalities that are addressed in their demands for transformation. As explained in the introduction, the actor level is not analysed in depth; we present who the actors of the movements are, but remain at a descriptive level.

Different levels, similar actors

There are similarities between Slow Food Germany and the Meine Landwirtschaft coalition when we look at the profile of their activists. Both movements are predominantly white, middle class, and do not represent the general public, but rather mobilized, politicized citizens. Each movement has its peculiarities in terms of the diversity of its membership, which is directly related to its transformation agendas (see below).

The political subject of the Meine Landwirtschaft coalition is 'a complex, nascent, changing subject formed by the relationships between different parties entering into a political-ecological coalition mediated by nutrition' (Motta, 2022: 77). The political subject itself is in constant flux and therefore performative (Butler, 1999). However, according to a protest survey conducted in 2020, a significant proportion of the activists identified as female, politically centre-left, and from older generations. Most were politically active, had an academic background, and a medium to high income. They were also predominantly consumers, with only a small proportion of producers and food sector workers (Meinecke et al., 2021).

The Slow Food philosophy, on the other hand, is about fighting for good, clean, and fair food for all, which can engage a diversity of groups, actions, and agendas. Like many food movements, SFD is still a space of privilege, middle- or upper-middle class, white and highly educated (Goodman et al., 2012; Guthman, 2011; Kalix Garcia, 2023; Slocum, 2007). It is mostly formed by activists from an urban environment. It is a consumer-led movement, but increasingly incorporates possibilities for bridges and connections with producers and workers in the food sector. WHES, on the other hand, has embodied the alliance of these urban and rural actors since its inception.

In this work, it becomes clear that both movements still have many ambiguities regarding the critique of racial blindness in AFNs (Guthman, 2011; Motta, 2021b; Slocum, 2007). A growing awareness and initial attempts to change these structural inequalities within the movements can be seen through the inclusion of new actors, such as migrant workers, in their agendas. However, class issues are addressed more by WHES than SFD, due to the issue of material and social food poverty and the alliance with actors from socio-economically vulnerable groups.

Repertoires of collective action before, during and after the pandemic

Looking at the types of collective action undertaken by the food movements analysed in this article, we can see some differences, with innovations and continuities between the actions undertaken before and after the pandemic. Once again, it is important to understand the different scales of action of the two movements: as SFD is a movement with around 11,000 members, its actions mobilise smaller groups; on the other hand, the Meine Landwirtschaft coalition brings together dozens of movements and is able to mobilise thousands of activists across the food movement spectrum. WHES puts visibility and disruption in the streets at the centre of its actions; before the pandemic they occupied the public space with different collective actions. SFD promotes different types of actions, focusing on education and advocacy, but always around food.

Table 1. *Repertoires of collective action before, during and after the pandemic.*

Repertoires of collective action before, during and after the pandemic		
	Slow Food Germany	Wir haben es satt!
Before	• Communication through calls, internal platform, and e- mails • Meetings around food (at restaurants or picnics) • Educational actions – Disco Soups, Debates, Tastings, Cooking classes, etc. • Fairs • Online campaigns	• Protest march in the streets with thousands of people and tractors • Smaller protests in front of agri-food factories and against specific players in the food industry • Online awareness campaigns around specific topics • Social media as a communication channel
During	• Online communication through instant message apps and meetings • Online campaigns, #StayHomeStaySlow, #SlowFoodSolidarity, #WithdrawtheCAP, #GoEAThical • Events adapted from offline to online, e.g., World Disco Soup Day • SFD Map of producers • Online Tastings	• Tractor demonstration in front of the Ministry of Agriculture and Nutrition • Hybrid protest #Staffellauch • Photoaction - #Fußabdruck, Agrarwende Jetzt! • Hybrid actions about diverse topics such as pesticides, meat consumption, food waste and hands-on activities - Pestizid- Check-Up, #Schnitzeljagd • Broad online campaigns #Ernährungswende

Repertoires of collective action before, during and after the pandemic		
	Slow Food Germany	Wir haben es satt!
After	• Online communication • Meetings around food (at restaurants or picnics) • SFD Map of producers • Online Tastings • Disco Soups in person • Hybrid events: Debates, Workshops, Cooking classes, etc. • Online campaigns	• Protest march in the streets with thousands of people, tractors and hybrid protest action #Möhrenauflauf • 6-point plan with concrete political demands signed by 100+ organisations • Protest actions in other cities; Münster, Königs Wusterhausen • Action camp and big protest in front meat producer Wiesenhof • Digital and hybrid campaigns and petitions • 4-day programme to exchange experiences between activists and farmers: "Hof mit Zukunft" [Farm with Future]

Source: *Own work*

Table 1 summarises the collective action repertoires of these two movements before, during and after the Covid-19 pandemic. It allows us to see the transformations generated within WHES and SFD in the face of multiple crises. We see that, according to their profiles and agendas, the two cases studied here show similarities in the ways they adapted and innovated in the face of the new context, while maintaining their objectives of transforming food systems. Although the focus here is on the repertoire of actions, it is also possible to note the broadening of the movements' agendas (see the next section).

Comparing the two cases studied here, the (post-)pandemic period brought new digital repertoires to these food movements. Rather than just an adaptation from offline to online – although this also occurred –, it was a transition from internet-supported to internet-based collective action. While the challenge for SFD was to continue its actions and mobilisations without the pleasure of preparing and consuming food on site, for WHES it was not being able to occupy the streets. In both movements, digital campaigns were the way out. Social media became not only a space for communication, but also a space for protest, a fundamental platform for agri-food relations.

While the dynamics of communication within some SFD groups changed, for others the pandemic meant that they could not meet at all, as not everyone had access or the energy to participate in online events. There were consequently some losses of members due to the digital divide. On the other hand, the digital events made it possible to widen participation, as location was no longer a limitation. The same could be observed within the WHES. The hybrid repertoires were a major innovation in terms of participation across scales (urban-rural and local-national) and other axes of inequality (class, gender, nationality). The new digital collective actions allowed people to actively participate in the movements from their own homes. However, there were also challenges, such as the exclusion of some established activist groups that did not (want to) use digital communication.

It is also noteworthy how the movements adapted their actions in the first (post-)pandemic year 2023. Some of the new formats proved so successful that they are still part of the repertoire of collective action, even after the authorisation of large offline events. This is the case with the SFD map and hybrid tastings, as well as the online mobilisation of WHES, which included the #Möhrenauflauf digital campaign alongside the 2023 street protest.

Demanding transformation by addressing food inequalities

SFD and WHES address different dimensions of inequality in their collective actions, but the common resistance of diverse political subjects to these food inequalities (Motta, 2021) in diverse contexts and at different scales creates a common ground. Many of the demands made by food activists have not been new, such as animal welfare in industrial meat production, but the focus shifted during the pandemic when the exploitation of workers and inhumane conditions also came to light. We will focus now on four different axes of inequality that need to be overcome for a socio-ecological transformation: socio-economic, decolonial, more-than-human, and ecological.

In terms of socio-economic inequalities, the pandemic brought the issue of food poverty to the fore in German society. Demands on food banks increased drastically, highlighting the need for concrete action against material and social food poverty and the lack of rapid response and action by the state. As a result, food movements argued for the urgency of new food policies, for instance to expand social welfare programmes, improve access to affordable and healthy food, and support resilient food systems. Food activists highlighted the fragility of national and local food systems and focused their collective actions on supporting the most vulnerable and affected communities. The WHES #Ernährungswende campaign put these issues at the centre of demands, calling on the state to increase community and school catering in Germany as an effective way to tackle food poverty and provide access to good and healthy food in socio-economically vulnerable communities. On another front, the pandemic hit the German restaurant scene hard. Some digital actions aimed to help restaurants with delivery or take-away options or to expand their markets, such as the Taste@ Home project or the SFD map. Others tried to take up food saving actions to share food from restaurants, bakeries, and home-cooked meals, etc. with those in need, e.g., the #RettetDenRest [Save the rest] challenge organised by WHES.

In terms of the decolonial dimension, the pandemic initiated a process of reflexive critical whiteness and critique of the lack of social security, visibility, and recognition of seasonal migrant workers in the agricultural and food sector in Germany. Due to the Covid-19 lockdown restrictions, many German farms faced a shortage of seasonal migrant field workers. When the state relaxed the entry regulations, controversy erupted over the neo-colonial exploitative conditions that the workers endured (Open Society, 2020). These migrant workers were exposed to living and working conditions that did not meet with pandemic precautions and were therefore treated as second-class citizens or even non-citizens (Baines and Sharma, 2002). In countries of the 'Global North', such as Germany, where inequalities on farms and in factories are not widely known to the general public, it became a major media topic (Küppers, 2021). This new visibility for a previously very subaltern and marginalised group of political subjects also happened through digital actions by food movements. Solidarity discourses with exploited workers from the global peripheries have been part of the WHES agenda since the beginning. There was a clear shift in the narratives and agendas of SFD and WHES during the pandemic due to the new debates on precarious working conditions in the food sectors in Germany. In the digital campaign #Staffellauch and an article in the SFD Magazine, the perspectives and struggles of migrant workers in Germany became part of their agenda. Since then, the debate about neo-colonial structures in the food system in Germany has intensified.

In terms of the more-than-human dimension, the issue of animal welfare and interspecies justice has been a long-standing theme of Meine Landwirtschaft and SFD. Both fight against the meat industry and for small-scale animal production. Within WHES this debate is fraught with tension, as some of the food movements are organised around vegan and/or vegetarian consumption, while small-scale producers from peasant movements defend animals as part of their sustainable, local food systems. Both find a common ground in protest actions against mass meat production, such as the scavenger's hunt challenge #BilligfleischNeinDanke [#CheapMeatNoThanks]. The same debate takes place within SFD, which also focuses on animal welfare and reducing meat consumption, but is more focused on the awareness and political consumption of its members.

Finally, the ecological dimension is a fundamental part of the agenda in both WHES and SFD. The CAP reform has been a focus of mobilisation within both organisations for many years, often connected to protest actions against new EU regulations or economic treaties such as the Transatlantic Trade and Investment Partnership (TTIP). The prioritisation of subsidies for industrial and pesticide-intensive agricultural models, rather than supporting small-scale, agro-ecological producers, is a recurring focus of collective action for change in European and German food policy in both movements. During the pandemic, WHES continued to organise campaigns to reduce the use of pesticides, such as the #Pestizid-Check-Up, or to ban the production of pesticides banned in Europe for sale in the Global South. The loss of biodiversity caused by this agri-food corporate model is also being addressed with the WHES action #SeedBalls or the #SavetheBees campaign, in which SFD participates.

Conclusion

Food is becoming increasingly politicised in German society. The Covid-19 pandemic has reinforced this trend. This politicisation is leading to debates about different visions for the future of food and agricultural policies and practices in Germany, as they are deeply connected to the pressing societal issues of sustainability, climate crisis and biodiversity. Food movements in Germany have played a fundamental role in mobilising against food inequalities in a (post-)pandemic world.

In this article we have shown that Slow Food Germany and Wir haben es satt! have been able to adapt to the new conditions of the triple crisis and have created innovative new hybrid and digital repertoires of collective action. These hybrid repertoires should be highlighted as being very successful, as they were integrated into the two movements' traditional repertoires of collective action, to which they partially returned in 2022 as the pandemic restrictions slowly eased. Certain digital repertoires are still in use today. In particular, the easier accessibility of digital protest campaigns and the connectivity between activists, independently of scalar and temporal boundaries, seem to be effective repertoires for political action and coalition building in the here and now and in the future.

There has also been a shift in the agendas and demands for transformation of these two food movements. Overall, it can be said that food poverty and the neo-colonial exploitation of workers in the food sector have become relevant issues for SFD and WHES in the (post-)pandemic world. The digital and hybrid repertoires have enabled the food movements to create new agri-food relations and open up new possibilities for social mobilisation and solidarity with marginalised groups and issues. These new agendas are an important step in broadening the visions of socio-ecological transformation in Germany by incorporating critical perspectives on neo-colonial continuities, white privilege, and global power hierarchies.

The cases of SFD and WHES show how food movements have adapted to the challenges posed by the Covid-19 pandemic, resisting losses while creating new repertoires of collective action. Although the paper looks at two specific and related cases, it provides a perspective on how this has happened at different scales of collective action. Comparisons with similar movements in different contexts would be an important next step to expand on and confirm understandings of the new digital repertoires that have emerged in recent years among food movements or other social movements in response to multiple crises.

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