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Viewpoint

Corporate concentration and power matter for agency in food systems

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ABSTRACT

High levels of corporate concentration and power in agrifood supply chains raise important policy concerns because they can affect food systems in adverse ways. In this paper, we argue that increased corporate concentration and power in food systems has the capacity to undermine people's agency– that is, their capability to make choices and exercise their voice. We explore three dimensions of the relationship between concentrated corporate power and people's agency in food systems. First, dominant firms within highly concentrated food system segments can exercise market power, which enables them to earn excess profits – often by charging higher prices, suppressing wages, and weakening livelihood opportunities. Second, dominant agrifood firms have the capacity to shape material conditions within food systems – determining prevailing technologies used in food production, working conditions, levels of processing of packaged food items, and food environments – in ways that can affect people's choices. Third, dominant agrifood firms can exercise political power by actively pursuing strategies to influence food policy and governance processes via lobbying and other more indirect measures, weakening opportunities for broader democratic participation in food systems governance. Given these potential outcomes, more policy attention should be paid to corporate concentration and its implications for agency within food systems.

1. Introduction

The highly concentrated nature of agrifood supply chains has attracted growing concern among policymakers, civil society and researchers because of the potential adverse effects that a handful of large and powerful firms can have on food systems outcomes (e.g., Hendrickson et al. 2020; Wood et al. 2021a; Béné 2022; Deconinck 2021; Sexton and Xia 2018; Slater et al. 2024; Crespi and MacDonald 2022; Clapp 2025). This pattern of concentration and the rise of powerful firms mirrors other sectors of the economy, such as Big Tech, airlines, and automobiles that in recent decades have garnered attention for similar reasons (Eeckhout 2021). A key concern with respect to agrifood supply chains is that excessive market concentration and the associated types of power it confers to large and dominant firms can deepen inequalities in ways that risk undermining food security and food system livelihoods. Corporate concentration, for example, can lead to market and price distortions that can cause harm to food consumers, producers, and workers. The impacts can also go beyond price and wage effects, to include broader concerns about the potential negative impacts of corporate power and dominance on the everyday features of food systems, as well as the governance of those systems. The inequalities and uneven power dynamics that can arise from heightened corporate concentration and power in food systems are not always straightforward to measure, but they are important to recognize because they affect people's ability to interact with food systems on their own terms, and as such, they can lead to detrimental outcomes (IPES-Food 2017).

In this paper, we argue that agency is a valuable lens through which to understand the kinds of risks associated with elevated levels of

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corporate power in food systems. Agency implies that people have the capacity to make choices that shape their own circumstances and to exercise their voice through participation in broader societal decision-making processes. A focus on agency is important because an individual's freedom to make their own decisions and to have input into how society is organized are vital for the exercise of their human rights, including the right to food (Clapp et al. 2022). Agency is also widely recognized as important to people's achievement of more secure livelihoods and community wellbeing (Sen 1985; Fukuda Parr 2003; Ibrahim and Alkire 2007). Because of its significance in these respects, agency is increasingly recognized in policy, civil society, and scholarly settings as a dimension of food security that is distinct yet interlinked with other dimensions, such as availability, access, utilization, stability, and sustainability (HLPE-FSN 2019, 2020; Clapp et al. 2022). Individuals and groups with the least agency in food systems typically face disproportionate socioeconomic harm and often face systematic marginalization because of inequities and associated discrimination. Dynamics within food systems that can deepen inequities, such as growing corporate concentration and power in food systems, carry the risk of undermining agency in ways that exacerbate malnutrition and reduce livelihood options. An agency lens is thus important in assessing the potential impacts of corporate concentration and power because it captures impacts that include but also go beyond price effects to encompass the diverse ways in which people's ability to exercise voice and choice in food systems – as well as their wider wellbeing – can be affected.

This paper makes several contributions. It draws on what is at present a disparate literature across multiple disciplines to explore the relationship between concentrated corporate power in agrifood systems and people's agency within those systems (e.g., Howard 2016; Wood et al. 2021a; Deconinck 2021; Hernandez et al. 2023; Clapp et al. 2022; MacDonald 2024). In doing so, it outlines how growing corporate concentration, and the forms of power associated with it, have important implications for people's agency within food systems along three dimensions (Clapp 2022). First, dominant firms in concentrated sectors have the capacity to shape supply and demand conditions via the exercise of market power, which can drive inequities and narrow people's choices by leading to higher food and input prices, as well as reducing income and livelihood opportunities for food producers and food system workers (e.g., Wood et al. 2021a; Shi et al. 2010; MacDonald 2024). Second, dominant agrifood firms have the power to shape material conditions within food systems – such as determining prevailing technologies used in food production, levels of processing of packaged food items, and conditions in food environments in ways that can affect people's ability to exercise food and livelihood choices (e.g., Clapp 2025; Baker et al. 2020; Wood et al. 2021b). Third, concentrated firms pursue strategies to exercise both direct and indirect political power in ways that shape food policy and governance processes, which can constrain people's opportunities to voice their perspectives, including democratic participation in the governance of food systems (e.g., Conti et al. 2025; Fabbri et al. 2018; IPES-Food 2023). In examining these relationships, the paper highlights cases in which corporate concentration and power have worked to undermine agency. However, it should be noted that the data are at times incomplete and research findings are sometimes contradictory, pointing to the need for more research on these linkages to ascertain the full extent to which these dynamics play out in practice.

The paper also calls for more systematic consideration of the potential implications of corporate concentration and power for people's agency in food systems in policy settings. Because the dynamics outlined in the paper can and often do result in harmful outcomes when people's agency is constrained, elevated levels of corporate concentration and power present sufficient risk to warrant taking precautionary policy measures to mitigate potential negative effects, even in cases where the evidence is unclear or mixed. Policy measures – such as stronger competition policies that foster more competitive markets, tighter rules over corporate conflicts of interest and influence in policy settings, and more open processes for citizens and civil society to participate in policy and governance – can go some way toward reducing these risks and enhancing, rather than undermining, people's agency in food systems.

2. Charting corporate concentration and power in food systems

A growing body of research documents a high degree of corporate concentration all along global agrifood supply chains (e.g., ETC Group 2022; Clapp 2021; IPES-Food 2017; Hendrickson et al. 2020; Howard 2016; Deconinck 2021; Crespi and MacDonald 2022; Sexton and Xia 2018; Slater et al. 2024). A range of diverse and overlapping factors has encouraged the rise of corporate consolidation and the growing dominance of large firms in key sectors in recent decades, including in food systems. These include market factors (e.g., the quest for economies of scale, mergers and acquisitions, and organic growth of successful firms), policy factors (e.g., subsidies to certain industries, intellectual property protection laws, and weak competition policies), and technology dynamics (e.g., breakthrough innovations and technology lock-ins). A full discussion of these forces is beyond the scope of this paper but is covered in other works (e.g., Adams and Brock 2004; Clapp 2022, 2025; Kurz, 2023; Adams and Brock 2004).

Here we provide a brief survey of the available data that illustrate levels of corporate concentration across food systems, considering how it manifests at a global level as well as at regional, national, and in some cases sub-national levels, highlighting parts of food systems where concentration is especially pronounced. Understanding the degree of concentration in food systems is important because there are typically only a few large firms that dominate in those sectors, and that dominance can have wide ranging impacts. It is important to note that data are often of uneven quality with respect to the size and scope of markets at different scales, and at times it is challenging to determine the share of those markets held by the largest firms. For example, in some cases, some of the largest firms are privately held companies, and are thus not required to publicly report their sales data. These issues with respect to data availability – as well as challenges associated with precisely defining markets that are made up of heterogeneous firms and products that do not always fall into neat categories – make the accurate measurement of corporate concentration difficult. However, we can glean some important insights from the data that have been reported, and even without precise numbers, we can observe that a limited number of very large firms dominate at most points along agrifood supply chains around the world.

Concentrated markets in food systems are not a new phenomenon. Some parts of food supply chains have been concentrated for a century or more. For example, fewer than 10 companies have dominated the global grain trade since the late 1800s (Murphy et al. 2012). The farm machinery market has consisted of fewer than 10 major firms since the early 1900s, and hybrid seed and chemical industries have been dominated by a similarly small number of firms since at least the 1930s (Clapp 2025). Although concentration is a longstanding issue in the agrifood sector, it has intensified in many parts of food supply chains in recent decades following an uptick in corporate mergers. These corporate mergers include tie-ups among firms that were already large and dominant, including deals that brought together the food processing firms Kraft and Heinz, agricultural input firms Dow and DuPont, as well as beverage firms Anheuser Busch In-Bev and SABMiller, each of which resulted in new giant firms worth over US$100 billion (Heinrich Böll Foundation et al. 2017). In each case, these mergers placed the resulting firms among the top revenue-earning agrifood companies in the world. These are just some of the largest mergers in a sea of corporate mergers in the sector in recent decades. For example, in the farm inputs sector, there was a major restructuring after 2015: in addition to the merger of Dow and DuPont that created the new spinoff seed and chemical firm Corteva, Bayer purchased Monsanto and ChemChina purchased Syngenta, while another major company, BASF, bought up the parts of these merging firms that regulators forced them to sell to close the deals

(Deconinck 2020). After the dust settled from these mergers, only four giant firms were left dominating the global agricultural seed and chemicals sector.

When mergers occur among firms that are already large and dominant, the newly merged firms typically hold a greater market share. Those firms often gain greater control over transactions in the sector, which provides them with the power and resources to influence the contours of the market. This kind of effect is especially likely with horizontal mergers – i.e., mergers between firms that perform similar functions, such as when two beverage firms merge. Recent research shows that most mergers in agrifood systems are horizontal in nature (Keenan et al. 2023). Mergers, however, can also be non-horizontal – such as those between firms at different stages within supply chains – which often result in different but complementary activities being organized under the same firm. Such mergers can equally increase the power and influence of the resultant firms by extending their control in both upstream and downstream markets (Wood et al. 2021a). The mergers that took place in the 1990s between seed and agrochemical firms, and more recent mergers between the retail and production arms of the fertilizer industry, are examples of mergers with non-horizontal elements (Clapp 2025).

Measuring market concentration is difficult because markets are not always well defined (Berry et al. 2019). In the absence of more robust metrics, the level of concentration in a market is typically measured by adding up the market share of the four leading firms in a sector – commonly referred to as the CR4, or the 'concentration ratio' of the top four firms. Sometimes concentration ratios are expressed as the percentage of a market dominated by a slightly smaller or larger number of firms, such as CR3 or CR5, depending on the nature of the market and the available data. Measurement of a concentration ratio depends on knowing the overall size of the market, which is not always easily available and is often an estimate (Bonny 2017). Because the CR4 is an industry- or market-specific measure, it does not always capture the concentration effects of non-horizontal integration, even though mergers across different markets within food systems can also dampen competition. There are also other measures of market concentration, such as the Hirschman Herfindahl Index (HHI), which sums the squares of the market shares of each firm in the market, resulting in a number between 1 and 10,000. Since the HHI is based on the market shares of all firms in a sector, it is a more accurate measure of market concentration than the CR4. However, because it requires knowledge of the precise market share for each participant in the marketplace, the HHI is not easy to measure in many cases – especially in developing country contexts where such data are often not available.

When major segments of supply chains are dominated by just a few firms – what economists refer to as an oligopoly – those markets can become distorted to the extent that they diminish competition and choice for consumers and suppliers, which can lead to inefficiencies and external costs for consumers and for society at large (Adams and Brock 2004; Eeckhout 2021). When the CR4 exceeds 40 %, markets are often considered to be moderately concentrated; when that ratio exceeds 60 %, markets are often considered to be highly concentrated (Law 2016). Markets where the HHI is between 1000–1800 are considered by US regulators to be moderately concentrated, and those over 1800 are considered highly concentrated (US DOJ and FTC 2023). Looking specifically at food supply chains, market concentration often exceeds these cut-offs. Even with the previously noted weaknesses, the concentration ratio data outlined below provide a rough indication of areas in food systems where concentration is high, and where further investigation of its extent and impacts is warranted.

Figs. 1 and 2 provide a review of available data, which clearly indicate that there are moderate to high levels of concentration across food systems and at various scales, from regional to national to global. Concentration at the global level is especially pronounced in the agricultural seeds and chemicals industries. The CR4 in the global commercial seed market in 2021 was around 50–60 %; those same four firms also controlled 70 % of the global pesticide market (S&P Global 2022; IHS Markit 2019; Statista 2023a). In the farm equipment sector, the CR4 stood at 45 % (Statista 2023b; Howard 2021).

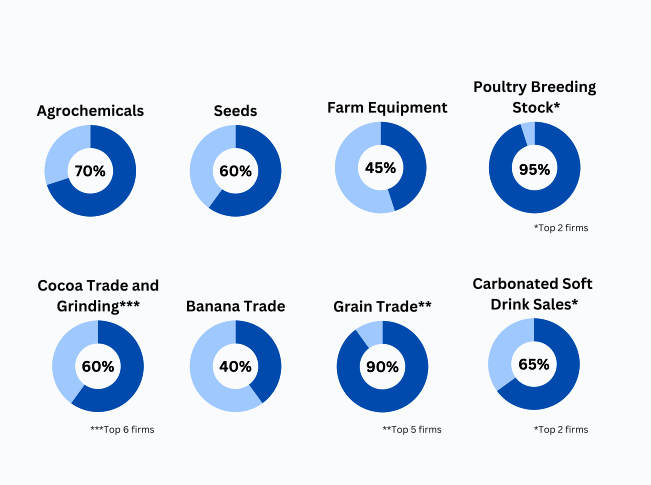

Fig. 1. Global Market Share (Percentage) Held by the Top Firms. Sources: IHS Markit 2019 (seeds); Statista 2023a (agrochemicals); Howard 2021 (farm equipment); Somo 2024 (grain trade); Oxfam 2024 (cocoa trade and grinding); Voora et al. 2023 (banana trade); Wood et al. 2021b (carbonated soft drinks); Shamba Centre 2023 (poultry breeding stock).

In the global grain trade, the CR5 is in the range of 70–90 % (Somo 2024). Market concentration is also moderate to high in global markets for other food commodities. The top six cocoa trading and grinding firms control at least 60 % of those markets (Oxfam 2024). The CR4 for the world's banana trade in 2019 was just over 40 % (Voora et al. 2023), down from much higher levels in previous decades (FAO 2014). Although the broadly defined food processing sector is less concentrated globally compared to other aspects of agrifood value chains, markets for certain products are intensely concentrated, including markets for breakfast cereals, soft drinks, and beer (Howard 2021). In the carbonated soft drink industry, for example, just two firms, PepsiCo and Coca-Cola Co., held over 65 % of the global market in 2020 (Wood et al. 2021b). In livestock breeding, concentration is also stark: just two multinational firms control over 95 % of the world's poultry breeding stock (Shamba Centre 2023).

Corporate concentration in food systems is often more pronounced at sub-global market levels and for specific products. For example, although the big four seed companies account for approximately 50–60 % of the global market, in Brazil, the national-level CR4 for maize seeds was 97 % in 2016. Moreover, in at least 15 other countries, the CR4 for maize seed exceeds 80 % (OECD 2018). Meatpacking is another sector that is highly concentrated at the national level. In the United States (US), the four largest meatpacking firms purchase 85 % of steers and heifers and 67 % of hogs (MacDonald 2024). In Canada, just three firms control over 95 % of beef packing (NFU 2020). Grain markets are also concentrated at the national level. In China, for example, the top three soy importing firms control 94 % of the market (Yan et al. 2023). Several recent studies indicate that market concentration in the food sector is also a growing problem in sub-Saharan Africa, affecting markets for soybeans, fertilizer, poultry, and seeds (Shamba Centre 2023; Roberts 2023).

For sales of processed and packaged foods, the available data show that concentration is especially high in Asia and Latin America. In most Asian countries, for example, the CR4 for soft drinks is over 90 %, and concentration levels are also high for other processed products, with a CR4 typically over 50 % for biscuits, snacks, packaged foods, and confectionery items (Baker and Friel 2016; Wood et al. 2023). Carbonated soft drink markets were found to be the most highly concentrated out of

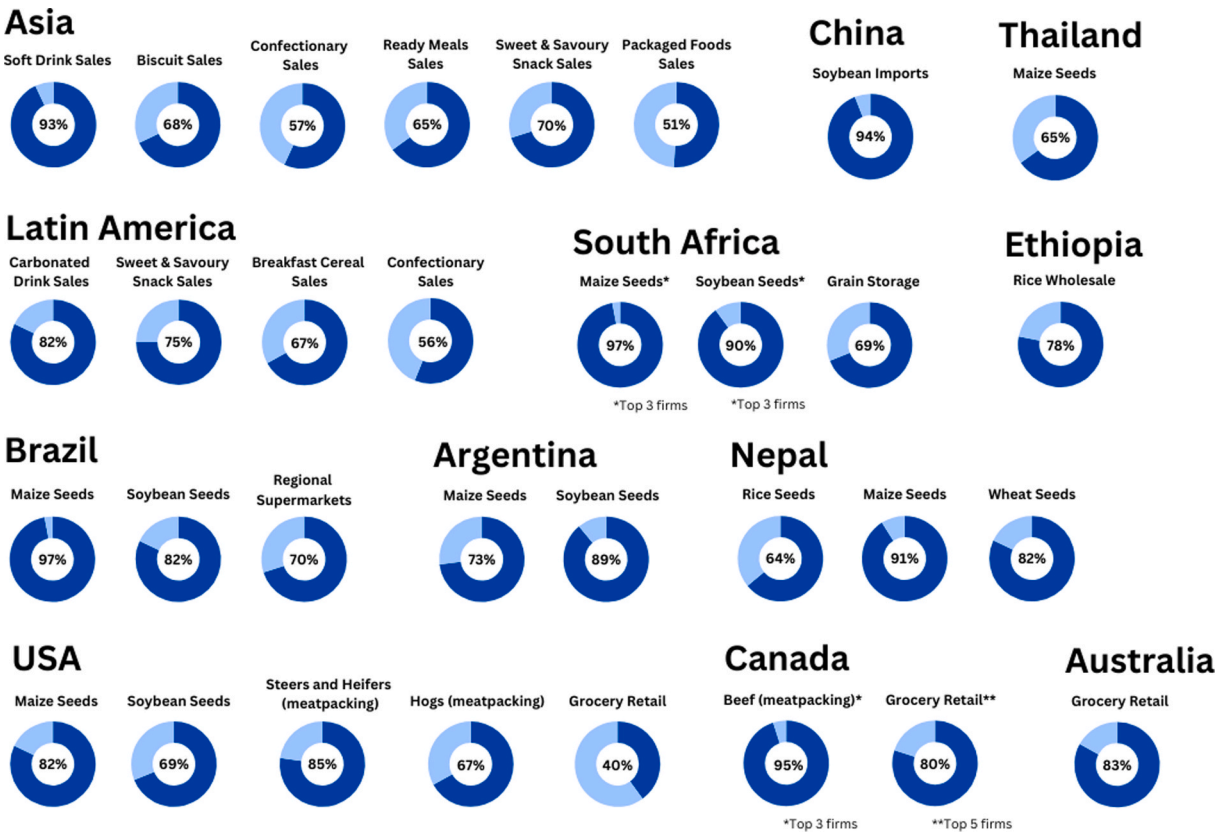

Fig. 2. Regional and National Market Share (Percentage) Held by Top Firms. Sources: PAHO and WHO 2015 (Latin America); OECD 2018 (Brazil – maize seeds, soybean seeds; Argentina – maize seeds, soybean seeds; US – maize seeds, sobybean seeds); ; Corte et al. 2015 (Brazil – regional supermarkets); ; Baker and Friel 2016 (Asia – soft drinks, biscuits, confectionary, ready meals, sweet and savory snacks, packaged foods); Spielman and Kennedy 2016 (Nepal – rice seeds, wheat seeds, maize seeds); Yan et al. 2023 (China – soybean imports); Napasintuwong 2017 (Thailand – maize seeds); Hodge et al. 2021 (South Africa – maize seeds, soybean seeds, grain storage); Australian Government 2025 (Australia – grocery retail); National Farmers Union Canada 2020 (Canada – beef meatpacking); Canadian Competition Bureau 2023a (Canada – grocery retail); MacDonald 2024 (US – meatpacking); Hernández et al. 2023 (US – grocery retail); Takele 2017 (Ethiopia – rice wholesale).

all markets for ultra-processed foods (UPFs) in twelve Asian countries, with CR4 values in 2013 ranging from just over 78 % in Japan to over 98 % in the Philippines (Baker & Friel, 2016). In Latin America, CR4 values indicate high levels of concentration for carbonated drinks (82 %), sweet and savory snacks (75 %), breakfast cereals (67 %), and confectionery products (55.9 %) (PAHO and WHO 2015). In Canada, the processed foods sector exhibits high levels of concentration, with the CR4 for the non-alcoholic beverage sector at 72 %, and 51 % for the packaged food sector (Gaucher-Holm et al. 2023).

Grocery retail markets are also highly concentrated. Following waves of consolidation in the grocery retail sector since the 1980s, concentration has become more pronounced, including in some developing countries (Hernandez et al. 2023). The CR4 for grocery retail is over 40 % in many countries, including the US (approximately 40 %), South Africa (approximately 54 %), and France (50 %) (Hernandez et al. 2023). In Canada, the five largest grocery chains command nearly 80 % of the food retail market (USDA 2022a; Canadian Competition Bureau 2023a). In Australia, two firms together control 67 % of the domestic food retail market (Australian Government 2025). In Brazil, the top two grocery firms alone controlled nearly all the food retail market in 2009 (Corte et al. 2015). Further, concentration rates may be especially high in sub-national markets. For example, a recent USDA-sponsored study indicated that the national HHI for grocery retailers in 2019 was 593 (a low level of concentration), but at the state, metropolitan, and county levels, the HHI was much higher, at 1,332, 1,881 and 3,737 – all of which are above the moderate or highly concentrated thresholds (Zeballos et al. 2023).

Despite potential weaknesses in the available data, we do see a consistent pattern of concentration in all parts of food supply chains. In food systems globally – and in a wide range of countries at the national and subnational levels – just a handful of giant firms collectively appear to control market shares that are considered moderately or highly concentrated. In many cases, this concentration has become more pronounced over the past several decades. As we outline below, high levels of concentration, and the kinds of power it confers to the top firms in the sector, can carry the risk of having adverse consequences for people's agency in food systems.

3. The implications of corporate concentration and power for agency in food systems

Agency is increasingly recognized in scholarly, policy, and civil society settings as an important dimension of food security and nutrition that matters for food system outcomes more broadly (HLPE-FSN 2019; HLPE-FSN 2020; Clapp et al. 2022). People's agency, or ability to shape their own circumstances with respect to food systems – i.e., to make choices and exercise their voice in food systems governance – is fundamental to people's dignity and human rights, including their ability to exercise the right to food, which is enshrined in the UN Declaration on Human Rights (UNGA 1948) and made legally binding on signatories in International Covenant on Economic, Social and Cultural Rights (UNGA 1966). The extent to which individuals can exercise agency affects not only their ability to obtain an adequate and nutritious diet, but it also shapes overall outcomes of food systems, including livelihood opportunities. For these reasons, the UN Voluntary Guidelines on the Progressive Realization of the Right to Food call on states to

promote free and democratic societies where people can feed themselves in freedom and dignity, and where they can participate in food-related policy decisions that affect them (FAO 2005). Likewise, the UN Declaration on the Rights of Peasants and Other People Working in Rural Areas (UNGA 2018) enshrines the rights of small-scale food producers to "determine and develop priorities and strategies to exercise their right to development," (Article 3) as well as their right to participate in governance efforts that may affect their livelihoods (Article 10). The human rights dimension of food systems agency is also highly relevant for Indigenous peoples, whose right to self-determination is recognized in the UN Declaration on the Rights of Indigenous Peoples (UNGA 2007).

The increased policy attention to agency as a dimension of food security and food systems livelihoods has directed greater focus to societal inequalities that shape people's ability to exercise both choice and voice within those systems (HLPE-FSN 2023). Although many potential drivers can contribute to such inequalities, heightened corporate concentration is an important factor that can lead to significant power asymmetries in food systems that result in unequal outcomes (Wood et al. 2021a). Power differentials can have a direct bearing on how people interact with food systems on a daily basis, for example by influencing their food access and food choices, as well as their opportunities to shape how they relate to those systems, including their livelihoods and opportunities for political participation (Conti et al. 2021).

As we outline below, when just a few firms have dominant positions in concentrated markets, those firms have privileged access to different kinds of power that matter for people's agency within food systems. They possess this power by virtue of their size and influence in those markets, as outlined in various frameworks of corporate power in food systems (Clapp, 2022; Clapp and Fuchs, 2009). First, concentration gives dominant firms an ability to shape markets, allowing them to reap excess profits beyond normally competitive levels by raising the prices for the goods they sell and/or by lowering the prices they are willing to pay for the inputs they purchase (including wages paid to labor) beyond what would be sustainable in more competitive markets. Second, dominant firms have the power to shape material circumstances within food systems through business decisions that affect myriad aspects of food production, provisioning, and trade, for example via their choices of technologies to pursue, the labor conditions they provide, and the locations they select for food retail outlets. Third, dominant firms in concentrated markets have access to disproportionate power to influence food policy and governance via their capacity to spend large amounts on lobbying policymakers, as well as other less direct means that can constrain or override participatory governance processes. These three kinds of power – illustrated in Fig. 3 – overlap with one another in complex and often reinforcing ways. Here we discuss the risks associated with these types of power separately but recognize that they are often deeply interconnected.

It is important to stress that concentration in a sector and the associated access to different kinds of power available to large and dominant firms does not automatically mean that those firms actively *exercise* that power in ways that undermine people's agency in all cases. However, because dominant firms in concentrated industries have privileged and disproportionate access to these kinds of power, there is an underlying power imbalance between these firms and other actors within food systems – namely, consumers, workers, and producers – that can result in constraints on people's agency, even when that power is latent. Moreover, the mere presence of such power imbalances creates the option for firms to exercise that power as and when they wish. It is therefore important to understand the circumstances in which the exploitation of those imbalances occurs and to assess how the risks of associated harms might be mitigated.

4. The power to shape markets

It is well established in the economics literature that concentrated firms can shape the contours of markets in ways that enable them to earn higher profits than they would in a more competitive market, fueling inequities (De Loecker and Eeckhout 2018; Ennis et al. 2019). This capacity, commonly referred to as market power, is a key concern when markets become highly concentrated, as in the case of oligopolies, where just a few firms dominate the sale of certain products, and in the case of oligopsonies, where just a few firms dominate as buyers of products. Dominant firms can use their market power to make decisions that increase prices, lower wages, and reduce market opportunities. For example, when there are just a few firms that dominate in a market with little competition, they can work together – tacitly or explicitly – to raise prices for the products they sell, without worrying that the higher price will be undercut by a lower-priced competitor. Firms in an oligopsony can exercise another kind of market power, often referred to as 'buyer power', whereby they can reduce prices for inputs, such as products they buy from suppliers or wages they pay to workers (Khan and Vaheesen 2017; Eeckhout, 2021). This type of market power is especially problematic for employees and producers, including migrant labor, who have few other choices but to accept those lower prices for their goods or services. Concentrated firms can also use market power to erect barriers to entry for other firms in ways that further dampen competition, which can reduce investment in innovation, as established firms may have fewer incentives to innovate if they are less likely to be challenged by new ideas, products, or systems introduced by incoming firms (Eeckhout 2021; Kurz 2023).

The presence of market concentration alone does not tell us whether top firms are actively exercising market power, and although the CR4 or HHI might give a snapshot of market concentration, it does not always have a straightforward relationship with the exercise of market power. Other factors, such as economies of scale – which occur when a firm is able to lower production costs per unit of output as the size of their operation grows – can mean that consumer prices could fall as firms become larger, which complicates efforts to identify when market power is being exercised. One way to determine if firms are flexing their market power is to look at whether their markups are rising (that is, the amount of a good's price that is over and above a firm's cost to produce that item) to generate increased profit margins (the profit rate after costs) that might be considered excessive (Berry et al. 2019; OECD 2021a). Recent studies in the wider economy suggest that as corporate concentration has become more pronounced, there has indeed been an increase in large firms' average markups, as well as profit levels that have risen substantially across many sectors over the past several decades (Akcigit et al., 2021). The result has been an increase in profits as a share of sales across the economy, as well as a declining share of value added that is allocated to labor (e.g., Akcigit et al. 2021; De Loecker et al. 2020; De Loecker and Eeckhout 2018; Weber and Wasner 2023). Together, these results suggest that some firms are indeed exercising market power.

A key question is whether these trends in the wider economy are replicated in the agrifood sector. Evidence suggests that some of the largest firms in concentrated sectors of the food system do exercise some degree of market power (e.g., Wood et al. 2021b). At the same time, some studies in the economics literature point out that increased concentration can lead to efficiency gains from scale economies and other complex factors that can benefit consumers – and in some cases producers – in the agrifood sector (e.g., Swinnen and Vandeplas 2010; Mérel and Sexton 2017). More research is needed to arrive at a better understanding of the balance between the risks of harmful outcomes and the possible benefits from efficiency gains, which is likely to differ across industries and contexts.

Although the aggregate trends are difficult to trace without further research, there are multiple cases where the exercise of market power in the food system has been blatant and harmful. For example, the top four firms producing frozen potato products in North America, which together control 97 % of the market, were recently served antitrust lawsuits for running a "potato cartel" in which they allegedly colluded to fix prices, leading to a 47 % price increase over the 2022–2024 period (Schwenk 2025). In Canada, four of the five major grocery firms were

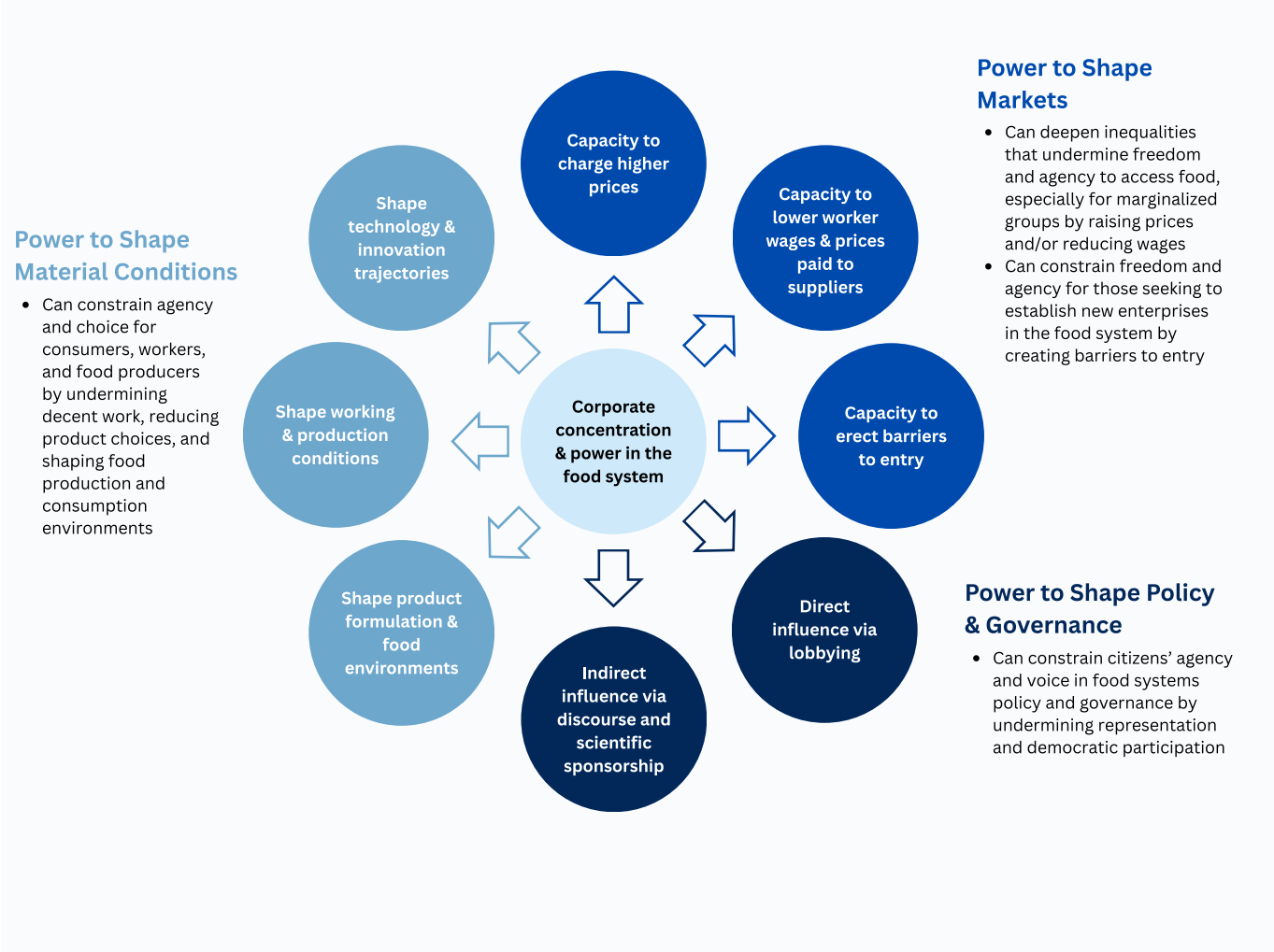

Fig. 3. Pathways via Which Agency is Affected by Corporate Concentration and Power in the Food System.

found to have secretly worked together to fix bread prices at elevated levels in food retail outlets over the course of 2001–2015 (Canadian Competition Bureau 2023b). And in the UK, major retailers were also found by regulators to be coordinating price increases on dairy products in the early 2000s (UK Office for Fair Trading 2011). In each of these cases, price collusion – which is more likely to occur in concentrated markets with fewer firms – led to higher consumer food prices, which negatively impacted consumers' food expenses and access to those foods.

Even in the absence of evidence of explicit collusion, some studies suggest that heightened corporate concentration can lead to harmful outcomes, such as higher food prices (Hovhannisyan et al. 2019; Roberts 2023). For example, grocery retail profit margins have increased in some highly concentrated sectors over the 2020–2022 period, suggesting that firms exercised market power. Although this was also a period of supply chain disruption due to COVID-19 and the Russian invasion of Ukraine, both of which pushed up costs in the agrifood sector, some studies suggest that major grocery retail firms in several countries may have raised prices by more than their increased costs, generating excess profits. In the US, for example, Neilson data indicate that grocery firms' profit margins rose from 1 % in 2019 to approximately 3 % in 2020 and 2021, falling to 2.3 % in 2022 and 1.6 % in 2023 (cited in OECD 2024), suggesting that firms in the sector were able to increase their margins during a period of market turmoil. Indeed, during hearings on its attempted purchase of rival food retail firm Albertson's in the US, major food retailer Kroger openly admitted that it raised the price of milk and eggs beyond its own cost inflation for those items, effectively confirming that it was using its market power to raise prices (Schweizer 2024).

In Canada, the profits of the three largest grocers have collectively grown from CAD$2.4 billion in 2019 to CAD$3.6 billion in 2022, accompanied by what the Canadian Competition Bureau (2023a) called "modest but meaningful" increases in gross profit margins – which rose by approximately 1–2 percentage points – over the 2019–2022 period. A study looking at the US, Japan, and Europe found that food retailers' operating profits increased by 9.6 % during the COVID-19 pandemic (although operating profits in other parts of food supply chains over that same period fell) (Höhler and Lansink, 2021). However, data from other sources suggest that the story with respect to retail profits during the pandemic in the EU and US is less clear-cut, with grocery firms' profit margins reported to be flat or falling 2019–2022 (S&P Global 2023; McKinsey 2023).[1] More research is needed to investigate the exercise of market power in agrifood chains, including within the retail food industry. Food retail profit margins are typically low, and additional research can shed light on whether and under what conditions firms in that sector increase their markups beyond any cost increases to earn abnormal profits, as well as their specific consequences for consumers.

[1] Both the gross profit margin and operating profit margin measure a firm's profitability. The gross profit margin is the profit over and above direct costs of production, and the operating profit is the profit over and above the operating costs of production, which includes a firm's overhead costs.

With respect to farm inputs, there is also concern that market power due to corporate concentration has contributed to rising prices. Several studies have found a relationship between corporate concentration and higher seed prices in North America over the past several decades, which have driven up farmers' production costs (Shi et al. 2010; Torshizi and Clapp 2021). However, an OECD study using different methods of analysis found more mixed and contradictory results with respect to the impact of market concentration on seed prices overall (OECD 2018). Although many small-scale farmers in developing countries acquire seeds outside of commercial channels (McGuire et al. 2016), the global commercial seed market for major commodity crops (such as rice, soy, and maize) is growing in importance in these contexts (Langyintuo et al. 2010). As such, concentration in the sector has potential implications for all producers who purchase seeds. Determining whether corporate concentration leads to higher seed prices is challenging, because data on prices, sales, and markups often remain behind prohibitive paywalls. Seed pricing is an area where more data transparency and research are needed to accurately assess whether and to what extent market power is being exercised and what impacts any such power dynamics have on food producers.

Farmer groups and some analysts have also expressed concern about sharp price increases in the fertilizer sector over 2021 and 2022, where the top firms saw significant growth in their net profit margins (Clapp, 2025). Many farmer organizations accused fertilizer firms of holding back production in order to drive up prices, prompting the US Department of Agriculture to warn that "These companies' possession of scarce resources, often in other countries, and control over critical production, transportation, and distribution channels raises heightened risks related to concentration and competition" (USDA 2022b). Nutrien, one of the top fertilizer firms in the world, openly admitted in its 2021 annual report that the higher prices it was able to charge more than offset the firm's own production cost increases (Nutrien 2021). Fertilizer cartels have operated both historically and in contemporary times in a number of countries with market distorting effects, including in the Global South, promoting antitrust action in some cases (OECD 2024).

Market power can also be used to influence prices in ways that can enhance the profitability of the largest firms. Some of the largest firms in the food retail sector have been accused of using misleading pricing tactics as well as lowering worker wages, sometimes called the "Walmart Effect." For example, in 2000, Walmart was found guilty by regulatory authorities in the US and Germany of selling staple foods below cost (Klein and Lang 2015). Such tactics can force smaller local retailers – who often cannot afford to sell products below cost and thus cannot compete on price – out of business. By clearing out competitors, the large remaining firm has access to more market power, which it can then use to raise prices. Several recent studies have also found that Walmart's wage-setting and buyer power have affected local labor markets in negative ways where Supercenters have been established, for example by putting downward pressure on wages (Wiltshire 2023; Lehner et al. 2024).

The exercise of buyer power has also been problematic in other parts of food supply chains where just a few firms dominate and rely on multiple producers as suppliers – for example, in the fruit and vegetables, livestock, grain, and dairy industries. A number of studies document the disparity in bargaining power between large corporations and suppliers, which can have negative outcomes, such as dominant firms collectively seeking to lower the prices they pay to the producers who supply them (e.g., Wood et al. 2021a; Lianos et al. 2022; De Schutter 2010; Howard 2021). Buyer power is a particular concern in the meat and livestock sector, where there is a high degree of market concentration in most countries (Wise and Trist 2010; Garrido et al. 2022). In the US, for example, most cattle and hog producers only have two to four buyers to which to sell their livestock. A recent USDA study noted that since 2016, as concentration in the meat sector accelerated and capacity became more constrained, "packers have been able to reduce prices paid for cattle with help from a combination of high concentration and limited packing plant capacity" (MacDonald 2024). The use of market power to lower wages also applies in the meatpacking sector. In early 2024, Tyson and JBS, two of the largest meatpacking companies in the world, agreed to pay approximately US$140 million to settle a class action lawsuit for suppressing the wages of workers in their meatpacking plants in the US (Welshans 2024).

In the global coffee, cocoa, banana, palm oil, and grain sectors, small-scale farmers in developing countries are often captive to just a handful of transnational trading firms and thus have little bargaining power. The dominant firms in those industries often impose contract agreements and pursue unfair practices, such as allowing buyer firms to unilaterally make changes to contracts (Wood et al. 2021a). As a result, large and dominant firms in these sectors can in some cases more easily drive down the prices at which they purchase these commodities, resulting in poor compensation for farmers (Stucke 2012; Carstensen 2017). For example, numerous studies show that cocoa farmers' compensation is often suppressed in the face of buyer power among the dominant firms (e.g., Glavee-Geo et al. 2022; De Schutter 2010).

Data limitations and complexities in some of these markets make it difficult to numerically assess the extent to which the widespread and systematic exercise of buyer power takes place in food systems, especially with respect to small-scale producers (Hernandez et al. 2023; Deconinck 2021). Some studies have found that in certain cases large firms provide benefits to contract farmers (Bellemare and Bloem 2018). Other studies note that an increase in the number of processors who buy commodities can sometimes lead to worse outcomes for small-scale farmers in the coffee and fruit sectors due to various factors, such as pre-existing market failures and the impact on investment efforts by dominant firms (Macchiavello and Morjaria 2021; Méndez and Van Patten 2022). Given the diverse findings on the extent to which large corporate actors exercise buyer power and the resultant impacts on small-scale producers in developing country contexts, more interdisciplinary research is needed to thoroughly investigate whether the types of markets and locations matter in how buyer power is or is not typically exercised, and what impacts that may have on producers.

Dominant firms in the agrifood sector also have a long record of creating barriers to entry through their exercise of market power, making it much harder for new firms to enter the market. Such barriers can come in many forms, such as high research and development spending or patents, which can dissuade new entrants that do not have those resources. Such practices are not always intentionally seeking to keep out newcomer firms, but the impact is the same if they discourage new firms from entering the market. In the farm machinery sector, for example, the dominant firms have forced customers to sign end-user license agreements that stipulate that repairs can only be undertaken by authorized equipment dealers and repair shops. Not only does this practice enable the firms to charge higher prices – since users have no choice but to pay what the authorized facilities charge – it also effectively shuts out opportunities for independent repair businesses to thrive and for farmers to undertake self-repairs (Mirr 2020). These practices prompted the US Federal Trade Commission to file a lawsuit against the farm machinery firm Deere & Co. in early 2025 for monopolizing the repair market for its machines and driving excess profits (FTC 2025).

Barriers to market entry are also common in the processed food sector, where the largest and most dominant firms fund expensive advertising campaigns to build brand loyalty and negotiate product placement with retailers, which make it difficult for newcomer firms to compete (Wood et al. 2021a; Bronnenberg et al. 2022). The large grain trading firms also invest in both backward- and forward-linked sectors, such as shipping and food processing, which creates barriers for competitors that do not have similar linkages (Murphy et al. 2012). More research is needed into how to weigh the anti-competitive effects of these kinds of barriers against potential benefits of larger scale operations, which could lower per unit costs due to economies of scale.

The examples cited here show that in some clear cases, the agency of consumers, producers, and workers in food systems has been directly

undermined by the exercise of market power by dominant firms. Where dominant firms charge higher prices beyond their own costs, the poorest segments of society are disproportionately affected (Ennis et al. 2019). There is a risk in many cases that food producers and food workers who supply and work for the few dominant firms in the sector receive lower compensation for their work, and consumers risk having to pay higher prices for their food. When these kinds of outcomes occur, it has direct impacts on people's ability to shape their own circumstances within food systems by limiting their choices. Given that findings are mixed on whether the exercise of such market power is systematic in food systems, more attention and research on these questions is needed.

5. Power to shape material conditions within food systems

Based on their size and significance in the market, dominant firms that sit atop concentrated markets can shape production and processing technologies, working conditions, retail market contexts, and product offerings, simply by making business decisions that matter for their own bottom lines (LeBaron 2021). The kind of influence that large and dominant firms have over the material conditions or features of the marketplace can have real consequences for people's lived experiences and agency because it shapes their capacity to make and act on choices. This kind of influence helps to explain why competition regulators consider the impact of consolidation on innovation. Indeed, there is a longstanding debate over whether mergers might dampen innovation because without competition, firms may focus on selling existing products rather than investing in the development of new technologies and other innovations (Kurz 2023).

These same concerns are present in the agrifood sector, where the largest and most dominant firms have the capacity to shape material conditions within food systems, which can in turn affect people's agency within those systems. In terms of technology and innovation, the dominant agricultural input firms routinely affect innovation trajectories when they make decisions about which technologies they will develop and market (Clapp 2025). The impact of consolidation on innovation in the agrifood sector has long concerned competition authorities. For example, the US Department of Justice sued to block the sale of the Monsanto subsidiary firm Precision Planting to farm equipment firm Deere & Co. The lawsuit cited concerns that if the merger proceeded, just one firm would have an overwhelming market share for precision planting technologies, and this could dampen future technological innovation in that area because the dominant firm would not need to innovate to stay competitive (Crespi and MacDonald 2022).

It is not just a question of whether firms innovate, but also whether they shift their innovation in ways that shape technological trajectories that affect people's agency. For example, in the 1980s-90s, the dominant seed and agrochemical firms invested in the promotion of genetically modified (GM) seeds engineered to work with specific herbicides that those same firms produced and sold. Although genetic modification was a new type of seed technology developed by the dominant firms, it was tailored in a way that helped those firms lock in sales of existing herbicides, in some cases forcing farmers to sign agreements that prevented them from using other herbicide brands (Dupraz 2012). This limiting of farmers' choices is a clear example of an impact on their agency. The growing investment of the largest seed and agrochemical firms today into digital agriculture is another example of how dominant firms in the sector can shape production technologies with implications for food producers' agency. Farmers that sign on to use digital farming platforms – many of which are run by large firms with few competitors – are often required by those firms to sign agreements that they will share data from their farms, which raises questions about data ownership and control. A related concern is the interoperability of farmers' data with other digital farming platforms. In many cases, farmers cannot readily switch between platforms, which creates additional avenues for large firms to control how farmers access data and digital agriculture technologies (Bronson 2022).

Dominant food commodity trading and processing firms also shape material conditions in the sector when they make decisions about where they source the commodities that serve as ingredients in processed foods, as well as whether their suppliers must adhere to certain labor and environmental standards (Ouma 2010, 2015). Although material conditions are also affected by firms' decisions in more competitive markets, the fact that just a few firms dominate in some markets means that those firms can shift market conditions in significant ways that affect material outcomes for other firms, producers, workers, and consumers. For example, the largest global commodity traders sell inputs such as fertilizers, pesticides, and seeds to the producers who are also their suppliers of agricultural commodities, further shaping material aspects of the food system by determining the specific types of technologies used in production for significant portions of the market (e.g., Grabs and Carodenuto 2021; Barrett et al. 2022; Swinnen and Kuijpers 2019).

Additionally, powerful firms in concentrated industries shape labor regimes more directly in sectors where they hire workers, and there are many examples where food industry firms have been criticized for practices that affect workers' agency. For example, in the meatpacking sector, the dominant firms in the US have been accused not only of suppressing wages, as discussed in the previous section, but also of discouraging unionization and resisting efforts to make those jobs safer (Blanchette 2020). Media coverage during the COVID-19 pandemic revealed the poor health and safety practices of the dominant meatpacking firms in the US, which put workers at heightened risk of infection. These practices had a disproportionate impact on poor and racialized populations that make up the majority of workers in the sector, even as the large and dominant meatpacking firms saw their profits soar during the pandemic (Dempsey et al. 2023). Labor conditions in different parts of food supply chains are highly diverse, and much more research is needed to assess environmental and working conditions in large and concentrated food supply chains and the implications of those conditions for worker agency (Meemken et al., 2021).

Dominant food processing firms also shape material conditions in food systems when they make business decisions about how they process and market their products. For example, there is a growing literature investigating the linkages between the activities of the dominant UPF firms and public health outcomes (Wood et al. 2023; Slater et al. 2024; Moodie et al. 2021). Although the presence of market power can lead to fewer dominant firms driving up consumer prices, which could reduce demand for UPFs, the dominant firms can keep prices low by exerting buyer power to push down the cost of ingredients, as discussed in the previous section. And because they are large with access to relatively more resources, these firms can afford expensive marketing campaigns that can affect people's consumption choices and drive up demand regardless of the price of those goods. For example, advertising campaigns can shift consumers' perceptions of the companies and make their products more appealing, which has occurred in both developed and developing country contexts (PAHO and WHO 2015). The soft drinks sector, which expanded by 88 % between 2006 and 2020, is a prime example of aggressive marketing. Both Coca-Cola Co. and PepsiCo, by far the two largest soft drinks firms globally that together control just over 65 % of the carbonated soft drink market, have allocated billions of dollars every year for decades to advertise their products. From 1980 to 2019, Coca-Cola Co. spent US$90.5 billion on advertising, and over the same period, PepsiCo spent US$74.9 billion on advertising (Wood et al. 2021b). Aggressive marketing campaigns are especially troubling when they target vulnerable groups, such as children and young people. One study found that over half of Coca-Cola Co.'s marketing campaigns in East Asian Low- and Middle-Income countries were targeted at teens and/or young adults (Huse et al. 2022). Further research is needed to fully determine the linkages between dominant firms, advertising, consumer choices, and health outcomes.

Food environments are also shaped by powerful firms in the grocery

retail sector. Dominant grocery retail firms' choices about where to locate their retail outlets and what products to stock on their shelves have an important influence over the range of foods from which people can choose. Public health studies have found that food environments matter for people's food choices to at least some extent, impacting the quality of their diets and health outcomes (Westbury et al. 2021; Caspi et al. 2012). In the US, as grocery retail chains became more concentrated via large mergers beginning in the 1980s-1990s, many of the dominant grocery chains moved their retail stores to wealthy suburbs, leading to fewer large supermarkets in what were often poorer geographical locations such as inner cities and remote rural regions. Adding to this problem was the fact that the dominant grocery firms often forced the companies who subsequently bought or leased those properties to accept restrictive covenants that prevented the establishment of new large supermarkets in those locations. Because of their market dominance, these firms had the power to impose such restrictions, which further reduced the possibility of emerging competition that could increase choices for consumers (Leslie 2022). Smaller convenience stores benefitted from the lack of supermarkets in certain areas and were then able to charge higher prices due to the lack of options for consumers purchasing food. Convenience stores also typically specialize in highly processed and packaged foods associated with poor diets and negative health consequences such as obesity, and can disproportionately affect the poor and racialized communities where such stores may be the only option for consumers to purchase food (Cooksey-Stowers et al. 2020). Similar trends have unfolded in many countries around the world, including in developing countries such as Brazil and South Africa, although it is important to recognize that the constraints on food environments unfold in unique ways in different contexts (Kroll et al. 2019; Honório et al., 2021).

The combination of advertising campaigns and retail location decisions of dominant firms can give rise to changes in eating habits, especially when these factors result in certain foods being relatively more accessible. For example, the widespread availability of UPFs compared to fresh foods can have the effect of encouraging snacking over regular meals, because the former are highly palatable and can be quasi-addictive due to their high levels of sugar, salt, and fat (Monteiro et al. 2018). As these types of foods have become more available – at least in part due to their promotion by large companies – many countries have witnessed a shift in diets to include more UPFs, most of which are supplied by large food processing companies (Monteiro et al. 2019; Baker et al. 2020). For example, UPFs now make up nearly 60 % of daily caloric intake in the US, nearly 50 % in Canada, 42 % in Australia, and 20 % in Brazil (Martini et al. 2021).

As these examples illustrate, when just a few firms dominate in food and agricultural markets, they can leverage their power in ways that shape how food is produced and the food environments in which people make consumption decisions. This power carries risks of negative impacts for the agency of those working in those systems, as well as for those who acquire their food from them. Corporate influence over the material conditions of food systems at times has resulted in limited product choices and deeper lock-ins for both food producers and consumers. The business choices made by the largest firms have a considerable impact on consumption patterns because those choices determine what commodities are purchased, how they are produced, and how they are processed – all of which have a direct bearing on the final products that are made available to consumers. These food production and consumption outcomes also have implications for health, especially when they result in increased consumption of highly processed packaged foods (Gaucher-Holm et al. 2023). There is a need for more research to assess how widespread such practices are and to evaluate the full extent of the associated risks.

6. Power to influence food policy and governance

Given their influence over the contours of the market both in economic and material terms, large and dominant firms in concentrated industries have an enhanced capacity to exercise political power (Mikler 2018). As industries become more concentrated, the opportunities to exercise political power become amplified among the firms at the top, because it is easier for fewer large firms to act collectively to exert their political voice and to prevent free riders than would be the case with many small firms (Olson 1965). This exercise of political power by dominant firms and the industry associations to which they belong can work to undermine both individual and community agency by crowding out other voices in the political process. The enhanced political power of dominant firms is one of the reasons that many observers argue that extreme corporate concentration and power is a threat to democracy (Wu 2018; Stoller 2019). Dominant firms can influence policy and governance via a range of strategies, including political donations, direct lobbying of politicians, sponsorship of scientific studies that support their interests, and engagement in public–private partnerships (Gleckman 2018; Legg et al. 2021).

These broader trends of corporate political influence also play out within food systems, where the dominant firms and food and agriculture industry associations pursue strategies to shape food and agriculture policy and governance, often in ways that preserve or expand their profits. Critics contend that this enhanced political voice of large firms curtails opportunities for others to have a say in shaping policy, undermining agency in food systems (IPES-Food 2023; HLPE-FSN 2019). Lobbying policymakers is one of the more direct means by which dominant firms and their industry associations can exert influence over policy and governance processes. For example, agribusiness was among the top ten sectors in terms of lobby spending in the US over the 1998–2024 period, devoting over $3.3 billion dollars to lobbying efforts (Open Secrets 2024). Corporate actors also lobby governments in other countries, although not all countries have transparency rules whereby those private sector actors must disclose their spending and activities, so it is difficult to know how much is spent in total. But it is not the amount of money spent on lobbying that matters the most – what is important is that the dominant firms actively work to influence policy and governance outcomes and often have considerable influence in doing so (IPES-Food 2023). For example, in the UPF sector, Slater and colleagues mapped a loose, multi-level, multi-jurisdictional network of over 250 corporate interest groups that engage in lobbying and other political activities (Slater et al. 2024). Some of the largest companies in the UPF industry, including Nestlé, Coca-Cola, Unilever, PepsiCo, Danone, Marz, and Mondelez, participate in these interest groups. Although it is not always straightforward to measure the political influence corporate lobbying in terms of policy outcomes, there is documentation of its impact in food systems. For example,several recent studies on the introduction of taxes on sugar-sweetened beverages in a number of countries note that corporate lobbying against such measures played a role in such legislation being watered down or dropped altogether (World Bank 2020; Lauber et al. 2022).

In addition, dominant firms in the agrifood sector have been known to influence policy and governance via the sponsorship of scientific studies that support their interests and determine the kinds of questions that are asked, as well as how that research informs policy. This kind of research sponsorship is common in the agrifood sector, from the processed food industry to the agricultural inputs business. Research has shown that industry-sponsored studies in the sector can introduce bias and are more likely to arrive at conclusions favorable to the financial interests of their sponsors (e.g., Fabbri et al. 2018; Mandrioli et al. 2016). Recent examples include court discovery documents that revealed that the large agricultural chemical and seed company Monsanto (which has since been bought by Bayer) actively sought to influence scientific studies on the safety of glyphosate, the key ingredient in its flagship herbicide, since at least the 1990s. The firm funded academic studies and engaged in ghostwriting of scholarly journal articles, and even prepared presentations for the academics it sponsored (Krimsky and Gillam 2018). Similarly, some of the largest meat and dairy

companies in the US were found to have contributed to research that minimized the link between animal agriculture and climate change (Morris and Jacquet 2024).

Major agribusiness corporations also often seek to exert influence over policies and processes in global food and environmental governance spaces. For example, the 2021 UN Food Systems Summit (UNFSS) involved a strategic partnership with the World Economic Forum, which is often seen as promoting the interests of the world's largest corporations. Critics expressed concern about the structure and leadership of the UNFSS, arguing that the lack of accountability, transparency, and rights-based language could lead to the dominance of the most powerful and well-resourced participants (Canfield et al. 2021). The views of powerful corporate interests across a number of food and agriculture industries also permeate other international institutions. For example, in 2020, the FAO formed a partnership with CropLife, a major lobby group representing the dominant seed and chemical companies, which was widely protested by civil society groups (PANNA 2022).

Many of the largest firms in the agrifood sector have increasingly participated in public–private partnerships with food governance institutions and have engaged in the establishment of voluntary measures such as product certification schemes, both of which are avenues they can use to shape policy through direct interaction with governance bodies (Fuchs and Kalfagianni 2010; Challies 2013). For example, three of the world's largest suppliers of salmon feed have been deeply involved in establishing sustainability certification initiatives in West Africa, which have been found to lack representation from small-scale fishers, women fish workers, and civil society. Not surprisingly, critics argue that these initiatives are rife with conflicts of interest and lack mechanisms for transparency and accountability (Wear, Healy and Herrmann 2024).

The presence of corporate interests is also increasing in global climate change forums. For instance, the annual UNFCCC Conference of the Parties (COP) is an important global forum for narrative building, agenda setting, and funding prioritization for climate change research and action. In recent years, corporate representatives have played an increasingly important role in the COP processes (Dinesh et al. 2024). The number of delegates representing big agribusiness attending the COP conference doubled between 2021 and 2022. One report noted that in 2022 the number of delegates linked to large meat and dairy corporations and associated industry lobby groups was larger than the delegations of some countries (Carlile et al. 2023). At the COP28 conference in 2023, the number of delegates representing the meat and dairy industry had more than tripled compared to the previous year (Sherrington et al. 2023).

The agency and freedom of individuals and communities to participate in shaping the governance of food systems is affected by the enormous political influence held by the large firms that dominate in food systems. When markets become highly concentrated and controlled by a small number of large and dominant firms, those firms at the top tend to have enhanced political influence over policymaking, enabling them to more precisely target their efforts to have sway over public policy. This influence risks undermining democratic participation in food systems by not only prioritizing corporate interests in the policy process, but also by weakening the capacity of individuals and communities to have a say in governance decisions because they lack the same kinds of financial resources and channels of influence.

7. Policy considerations

Although many drivers contribute to inequalities within food systems, heightened corporate concentration and the kinds of power it confers to firms is often a major structural factor that can weaken people's agency in myriad ways, as argued above and as outlined in Fig. 3. Corporate concentration can and has in many cases led to higher prices for consumers and lower prices paid to suppliers, including small-scale food producers and food systems workers. It can lead to less choice for consumers, suppliers, and workers by giving firms the power to shape food environments, working conditions, and market opportunities. And it can lead to fewer opportunities to engage in policy and governance decision-making for other food systems stakeholders and rights holders. Because agency is increasingly recognized as a distinct dimension of food security, as well as an important factor in the achievement of human rights and in improving human wellbeing more generally, it is vital that we gain a better understanding of the ways in which corporate concentration and power shape people's relationships to food systems. This understanding needs to go beyond just consideration of price impacts from market power to also include other ways that agency is affected, including through those firms' power to shape material and political spheres. As outlined, there are many cases where agency has been undermined in contexts of concentrated corporate power, and more research is needed to track the extent to which this occurs and to assess the related risks, both of which are important for informing policy.

One area for policy improvement is the need for metrics and data availability in a readily usable form by policymakers. Indicators such as the CR4 – although imperfect – and other evidence that market contexts are characterized by weak competition can still provide a rough guide, flagging instances where extreme concentration might heighten the risk of corporate power harming people's agency in food systems. For example, in cases where the CR4 exceeds 40 % in different parts of food systems, or where there is otherwise evidence of weakened competition despite the CR4 figure, it is important to further investigate – using a range of methods – whether corporate power is systematically affecting agency, and if so, to what extent. This information can then guide policy responses. The research to investigate such cases would require analyzing corporate profit margins and mark-ups over time to determine the extent to which such firms may be using their market power, coupled with qualitative and quantitative assessment of the impact in terms of higher prices, lower wages, and food access. Further research should also undertake detailed qualitative research into the risks and the extent to which the exercise of power to shape material conditions and political spheres may be affecting people's agency. Greater data transparency will be necessary to ensure metrics such as CR4, mark-ups, and profit data are accessible and reliable. In this context, governments can make a greater effort to require firms to publicly report their sales, profit margin, and markup data for the purpose of regulatory oversight, rather than have this information unavailable or behind significant paywalls, as is often the case.

Additionally, stronger competition policies at both the national and international levels could go a long way to preventing excessive market power from undermining agency in food systems in the first place. Maintaining competitive markets would ensure that prices remain fair for both buyers and sellers, reducing the inequalities and power asymmetries that often emerge in concentrated market settings. Such policies can also ensure the existence of diverse markets and products that improve choice for food system participants. There has been a growing movement toward strengthening competition policies in recent years as concentration across the economy as a whole has become more pronounced (Wu 2018). But progress thus far has been uneven, and some parts of the world, such as sub-Saharan Africa, lack strong competition policy frameworks (Shamba Centre 2023). Although competition authorities do currently collaborate to some extent on certain global merger cases and there is some information sharing and cooperation via the International Competition Network, enhanced coordination at the international level could help to provide guidance in developing strong competition policy frameworks and ensure consistency across jurisdictions. Governments can also do more to foster more robust agency by supporting alternative market structures such as territorial markets, which can bring diversity and choice into the marketplace for both producers and consumers. Territorial markets can also enhance competition in markets dominated by large corporate retailers as well as benefit livelihoods of small-scale producers and food processors (IPES-

Food 2024).

Governments can also do more to counter disproportionate corporate political influence over the policy and governance frameworks that matter for food systems. For example, stronger rules on corporate political donations, rules for declaring and mitigating conflicts of interest, and lobbying transparency regarding both expenditures and activities are necessary to ensure that corporate voices do not drown out other voices at the policymaking table. Although some governments have taken measures along these lines, such as lobby disclosure rules (as in the United States, Canada, and the European Union), many countries, especially in the Global South, lack strong rules (OECD 2021b; IPES-Food 2023). In instances where such policies are lacking, it is very difficult to trace with precision how corporate power is shaping policies. The establishment of citizens' bodies and deliberative processes for input into food systems policies are also needed at all levels of governance. The establishment of the Civil Society and Indigenous People's Mechanisms as a formal channel for input into the Committee on World Food Security, for example, can be a model for such inputs in other governance contexts from local to national levels. Such mechanisms can enhance food system participants' voices, especially for those populations that are most affected (McKeon 2015).

Beyond government action, some argue that corporations themselves could play an important part in contributing to improved social and ecological outcomes if they adopt and adhere to values other than profit, and if they used their power to genuinely shift values and practices towards improved social and ecological agendas (Folke et al. 2019, Österblom et al. 2020). Firms may realize that taking such actions can be in their own long-term interest, for example by placing them ahead of the game when more stringent regulations are enforced in the future, or by allowing them to attract financial resources from new developments, such as expanding climate change and climate justice agendas. In such cases, companies could engage in precompetitive work with other civic-minded companies to lobby for stronger and better regulations and improved monitoring of compliance, to set ambitious targets, and to develop incentives to stimulate large-scale social and environmental change and innovation across sectors (Österblom et al. 2022). However, it is important to ensure that dominant firms do not simply push for stronger rules as a way to create barriers to entry for other firms, as this could instead reinforce the market power of the dominant firms.

Many of the current initiatives by companies along these lines are inspired by civil society organizations and are developed in partnerships with nongovernmental organizations, other companies, or even with academics. These corporate-driven initiatives should be met with sound skepticism, however. Key questions of whether proposed changes would be sufficiently sincere, ambitious, and fundamental are valid, as there are obvious reasons for concerns with corporations engaging in "greenwashing" (Meemken et al. 2021; Österblom et al. 2022). For example, the large transnational meat firm JBS, after being sued by the US state of New York for promoting misleading claims about its plans to reduce its environmental impact, clarified that its net-zero emissions pledge was never a "promise", but merely an "aspiration" (Eschenbacher et al. 2025). For corporate-led initiatives to make a meaningful difference, they need to be accompanied by robust disclosure policies, including radical traceability that links company actions to site-specific outcomes, and the development of organizational routines, tools, and approaches that translate strategic intent to real behavioral change (Bebbington et al. 2024). However, disclosure alone is not enough. Corporate-driven solutions must be nested in governance approaches that shape action, not just reporting. So far, the combined effects of state-led and voluntary corporate governance have been far from sufficient to ensure the realization of global agendas such as the United Nations Sustainable Development Goals (Österblom et al. 2022).

In the absence of dominant corporations taking responsibility, grassroot movements and protests – which are sometimes effective in spurring positive change – may become more frequent as a way for people to take action against perceived injustices in food systems (Desmarais 2007; Holt Giménez and Shattuck 2011). Indeed, research shows that such movements are vital for keeping critical issues on the policy agenda as well as for developing sustainable and equitable alternatives for food systems transformation (Rao et al. 2025). Social movements promoting food sovereignty and agroecology, for example, have leveled strong critiques against corporate dominance in food systems and the capture of food governance spaces by dominant firms (IPES-Food 2023). These movements represent one avenue by which people can advocate for and reclaim some of their agency in food systems, and by which they can pressure corporations to respect that agency as well.

8. Conclusion

This paper argues that an agency lens provides valuable insights about the potential consequences of corporate concentration and power in food systems. The rise of a concentrated set of dominant firms at multiple nodes of food systems has conferred different kinds of power to those firms, which enables them to play a key role in shaping markets, material conditions, and policy and governance in ways that advance their own interests, but which can undermine people's agency. When these kinds of power are actively exercised by dominant firms, they play a large role in determining what foods people can access and afford, the remuneration producers receive when selling their crops into food supply chains, what agricultural production methods are employed, the working conditions experienced by food system workers, and the opportunities for food system actors to participate in policy and governance. Where markets are highly concentrated and dominated by just a few large firms, it is important to track the extent to which agency is potentially undermined by corporate power, to assess the risks, and to adjust policies accordingly.

Taking such an approach requires reliable metrics to assess where corporate concentration is likely to lead to the exercise of market power and other forms of influence over food systems in ways that affect people's agency to make choices and exercise voice within those systems. More transparency and reporting in terms of profit and markup data can go a long way to identifying centers of corporate concentration and power that affect people's agency. Stronger policies to encourage more competitive and diverse markets are also needed, as are specific measures to rein in corporate political influence and to enhance citizen participation in food systems policy and governance.

CRediT authorship contribution statement

Jennifer Clapp: Writing - original draft, Writing - review and editing; Visualization, Supervision, Investigation, Conceptualization. **Rachael Vriezen:** Writing - original draft, Writing - review and editing; Visualization, Resources, Investigation. **Amar Laila:** Writing – review & editing, Writing – original draft, Resources. **Costanza Conti:** Writing – review & editing, Resources. **Line Gordon:** Writing – review & editing, Writing – original draft, Conceptualization. **Christina Hicks:** Writing – review & editing, Conceptualization. **Nitya Rao:** Writing – review & editing, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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