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Food regimes at a national scale: a conceptual map

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1. Introduction

Food regimes are a prominent approach to study the role of agriculture and food in global capitalism, being broadly used in agrarian change (Bernstein, 2016; Buttel, 2001) and agrofood studies (Magnan, 2012). A move towards problematizing the spatiality of the food regime approach has been recently identified among food regimes scholars (Moran et al., 1996; Schermer, 2015; Otero, 2016; Rioux, 2018; Jakobsen, 2021; Mukahhal et al., 2022) due to the insufficient attention to the national and regional variability in the experience of food regimes. As Moran et al., (1996) put forward 'some of the characteristics of the production and distribution systems that are assumed in the food regimes literature remain quite differentiated and important national and local political-economic processes are not incorporated into international processes' (Moran et al., 1996, p. 245).

Food regime analysis was 'global' in scope from the beginning (Friedmann & McMichael, 1989). In spite of this, McMichael recently made a distinction between identifying food regime moments -that is, periods of accumulation and associated transitions- and using food regime analysis to identify significant relationships and contradictions in the political history of capital across space and time. In this regards, McMichael contended that, as a method of analysis, food regime analysis 'can be deployed in a variety of ways to illuminate local, national, regional and global processes' (McMichael, 2013, p. 108). There is an emerging body of studies that link food regimes to regional (Pechlaner & Otero 2010; Otero 2012; Corrado 2016; Otero & Lapegna 2016; Wang; 2018; Andrew et al. 2022) national (Dixon, 2014; Ríos-Núñez & Coq-Huelva, 2015; Soldevila et al., 2015; Corrado, 2016; Torrado, 2016; Camarero, 2017; Schiller et al., 2020; Scott Y., 2021, 2022; Mikle & Randelli, 2022), and local (Jakobsen, 2019; Vicol & Pritchard, 2020) scenarios.

Thus, granted that scaling food regimes analysis is needed and also possible, 'the question remains as to how, theoretically and methodologically, we are to approach the interrelations between multiple special loci and scales' (Jakobsen, 2021, p. 3). In this paper, we aim to step forward in answering this question by presenting a conceptual map that portrays the main aspects involved in the unfolding of food regimes at a national scale, with the final goal to advance the understanding of agri-food systems functioning.

We decided to focus on national level because the nation-state is considered a key agent in determining the extent to which global food regimes dynamic materialised in space and time within national boundaries (Moran et al., 1996; Pechlaner & Otero, 2010). This does not mean that we stand for the nation scale as the unique and/or best unit of analysis; rather than this, we hope our proposal helps advance the analysis of food regimes at other scales, such as the regional and local, being complementary to the national one.

The development of the conceptual map is grounded on a literature review of articles that link food regimes to national case studies with the aim of grasping the aspects at which their authors look at. Evidence from the literature review is the first step to figure out the main elements and connections of the conceptual map. We discuss them and propose and enriched version of the conceptual map as a result, further adding a description of the agri-food system according to it.

We hope this conceptual map will be useful for scholars in the fields of agrarian change when investigating national transformations, agricultural development and agri-food studies scholarship (Jakobsen, 2021), as well as in regard to the exploration of new transition paths towards re-localized, agroecology-based food territories (A. Haroon Akram-Lodhi, 2021; González De Molina & Lopez-Garcia, 2021; López-García & González de Molina, 2021).

The paper is structured as follows: after this introduction, in section 2 we address food regimes conceptualization, its evolution and the historization of the first, second and the eventual third food regime. In section 3 we present the methods followed in the literature review. Section 4 includes the results, discussed in section 5. Then, we present our proposal of conceptual map in section 6, and conclude with some final remarks in section 7.

2. Food regimes as a conceptual framework

In this section, we briefly put forward the origin and evolution of the conceptualization of food regimes (section 2.1.), the first and second food regimes (2.2.) and the debates around an eventual third food regime (2.3.)

2.1. The concept of food regime: birth and evolution

In 1989, Friedmann and McMichael published the seminal work *Agriculture and the state system: the rise and fall of national agricultures, 1870 to the present* in which "they explored the role of agriculture in the development of the capitalist world economy and in the trajectory of the state system" (Friedmann & McMichael, 1989, 93). To do that, they organized their argument around the concept of food regime that links international relations of food production and consumption to forms of accumulation broadly distinguishing periods of capital accumulation since 1879. Although the first formulation of food regimes goes back to Friedmann (1987), it was in their joint work in 1989 when Friedmann along with McMichael presented a more systematic formulation of the concept.

The two theoretical approaches underpinning the initial food regime formulation were the regulation theory and the world system theory approach. Regulation theory posed a means to explain the emergence of extensive periods of economic and political stability. It sees capitalism to be stabilized when a mode of regulation (regulatory practices and settings) coincides with a regime of accumulation (the conditions for profit making). (Pritchard, 2009). Periods of institutional stability are followed by periods of crises and recomposition (Campbell & Dixon, 2009). The world-system approach seeks to understand and explain economic and political processes in their global an historical terms. Thus, it emphasized the world-historical conditions that underpin the individual circumstances of economic and political actors involved in the agri-food chains. That is, the multifaceted struggles confronting actors in the world economy are seen as deriving, ultimately, from a system-wide logic of global capitalist accumulation processes (Pritchard, 2009).

By blending the regulationsits and world system approaches and applying it to food, Friedmann and McMichael came up with a 'new way of framing agri-food power relations as well as an approach for agricultural research and policy analysis that moved food from the periphery to the center of wider theories about society and interpretations of the history of capitalism (Campbell & Dixon, 2009), enriching the means available for a historical framing of the capitalist world economy with reference to food and agriculture (Bernstein 2016, 636). Since then, the concept of food regime has significantly evolved,

particularly since the 2000s (Campbell & Dixon, 2009), and further deployed in the so-called food regime analysis. It continues to be in formation (McMichael, 2009). Down below we briefly review some of the more significant evolutive steps.

From Friedmann's side, there has been a movement of the focus from periods of stability or regimes to periods of transition and change between regimes. Her more recent definition of food regime is 'a specific constellation of governments, corporations, collective organizations, and individuals that allow for renewed accumulation of capital based on shared definition of social purpose by key actors while marginalizing others' (Friedmann, 2005, 228). This results in relatively 'stable sets of key relationships and practices' that persist on time. The idea of 'frame' is critical in Friedmann's thinking. A 'frame' is understood as 'an enduring complex of assumptions and implicit rules for interpreting reality'. Friedmann contends that 'food regimes emerge out of contests among social movements and powerful institutions, and reflect negotiated 'frames' for instituting new rules' (Friedmann, 2005, 232). Nevertheless, food regimes hold internal tensions that, eventually, turn into crises and open a new scenario of contestation until a new regime is unfolded. Friedmann has given particular attention to the study of the role of social movements as engines or agents of regime crisis and transformation, expanding this way the thematic scope of food regime analysis (Bernstein 2016, 614).

Taking other direction, McMichael (2009) has emphasised the distinction between identifying food regime moments and using food regime analysis to identify significant relationships and contradictions in capital processes across time and space. In regard to the former, McMichael argues that 'food regimes analysis brings a structured perspective to the understanding of agriculture and food's role in capital accumulation across time and space. In specifying patterns of circulation of food in the world economy it underlines the agri-food dimension of geo-politics, but makes no claim to comprehensive treatment of different agricultures across the world' (McMichael, 2009, 140).

Recently, Bernstein (2016) has contributed to a better understanding and framing of the purpose and scope of food regimes encapsulating some of the key ideas of food regimes analysis so far. He succinctly posits that food regime analysis considers some fundamental questions in the changing political economy of capitalism since the 1870,

being *Where, how and by whom is (what) food produced in the international economy of capitalism; Where and how is food consumed, and by whom?; What are the social and ecological effects of international relations of food production and consumption in different food regimes?*. To answer these question it is necessary to investigate food regimes' determinants and drivers, shape, consequences, tensions, crises and transitions. Bernstein identify eight key 'analytical elements' or 'dimensions' of that bear on them. These are:

1. *The international food system*
2. *International divisions of labour and patterns of trade*
3. *The 'rules' and discursive (ideological) legitimations of different food regimes*
4. *Relations between agriculture and industry, including technical and environmental change in farming*
5. *Dominant forms of capital and their modalities of accumulation*
6. *Social forces (other than capitals and states)*
7. *The tensions and contradictions of specific food regimes*
8. *Transitions between food regimes*

These 'analytical elements' are used in Bernstein's work to review the food regimes (the first, second and eventual-third food regimes) in modern history. We will go back to this issue in section 2.2.

In addition, Bernstein has also summarized the main (and 'little', according to Bernstein) critiques that food regime analysis has received so far. An early substantive critique was elaborated by Goodman & Watts (1994, 1997). These authors disagreed with Friedmann and McMichael's periodization of recent capitalism regulation theory to agriculture, particularly the shift from Fordism to Post-Fordisms, contending that 'the parallels between agriculture and industry are radically overdrawn' (Goodman & Watts 1994, 5). Instead, they argued for taking into account the differences between agriculture and industry, with particular emphasis on territoriality and spatiality as a factor of differentiation. Besides, they pointed to need to consider the role of states in the regulation of agriculture and the importance of contingency, polyvalence, heterogeneity, and the like.

Other of the main critiques came from Araghi (2003), who has pointed the centrality of value relations and labour in food regimes. Araghi argues that 'global agriculture and food are inseparable from the production of labour power' (Araghi, 2003, 51). That is, food is intrinsic to capital's global value relations since it is central to the reproduction of wage labour, and other forms of labour coming under capital's way (McMichael 2009, 154). Therefore, using Berstein's words, 'purgued of regulationist and similar theoretical contamination, the fruits of food regime analysis can be incorporated in global value relations as the proper framework for investigation the history of world capitalism/imperialism' (Bernstein, 2016, 633). Going further in Araghi's argument, the concept of 'global value relations' he uses 'include the politics of state relations, the world market, colonization and imperialism, and the (often geographically separated) labour regimes of absolute and relative surplus value production' (Araghi 2003, 49). This concept emphasizes the dialectical/relational and contradictory unity of the production of absolute and relative surplus value. Based on this, he proposed his own historical framing.

Finally, Bernstein (2016) himself raises some critiques -or 'absences'- in regard to food regimes framework. In spite of the fact that food regimes have expanded its scope in the last decades, including new issues -primarily related to the debate around the third food regime (Campbell & Dixon, 2009)-, Bernstein points to the question of population and 'the peasant question'. With the former, Bernstein criticises that food regimes do not take into account the sharp increase in the number of people that needs to be fed over the last centuries, lacking a demographic dimension. With the later, Bernstein points deficiencies from a conceptual-analytical standpoint, including a lack of an adequate theorization and specification of peasants and family farmers as an 'awkward class' of small agri-food producers that have unexpectedly remained in place under a capitalist global system (Haroon Akram-Lodhi & Kay, 2010a, 2010b; McMichael, 2008; Netting, 1993; Shanin, 1971, 1972).

The big issue of the old 'Agrarian Question' (Bernstein, 2010; Byres, 1995, 1997) is why, contrary to the industrial and financial sectors, agri-food production has largely been kept in the hands of peasants and small family farmers until now (Shiva, 2016). This can be better understood when the answer is connected to the historical food regimes and

their crises (Moore, 2008). On the one hand, peasants' endurance has a lot to do with the everyday resistance through their own 'weapons of the weak' (Scott, 1985) and 'arts of farming' (Ellis, 1988; Altieri, 2002; Altieri & Nicholls, 2005; Altieri & Toledo, 2011; van der Ploeg, 2014, 2018). On the other hand, this endurance has also made it possible to keep food inexpensive enough to compress this basic component of working-class family budgets. And this, in turn, fixes the cost of reproducing labour for the other economic sectors, while leaving enough purchasing power to support the solvent demand on which economic growth and capital accumulation depend. If, as agroecology claims, the 'art of farming' is based on co-producing with nature, the dynamics of capital accumulation must always keep nature, food, energy, and labour cheap (Moore, 2015b, 2015a; Akram-Lodhi, 2021). This conceptual link between the approaches of the Agrarian Question and the Food Regime can help explain why the functioning of the market throughout the agri-food value chains has been so asymmetric that it is not comparable with any other economic sector (IAASTD, 2009, and has been so heavily regulated by states, financial corporations, and global institutions for so long until nowadays (IPES-Food, 2016, 2019).

As a final remark, we consider important raising the issue of the character of food regimes from an epistemological point of view. This issue has not been addressed so far. The terms 'food regime concept', 'food regime framework', 'food regime analysis', 'food regime approach' and 'food regime theory' are used indifferently -paradigmatic examples are (Campbell & Dixon, 2009; McMichael, 2009; Bernstein, 2016)-. We consider that the food regime provides a useful conceptual framework to understand the long-term evolution of agri-food systems in industrial capitalist societies, but it needs to verify its assumptions with more empirical data (Krausmann & Langthaler, 2019) to clarify concepts and historical disputes that remain unresolved. Among them, the role of national regulations and policies requires downscaling the global framework of Food Regimes to study them with more specific and empirical approaches.

2.2. The First, Second and (eventual) Third Food Regimes

Since 1870, two periods of historical stability in food and agriculture -food regimes- have been identified. In this section, we highlight the essential features of the first and second

food regimes to then comment the debates around the emergence of an eventual food regime from 1980s onwards.

2.2.1. The first food regime

The first food regime (Friedmann & McMichael, 1989) or 'diasporic-colonial food regime' (Friedmann, 2005) emerged in 1870 and lasted up to 1914/1930s. It arose in the form of a world wheat market, being the first price-governed market in staple food, under the British hegemony. Prior to this, colonial agriculture had already extended over many regions in Africa, Asia and South America and had an important role in supplying imperial states with exotic food (pepper, sugar), 'preciosities' (silver) and some bulk commodities (such as guano, wood, and cotton) mainly used as raw materials for industry (Wallerstein, 1989; Hornborg, McNeill, & Martinez-Alier, 2007). Yet, these products were not essential for the subsistence of European empires, nor did they compete with their agricultural production. It was the shift in the role of imports from 'exotic' to staple food what marked the difference.

The first food regime emerged in a moment of social unrest and hunger in Europe that triggered a new 'consensus' between the state, industrial employers, landowners and capital farmers, and social movements. The repeal of the Corn Laws in 1846, resulting from the division of agricultural farmers in the Britain (Winders, 2009) and the growing power of industrial and commercial segments, was an essential pre-requisite. In line with this, the first food regime was framed within a general rhetoric of free trade and the actual working of the gold standard, which played a key role in regulating international currencies and trade (Friedmann, 2005).

In this scenario, imports products from settler-states of North America and Australia (mainly wheat and meat) to European imperial powers were combined with exports of labour and capital from the latter to the former (Krausmann & Langthaler, 2019). Cheap food from colonies was for the first time critical in provisioning emerging European industrial classes (Moore, 2008). Therefore, this regime was characterized as an 'extensive' form of capitalism: increasing food supply at lower prices contributed to the accumulation of capital in the agrarian sector and beyond by limiting the increase in

labour costs (Friedmann & McMichael, 1989; Akram-Lodhi, 2019). At the same time, cattle ranchers and farmers who extended monocultural agricultures in the new settler states demanded industrial manufactured goods from European metropoles. In this regard, the nature of specialized commercial agriculture was industrial itself (Friedmann, 1978), resulting in a form of 'development' as an articulated dynamic between agriculture and industrial sectors (McMichael 2009, 141). Territorial expansion was also a key driver for the spread of railway and thus European and international profits (Friedmann, 2005, 235). In McMichael's words, the 'British's 'workshop of the world' project linked the fortunes of an emergent industrial capitalism to expanding cheap food supply chains across the world' (McMichael, 2005, 272).

The first food regime produced at least three critical outcomes that transformed social and ecological relations between Europe and the European settler states. First, it made possible the emergence of a new class of settler family farmers in the emerging states where world agricultural frontiers were expanded. European settlers, who migrate due to economic and political reasons, intended to establish themselves as farmers and to stay. This brought about a new phenomenon: fully commercial farm based on family labour specialized in monocultural export crops. These family farms were dependent on distant export markets and at the mercy of the private interests of railways, banks, and grain merchants as well as of the states that organized the grain trade (Cronon, 1991). The fact that these new class of family farmers could only exist through an international grain commodity trade articulated from Chicago to New York and London, also entailed that they would suffer most from a collapse of the regime (Friedmann 2005, 236-237). Simultaneously, this articulation process of global integrated market of food commodities (Abel, 1980) generated a distinctive farm politics expressed in new agrarian social movements (Magnan, 2012; Edelman & Borras, 2016) that would play a role in shaping the second food regime.

Secondly, the first food regime was key to the creation of a system of national economies governed by independent states. This was one of two simultaneous and contradictory movements: the culmination of colonialism (articulated on colonies of 'occupation') and the rise of the nation-state system that emerged and/or were consolidated both in

Europe and in colonial 'settlement' of European offshoots (Friedmann & McMichael, 1989, 96-97).

From an environmental point of view, extensive monoculture in virgin soils occupied by settlers led to soil fertility depletion and eventually to water depletion, causing significant environmental problems -made apparent, among others, by the so-called 'Dust Bowl' in North America- (Friedmann 2005, 236-237; Krausmann & Langthaler, 2019; Cunfer, 2004 and 2021). This, along with the fall in agricultural prices originated by overproduction (Offer, 1991; O'Rourke, 1997; O'Rourke & Williamson, 2001) were the drivers of the collapse of the first food regime (Koning, 1994; Friedmann, 2005; Winders, 2009).

2.2.2. The second food regime

A period of instability and reordering of agri-food consumption and production relations followed the end of the first food regime. During this time, the emergence of the US as the new hegemonic power, and the influence of farm movements within US politics, and in many other parts of the world until the aftermath of WWII (Edelman & Borras, 2016) were key drivers in the unfolding of a new regime.

According to Friedmann & McMichael (1989), a second food regime can be identified from 1947 to 1973, characterized by a state-led model of national regulation of agriculture under the US hegemony. This is why it was later termed as the '*mercantile-industrial* food regime' (Friedmann, 2005, 240) and *'US-centered intensive food regime'* (McMichael, 2013, 32-38). This new period of stability witnessed two critical opposing movements, tough: the extension and completion of the international state system to former colonies, which became independent states, and the transnational restructuring of agricultural towards agri-food complexes by agri-food capitals/global agribusiness corporations.

The strongest expression of the mercantilist character of the second food regime was food aid: subsidized exports from the US in exchange for 'soft currencies' –i.e., currencies not convertible to dollar- held by the US government as 'counterpart funds'. The role of Bretton Woods monetary system was thus essential to this. Food aid was created as a mean for providing an outlet for US surpluses. It was first originated with the Marshall

Plan in 1948. Once European agricultural production was restored, food aid was aimed at poorest nations in the periphery through the Agricultural Trade Development and Assistance Act of 1954 or Public Law 480 (PL 480) (Friedmann, 1983; Winders, 2009).

In addition, the regime was framed in an understanding of 'development' as 'national industrialization growth' (Friedmann, 2005), termed as the 'development project' by McMichael (McMichael, 2009). In the South, the 'development project' was seen as key to the completion of the state after decolonisation. 'Development states' internalised the model of national agro-industrialisation, adopting Green Revolution technologies (McMichael, 2009, 141). Thus, the second food regime was characterized by a technical change involving mechanisation and an increase in the use of chemicals and fertilisers that tightened the linkages between industry and agriculture. This resulted in an intensification of agriculture that led to an even larger increase of surpluses in the US, and later on in Europe. This explains that in European states the 'replication' of US model of national regulation of agriculture soon included support prices and export subsides (Bernstein, 2016).

Internal subsidies paid to sustain farmer's incomes in the US and EU were necessary to offset the farmers' curse on the increasingly abundant crops they grew with the green revolution. The prices they obtained from increasingly asymmetric food markets fell, while the cost of industrial inputs rose steadily. The former was good not only for the oligopolistic wholesale and supermarket chains, but also for further compressing the share of food in household consumption baskets of the rest of working class so as to divert greater proportions of their income to purchase consumer durables produced by the new Fordist factories. The latter side of the coin was the lower value added retained by small family farmers, leading them to the dilemma of either give up and migrate to growing industrial sites, or try to stay afloat in the vicious circle of cultivating more land more intensively with more expensive external industrial inputs (synthetic fertilizers and pesticides) and heavier machinery (González de Molina et al., 2020). But the unattainable promise of economies of scale was always in vain for them, who could only survive by also becoming dependent on public subsidies largely hoarded by wealthy landowners. The subsidies paid both to the primary producers and to the food exports managed by

big traders became a key part and parcel of the new roles assumed by public policies in the national states of the Global North during the second food regime, aimed at fostering economic growth with the spread the oil-based second industrial revolution.

In this scenario, a new division of labour and patterns of trade emerged. The US became the dominant exporter so far. Europe turned into a self-sufficient region shortly after the I World War and eventually a major export region (Friedmann, 2005). The new nations of the South welcomed cheap US food exports as a means to foster industrialisation and proletarianization during the attempt of state-led growth policies like the CEPAL ones carried out in Latin America before the neoliberal turn imposed by the external debt crisis in the 1980s (Infante-Amate et al., 2022) again another example of the key role of national policies under the second food regime. Local farming, unable to compete with US subsidized imports, was undermined as a result. The ultimate outcome of this process was the beginning of an import-dependence path in the region, despite the fact that some countries experienced notable increases of cash-crop yields and exports due to the state promotion of Green Revolution technologies in the Global South (Friedmann & McMichael, 1989; Bernstein, 2016) . Food aid thus helped to build up future commercial markets for US agricultural goods eliminating competition (Friedmann, 1990, 1993; Winders, 2009), while it also became an instrument of the foreign policy of the United States against the Red armed insurgent movements that proliferated across the Global South in the framework of the Cold War (Patel, 2013; Picado, 2022).

An outcome of this was the simplification of agro-ecosystems that, along with the use of chemicals and pesticides, led to detirmental environmental impacts. Furthermore, rural communities based on mixed farming cultures were marginalized, threatening loss of both indigenous cultivars and knowledge (McMichael, 2005).

Paradoxically, within the regulated spaces of the second food regime large industrial firms or agribusiness emerged -mainly of US capital-, playing a key role in the reorganization of food and agriculture and gathering increasing power. Agribusiness created transnational linkages between national farm sectors, subdivided into specialized activities linked by global supply chains, which resulted in transnational agri-food complexes: the 'intensive meat complex' -linking grain/carbohydrate, soy/protein, and

lot-feeding- and the 'durable food complex' (Friedmann & McMichael, 1989; Friedmann, 2005; McMichael, 2009). The change in diet was an unavoidable transformation from the consumption side, going hand in hand with such restructuring process. Traditional diet gave way to standardized mass consumption with a prominent increase of meat. In fact, beef was considered 'the symbolic centre of the post-war diet' (Friedmann & McMichael ,1989, 106). As a result, agribusiness led a process of transnational accumulation which 'doubtly undercut the independent capacities of states to regulate domestic production and trade' (Friedmann & McMichael, 1989, 94).

As a final remark, and as we advanced below, US farmers movements had largely influenced the US policies and, as the hegemon at that time, were critical in shaping the second food regime (Friedmann, 2005). What is more, the policical power enjoyed by US farmers explained why the US introduced a form of domestic subidy that led to government held suprluses and required import controls, among the many forms agricultural protection could take (Winders, 2009).

The loss of political weight of these farmes in favour of agribusiness, with more effectives loobying was contributed to the vanishing? of the regime. However, the catalyst of its demise was the "deténte" between the US and the Soviet Union in 1972/1973, which facilitated Soviete-American grain deals and cleared US surplusses stocks. Food aid in other countries was suspendend. In consequence prices sharply increased -the price of wheat and other grains and oilseed more than tripled- provocking the World Food Crises in 1974 (Friedmann, 2005). Other factors contributing to the end of the second food regime were the rise of energy prices, the incrased of state debt particularly in the South and the increase of international competition due to the entry of NACs (Friedmann, 1993). Meanwhile, neoliberal polices centered on trade and finance triumphed in the 1980s and 1990s (Friedmann 2005, 248).

2.2.3. The emerging third food regime

The first and second food regimes are well established in the literature. In contrast, the period after the crises of the second food regime has been a disputed arena among food regimes scholars, without a consensus on whether a new third food regime has

completely unfolded since the 1980s up today (Jakobsen, 2021). Below, I summarize the main views on this issue.

Early contributions were made by Pistorious & Van Wijk (1999) who, focusing on the leadership in agricultural development, envisioned a Third agro-food order since the 1980s characterized by a replacement of sates by private industry in Research & Development investment (McMichael, 2009).

Then, Friedmann (2005) suggested the emergence of what she called the 'corporate-environmental food regime' that would result from a larger restructuring of capitalism in response to 'green' issues. That is, Friedman links the potential new food regime to 'green capitalism', a concept that refers to a new 'ecological' phase of the capitalism entailing 'a shift in rules of economic activity so that profits are renewed through less depletion of resources (which can mean lower raw material costs), less pollution (which can create demand for new technologies), and selling products that are culturally defined as environmentally superior' (Friedmann, 2005, 230).

In line with Friedmann's approach, which emphasises the role of social movements as engines of change (see section 2.1.), the emerging 'corporate-environmental food regime' arises, all in all, as a response to pressures by social movements. That is, concerns regarding safety issue or the environmental impact of food production. In Friedmann's view, this explains that since the early 1970s a web of enterprises had started to produce and market certified organic food.

This emerging food regime would involve a reorganization of the food supply that complemented the provision of transnational rich consumers -keen and able to buy 'green' high quality food- and poor classes that could only afford cheap industrially ultra-processed food. In both cases, this reorganization would be led by private capitals, other of the features of the emerging food regime. Yet, Friedmann argues that national states continue to play a key role in regulating food and agriculture, since private capital alone cannot regulate conditions of production, such as land use, labour markets cross-border temporary labour migrations, or of consumption (mainly from a very limited food safety approach). This way, Friedmann (2005), concludes that tension at the heart of the *emerging corporate-environmental food regime* is the struggle over the relative weight

of private, public, and self-organize institutions, given that the emergence of organic production through differentiated market niches has been also an outcome of many grassroots social and agroecological initiatives from below.

Despite the fact that Friedmann did acknowledge the looming shape of a new emerging food regime, she concludes that the regime has not completely unfolded, since the set of more sustainable relations on which regimes rests is not visible yet (Campbell 2009). In contrast, McMichael (2005, 2009) does identify a third 'corporate food regime' which, despite carrying legacies of the previous regimes, expresses a new moment in the political history of capital (McMichael 2005, 273).

McMichael characterizes it as a vector of the 'globalisation project' (McMichael 2009, 148) -'a politically-instituted process of economic liberalisation privileging corporate entities and rights in the food system, with respect to crop development and the management of 'food security'- as a service performed not by nation-states, but by transnational corporations through the world market.' (McMichael 2009, 152)-. This quote bluntly portrays the core features of the regime, being a tendency for liberalization of markets and privatization (yet with exceptions, as we will see below), favouring and led by private corporations operating at a global level. In doing so, the 'corporate food regime' defines a set of rules institutionalizing corporate power in the world food system (McMichael, 2009).

The determination of a 'world price', artificially depressed due to dumping subsides in the US and EU and the strong and growing asymmetry at the beginning and end of agri-food value chains (IPES-Food, 2016) is critical in the functioning of the corporate food regime. It works as mechanism in the articulation of the 'world agriculture' -referring 'not to the entirety of agriculture across earth, but to a transnational space of corporate agricultural and food relations by commodity circuits' (McMichael, 2005, 282)-, which makes possible 'accumulation of dispossession'. It does so by undermining local farming (and thus, local markets and cuisines), which are unable to compete with subsidized prices. Thus, rural and urban populations are increasingly incorporated to consumption relations into global agro-export circuits and therefore to accumulation process.

In this regard, the World Trade Organization (WTO) plays a major role, being considered as the 'key institution' of the regime. McMichael explains that the recent political determination of world agricultural commodity prices emerged through the Uruguay Round negotiations, which sought to stem the escalation of farm subsidies and manage the crisis of overproduction arising from the U.S. and European Community agricultural policies (McMichael, 2005). Since then, under the rhetoric of free trade the WTO promotes world agricultural trade, forcing Southern states to reduce their agricultural protections and food security concerns while it preserves subsidies for the Northern powers (McMichael, 2009).

As a consequence, a new international division of agricultural and labour takes shape, characterized by Northern exports of staple grains to the South, and Southern exports of 'exotic' food to the North (Krausmann & Langthaler, 2019; Infante-Amate et al., 2022). This division is further combined with the distinction of two main categories of food, being 'food from nowhere' (cheap food coming from 'world agriculture') and 'food from somewhere' (organic place-based food) (McMichael, 2009).

This duality is also at the center of the main contradiction of the *'corporate food regime'* from McMichael's view. He argues that 'agriculture without farmers' -i.e. industrial/farmless agriculture- and the environmental and social damages it brings about are leading to the flourishing of agroecologically-oriented practices and movements as a response. La Via Campesina exemplifies by far the major counter movement, expressing 'food sovereignty' as an alternative model and moral economy (McMichael, 2005; Narotzky, 2012; Homes & Narotzky, 2019). What is more, agroecology is gaining ground and legitimacy in international organizations, such as the FAO (HLPE, 2019) and among producers. These emergent relations opposes the dominant ones performed by corporate firms (McMichael, 2009; Akram-Lodhi, 2021).

Apart from this major contributions, other authors have also added to the debate of the eventual third food regime.

Burch (2007) and Burch & Lawrence (2005, 2009) linked the rise of the retailing sector to an argument about the appearance of a growing feature in the third food regime and resituate food regime history in context of the transformations of financial relations,

suggesting a 'financial food regime'. They argue that financialization has become endemic to the food industry, from supermarkets establishing their own financial services in partnership with banks, acting like private equity companies, and so on.

Burch & Lawrence (2005) firstly envisioned a new third food regime resulting from a restructuring of the agri-food system driven by the strengthening of retailer's dominance of the supply chain hand in hand with the emergence of new consumer patterns. They pointed to the 'own brand' supermarket's revolution as the key driver of this restructuring since it allowed retailers to gain significant shares in food and beverages markets, and facilitated the introduction of new products meeting convenience, freshness and novelty criteria on a flexibility and adaptability basis. In producing their own brands, supermarkets increased even further their market power over farmers and manufactures from a privileged position, determining the terms of production, and thus extending their control over the supply chain. Some manufacturing firms shifted to produce exclusively for 'own brands' products, exemplifying the peak of this process.

Then, grounding on the latter work and others (Burch, 2007; Burch & Lawrence, 2005, 2007), Burch & Lawrence (2009) further linked the raise in the dominance of retailers with the process of 'financialisation', suggesting a 'financialized third food regime'. Putting it straightforward, Burch & Lawrence's central argument is that the growing involvement of finance institutions in the agri-food system as they were never before while retailed-led agri-food companies increasingly behaving like financial institutions -what they call 'financialisation in reverse'- provide us with the outline of the new regime. The authors use the example of hedge funds and private equity takeovers to exemplified it.

In addition, Burch & Lawrence go further in their argument and explain that the decline in the rate of profit in the post-War Keynesian period along with the transformation in models of corporate governance towards 'sharehold-capitalism' were behind the current processes of financialisation (Burch & Lawrence 2009, 269), which was further associated with enchanced capital mobility at a global scale (Burch & Lawrence 2009, 270).

Pritchard (2009) also contributed to the debate on the eventual third food regime putting the focus on the WTO. In his regard, the key question for food regimes scholars is

whether agriculture's incorporation into the WTO should be understood as facilitating a free market 'third' food regime', in which food–society relations are governed by the overarching politics of the market, o whether it represents a state-centred carryover of the crises of the second food regime which it is incapable of resolving. Pritchard argues that the collapse of the Doha Round negotiations in July 2008 resolved this question in favour to the second option. That is, 'that the WTO is more appropriately theorized as a carryover from the politics of the crisis of the second food regime, rather than representing any putative successor' (Pritchard 2009, 297), thus arguing against the idea of a third food regime so far.

More recently, a new strand of the debate has surfaced regarding the re-emergence of China's power and its impact in the reordering of the food regime through agro-food production, trade and finance (Belesky & Lawrence, 2019; McMichael, 2019)

Belesky & Lawrence (2019) contend that the food regime is in a period of fluidity with a transition towards an increasing polarity and highlight the importance of China re-emergence as an economic power and its distinctive variety of state-led capitalism and neomercantilist strategies in the agri-food sector. Moreover, they argue that 'the analytical contours of the current food regime cannot be adequately comprehended without recognising the importance of state-led capitalism and neomercantilism and the ways in which these socio-political and economic dynamics are reshaping relations of power' (Belesky & Lawrence 2019, 3).

McMichael, despite of acknowledging China's growing power, argues that it is 'premature to define a future food regime trajectory' and that 'China's current engagement does however offer a lens on a transitional process, taking into account the dynamic combination of conjunctural relations, but not assuming China will necessarily become a new hegemon' (McMichael 2019, 26).

As a final point, Green (2021) bluntly summarizes that the arguments regarding China's dominance in global food trade and the reconfigured food regime relation that resulted from it tends to be based on one of three primary claims, or some combination of them. First, China has adopted a neomercantilist foreign policy that aims to secure access to

agro-food imports for domestic consumption. Second, the Chinese state has channeled sovereign wealth funds into state-owned and private enterprises to expand the international influence of its agribusiness industry and challenge transnational corporations' control over agro-food production, processing, and distribution. Third, China has both entrenched, and reconfigured, the dominant relations of neoliberal market rule for its own strategic purposes' (Green 2021, 4).

3. Literature review: methods

In this section, we portray the methods followed to conduct the literature review, which aims at identifying the aspects addressed when investigating national scenarios through food regimes' lens.

We followed the guidelines set by the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA)[1] (Page et al., 2021) despite the fact that we did not conduct a systematic literature review on food regimes in general. In this research, the utility of PRISMA guidelines lies in facilitating a clear and concise way of reporting the steps followed in the review.

We set the following inclusion criteria:

- First, studies must use food regimes analysis/perspective/framework/approach/lens. Only studies in which authors clearly identified it were included. In case a study followed more than one approach, food regimes must be the main one. (criterion #1).
- Second, the scale of analysis must be national (criterion #2).
- Third, studies must be written in English or Spanish (criterion #3).
- Fourth, only peer-reviewed scientific literature is to be included (criterion #4).

Studies were identified from direct search in SCOPUS[2] on the 25/07/2022. We used 'food regimes' as search term (including titles, abstracts, and keywords). Apart from that, we set the following criteria based on the searching engine options:

[1] http://www.prisma-statement.org/
[2] https://www.scopus.com/

- *Time*: 1989 to 2022 (included). The search time starts in 1989, with the publication of the seminal work by Friedmann & McMichael (1989) that gave birth to the 'food regimes' concept.
- *Subject area*: We included 'Social Sciences', 'Agricultural and Biological Sciences', 'Environmental Science', 'Arts and Humanities', 'Economics, Econometrics and Finance', 'Earth and Planetary Sciences', 'Energy' and 'Multidisciplinary'.
- *Document type*: 'article', 'review', 'book chapter', 'book'. We excluded: 'conference paper', 'note', 'editorial', and 'short survey'.

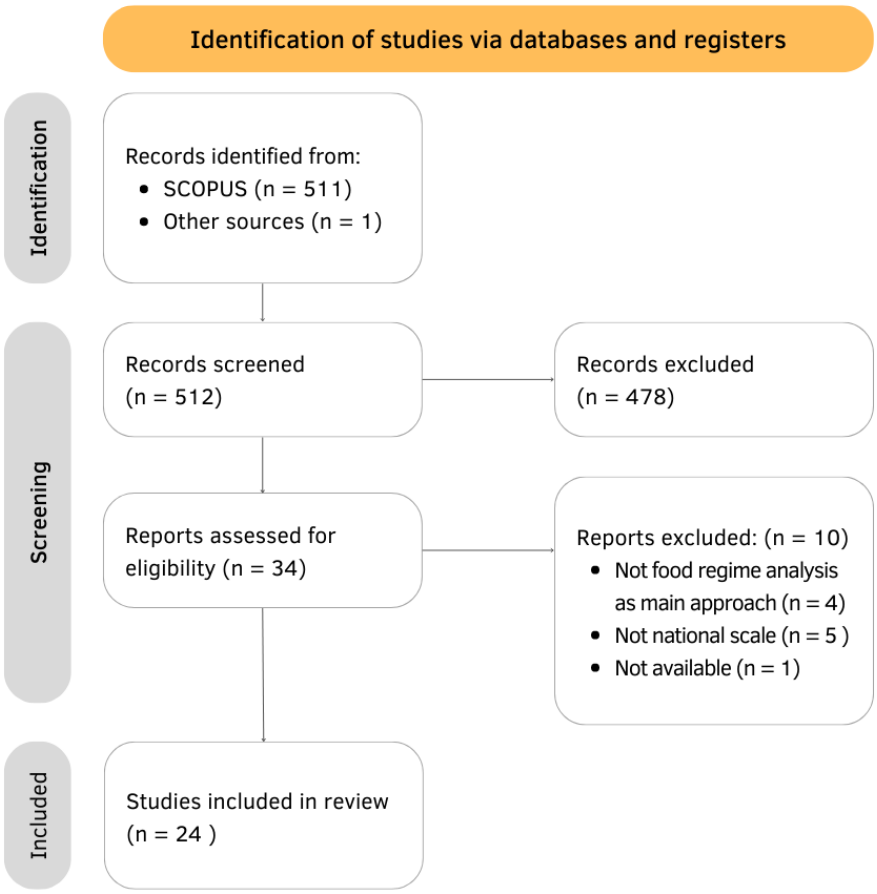
511 records were identified from the SCOPUS searching meeting these criteria. We added an extra study about which we had already know (Soldevila Lafon et al., 2015). This way, we identified 512 records for screening (see figure 1). The selection process was conducted by co-author A (Parajuá). In most cases, abstracts contained sufficient information to determine whether studies met the criteria or not. If this was not the case, studies were fully examined until a decision could be made regarding its eligibility.

478 were excluded after screening. From them, 404 (84.5% of total exclusions) were removed because of not meeting criterion #1 (approach); 73 studies (15.3%) because of not meeting criterion #2 (scale); and 1 study (0.2%) because of not meeting criterion #3 (language). Particular consideration needs to be made regarding the studies by Jakobsen (Jakobsen, 2018, 2019) and (Brown, 2020), in which they further develop the food regime analysis with the inclusion of Gramscian theory to then examine the case of India. After a deep evaluation, we decided to exclude them from the review since we consider their main point is expanding the food regime analysis rather than applying it at the national scale. Thus, we better include them in the discussion in section 5.

After a deep reading of the 34 studies assessed for eligibility (see figure 1), 24 of them were finally included in the review and 10 excluded (see figure 1). Among the 10 studies excluded, 4 of them did not use food regimes analysis as the main approach, despite the fact that their authors linked their research to food regimes scholarship (Roche, 2012; Scott, 2022) or aimed to contribute to the expansion of food regimes analysis, arguing for the need to take into account local scales (Lapegna & Perelmuter, 2020) and the production relation of paid and unpaid work (Camba, 2019); 5 of the articles approached

a world level scenario, examining the role of China in the global food regime reordering (Belesky & Lawrence, 2019; McMichael, 2019; Lin, 2021; Wesz Junior et al., 2021) or local scale (McKenna et al., 1998). Finally, 1 of them was excluded because it could not be found.

Figure 1. Reporting of the literature review selection process



From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

For more information, visit: http://www.prisma-statement.org/

In regard to the data collection process, in the first place we created an Excel document in which we the included the following items for each of the reviewed articles: year of publication; author(s); title; journal; key words; country; period of study; food regime(s) addressed -i.e. first, second and/or third food regime-; main focus; sources; terminology used to identify the approach -i.e. food regime analysis, food regime theory, etc.-; summary of aspects of food regimes at which authors looked at, including a synthetic description of the variables they entail, and key remarks for a better interpretation of the

such aspects when necessary. In addition, for each of the studies reviewed, we created a Word document in which we included detailed information regarding the aspects identified.

The results of this first round of examination, and particularly the aspects identified, which are the target of the literature review, were discussed among the authors of the paper. In order to avoid bias assessment, we agreed a list of elements covering all the aspects identified so far (including 17 main categories and 32 sub-categories) and re-examined all the articles reviewed to check whether they addressed them or not, and how. To do that, we used key words (Annex 1 include these categories and their related key words). We created and Excel document in which we quantify the number of articles addressing each category and sub-category (Annex 2), and took further notes regarding the way such categories were addressed.

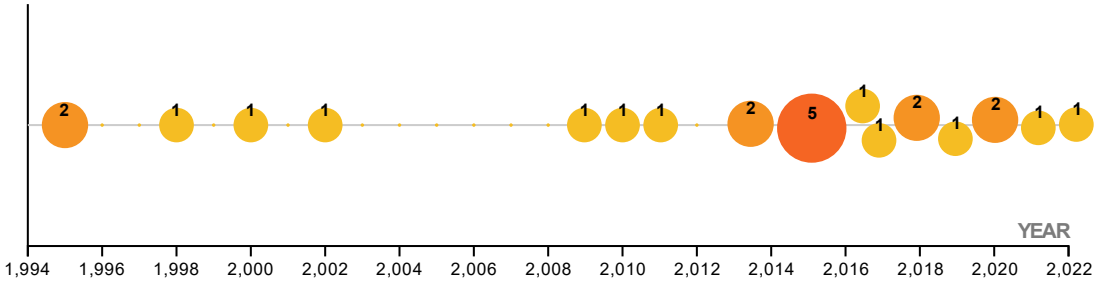
4. Results

In this section we briefly describe the characteristics of the articles reviewed -year of publication, countries studied, food regimes covered, main sources, terminology used to identify the approach and main focus- (section 4.1.) to then portray the aspects of food regimes identified in detail (4.2.). We also present some connections between these aspects which were brought to light thought the literature review (4.3).

4.1. Some descriptive features

The literature review shows that the first studies using food regime analysis at a national level were published in 1995 (Le Heron & Roche, 1995; Roche, 1995). In the following years, few studies were published with such characteristics to then flourished since the 2012. In fact, 2 in 3 studies reviewed were published in the last decade (see figure 2).

Figure 2. Year of publication (number of studies)

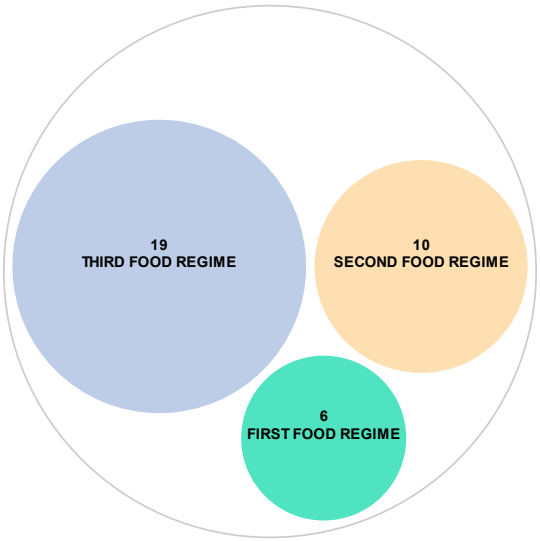


In geographical terms, 21 countries are studied from all over the world (see figure 3). America and Oceania are continents with the highest number of studies, with a rate of 38% and 24% respectively. In line with this, the United States is the country most studied (4 studies investigated it), followed by New Zealand (3 studies).

Figure 3. Countries studied (number of studies by country)

The period under the 'third food regime' was the one investigated the most by far: 19 studies out of total cover it (figure 4). The 'second food regime' and the 'first food regime' are addressed in 10 and 6 studies respectively.

Figure 4. Food regimes studies (by type and by number of studies in which it is addressed)



In regard to the sources, some articles concisely point them while others are less precise. Among the former, we found articles based on primary sources, including interviews, surveys and ethnographic field research (Stringer, 2000; Gras & Hernández, 2014; Heis, 2015; Pietilainen & Otero, 2019; Werner, 2019; Søndergaard, 2020; Green, 2021), which are usually further combined with official statistics, governmental sources and secondary literature. More specifically, Torrado (2016) uses state planning documents and Weiler et al., (2020) use U.S. and Canadian government websites and employment contracts for guest worker programs, which they combine with a purposive review of the available literature. The remaining articles do not specified their sources, but we can observe the use of secondary literature and official statistics (such as FAOESTAT, national accounts, WTO) to support their arguments.

In addition, we found that there is not homogeneity regarding the terminology used for indicating the approach/methodology followed in the studies. 'Food regime analysis' is the most common, used in 8 out of 24 articles. 7 out of the 24 articles refer to 'food regimes perspective' to describe their 'methodology' or 'analysis'. The remaining studies use 'food regimes framework' (1 out of 24); 'food regime concept' (3 out of 24); 'food regime approach' (2 out of 24); just 'food regime(s)' (3 out of 24) or a combination of them –'framework of food regime analysis' (1 out of 24).

The literature review also brought to light that studies reviewed give particular attention to different issues. A bunch of studies put the focus on a particular industry or sector of the agri-food system: meat industry (Roche, 1995), dairy and wheat sector (Pritchard, 1998); slaughtering industry (Broadway, 2002), livestock system (Ríos-Núñez & Coq-Huelva, 2015), soybean (Torrado, 2016) and oil palm (Pietilainen & Otero, 2019). Others focus on issues related to food security (Soldevila Lafon et al., 2015), self-sufficiency (Farina, 2017); food sovereignty and food production (Gaviria, 2011), and the fight for food sovereignty from a general scope of the agri-food system (Heis, 2015). Land related issues are the main focus in the studies by Salzmann (2018), Greenberg (2015)-addressing the agrarian reform- and Dixon (2009) -linking it to land grabbing, the restructuring of the agri-food system and financialization-. Some others focus on the state, including the role of the state (Werner, 2019), state-agribusiness relations (Søndergaard, 2020), and the interaction between the state and labour, looking at agricultural guest worker programmes (Weiler et al., 2020), or the impact of neoliberal regulatory restructuring on the division of labour in agriculture and food vulnerability (Pechlaner & Otero, 2010). One study particularly emphasizes investment culture (Le Heron & Roche, 1995), another (bilateral) trade relations (Stringer, 2000), and another one consumer-producer relations (Schermer, 2015). Finally, with a more general focus, Winders (2009) studies the foundations of the food regime -in terms of political power-, Green (2021) the Cambodian agrarian transition, and Mukahhal et. al. (2022) the Lebanese food system and agrarian history.

4.2. Elements

Following the list of categories we set, down below we reframe/rename them into the elements of food regimes at a national scale. We indicate the number of articles that addressed each of element and sub-element (see Annex II), and summarize the way they do it.

1. State regulations

The literature review shows that all the articles reviewed (24 out of 24) tackle state regulations, thus pointing to the centrality of this element.

State regulations covered different areas. Regulations on international trade, including trade agreements, tariffs and quotes, subsides, export supports or the role of institutions such as national producer marketing boards, are addressed in 23 articles; regulations on agricultural production and technology aimed at supporting specific productions or farming models, such as the promotion of Green Revolution technologies or support for small-scale farming, are addressed in 19 articles; regulations related to land, mostly concerning land reform, are addressed in 10 articles; regulation related to domestic market and prices are addressed in 5 articles; regulations related to social issues, for example, food based social protection programmes or the promotion of food sovereignty, are addressed in 2 articles; regulations related to agricultural labour are addressed in 1 article; regulations related to banking and finance are addressed in 1 article; and finally, overall state regulations, such as structural adjustment programmes and structural reforms of the whole economy, are addressed in 8 articles.

It is important to note that state regulations are the main focus of study in the articles by Pechlaner & Otero (2010), Greenberg, (2015), Werner (2019) and Weiler et al. (2020).

2. Dominant forms of capital

A second aspect identified in the literature could be categorized as 'dominants forms of capital' -borrowing Bernstein's (2016) term-, referring to actors other than social and farmer movements that are linked to 'power', 'dominance' an 'control' over the agri-food system.

19 out of the 24 articles reviewed include this aspect. 18 articles tackle corporate dominance, including power exerted by agribusiness, trades, supermarkets and other related corporate forms. 10 articles tackle dominance by local agrarian elites and capitalist class. For example, Winders (2009) refers to 'agricultural class segments and landowners', Gaviria (2011) to 'elite groups linked with traditional agriculture and urban oligarchic groups and big landlords', Pietilainen & Otero (2019) to 'the powerful agro-industrial family and wealthy ruling class comprised of creole descendants and affluent ladinos' and Green (2021) to 'powerful agrarian capitalists and state elites'. 7 articles

tackle banking and financial power, and 1 article tackle state-capital power -referring to 'Chinese state-capital' (Green, 2021)-.

These four main dominant forms of capital may be intertwined and structured through global-local links. For example, Dixon (2014) explains that "the character of this emergent class of finance capitalists in Egypt illustrates not just increasingly intimate state–class relations during the last decade or more, but the workings of finance hegemony as elites are connected globally through institutional centers of knowledge production, prestige and so on" (Dixon, 2014, 239). Similarly, Pietilainen & Otero (2019) refer to "domestic elite-owned oil palm production" (Pietilainen & Otero, 2019, 3) and explain that "while international elements such as financial institutions and the United States have heavily endorsed Guatemala's oil-palm industry due to its prospects in export markets, it was the large landowners and their alliances with foreign capital who introduced the industry whilst receiving support from state policies and security forces" (Pietilainen & Otero, 2019, 4).

Paying particular attention to this issue it stands out the work by Gras & Hernández (2014), in which they investigate agribusiness and large-scale farming in Argentina, showing firm diversity and the "different forms through which they access land and other resources, and the importance of factors other than farm size in their accumulation patterns" (Gras & Hernández, 2014, 347).

Moreover, Gras & Hernández (2014) bring about the fact that these dominant forms of capital eventually may come into conflict between them, showing that "the neoliberal food regime and the "agronegocio" have also weakened previously consolidated capitalist firms" in the Argentina (Gras & Hernández, 2014, 354). This feature is also portrayed by Winders (2009), who describes the conflict between landowners and industrial and commercial capitalists, as well as between agricultural class segments in regard to the Repeal of the Corn Laws (Winders, 2009), and by Green (2021) who portrays internal conflicts of the Cambodian Rice Federation.

3. Social and farmer movements

Resistance movements confronting dominant practices are tackled in 17 out of the 24 articles reviewed. Among them, 16 articles address struggles and demands by small farmers, peasants and rural and indigenous communities, and 5 articles focus on social movements involving health, environment and social justice concerns.

The depth in which these issues are addressed varies. Half of the articles only acknowledge existence of such movements, while the other half offer deeper insights. The latter is the case Winders (2009), Pechlaner & Otero (2010), Heis (2015), Greenberg, (2015), Schermer (2015), Salzmann (2018) and Werner (2019).

The literature review also puts forward that, despite the fact that national and/or local movements may be framed within global ones -for example, La Via Campesina-, examining resistance at the country level it is essential to understand national trajectories (Pechlaner & Otero, 2010).

4. Hegemonic and powerful nations at a global scale

11 out of 24 articles look at how global hegemonic and powerful nations influence national paths. Most of these articles are framed in the First and Second Food Regimes, thus considering the dominance of the UK and the US respectively. The number of articles tackling this aspect is lower in the case of studies framed under the Third Food Regime due to the multipolarity that characterizes this period. Despite of this, Salzmann (2018) and Pietilainen & Otero (2019) show the critical influence of Washington institutions over Palestine and Guatemala's path, and Green (2021) the determining role of China in the Cambodian case.

5. Ideological paradigm

15 out of 24 articles take into consideration the ideological paradigm dominating each regime. That is, the free-trade rhetoric in the First Food Regime, the shared vision of 'food aid' (instead of commodity trade) and 'development' as national industrial growth in the Second Food Regime, and free-market ideology in the Third Food Regime.

Søndergaard (2020) gives particular attention to this and tackles in more detail how neoliberal ideational frameworks were incorporated in Brazil, and particularly within the agribusiness sector.

6. Historical and geopolitical context

In half of the articles reviewed (12 out of 24), authors highlight the importance of historical and geopolitical events in shaping national trajectories. For example, Gaviria (2011) address historical conflicts in Colombia, particularly over land, Dixon (2014) examines the historical frontier-making process in Egypt, Ríos-Núñez & Coq-Huelva (2015) take into consideration the transition from dictatorship to democracy in Spain, Green (2021) offers a short history of Cambodia's agrarian political economy, and Mukahhal et al. (2022) portrays historical disputes and war conflicts occurred in Lebanon and the intervention of the US to restore order and peace.

7. Production of external agro-industrial inputs

Production of external agro-industrial inputs -i.e., fertilizers, pesticides, seeds- is only included in 3 out of the 24 articles reviewed. In them, authors portray some general features. Gras & Hernández (2014) acknowledge the emergence of agri-food complexes in Argentina, in which input suppliers are a constituent part. However, the authors clarify that they "are not to address fully the relationship between large local agricultural firms and global corporations (which, in Argentina, are mainly located in input supply and export trade)", yet, they "intend to offer a first step by examining large-scale local farming" (Gras & Hernández, 2014, 341). Greenberg (2015) refers to "agribusiness expansion" in South Africa and mentions that "South African agribusiness in Africa cover agricultural inputs (Sasol, African Explosive and Chemical Industries (AECI) and Omnica, not to mention the footprint of Pannar Seed, now owned by Pioneer Hi-Bred of the US)" (Greenberg, 2015, 8). In a similar way, Mukahhal et al., (2022) mentions for the Lebanese case that "private agricultural input companies have stimulated and maintained the agricultural sector in Lebanon ever since the Civil War" (Mukahhal et al., 2022, 7).

As we will see later on this document, the lack of consideration of production of agro-industrial inputs among the articles reviewed seems to be related to the fact that they are mostly imported.

8. Primary agricultural production

21 out of the 24 articles reviewed tackle primary agricultural production, including its output -i.e., what is produced- (16 articles) and the farming model -i.e., how it is produced- (21 articles).

Articles addressing production include figures for national agricultural output (in total or for some specific product or group of products), measured in monetary and physical units (tonnes, harvest area, yield), and in absolutes or relative terms (for example, in relation to GDP). However, in some cases only general trends -increases or decreases- are included (M. Dixon, 2014; Farina, 2017). Particular cases are the works by Greenberg (2015), who provides data on subsistence food production in rural areas, and by Schermer (2015), who acknowledges the increase of organic production in Austria.

The way farming models are addressed significantly varies from article to article. Most of them include changes in technology[3], mentioning the introduction of the Green Revolution novelties, usually associated with a dependence of external inputs; the character of the farming model -i.e., extensive, intensive, export-oriented…-; and data or trends on the number of farms or units of production and their characteristics. Studies by Le Heron & Roche (1995), Schermer (2015) and Heis (2015) give spectial attention to the move towards more sustainable agriculture and organic production.

In regard to labour, most articles include data on agricultural employment, in absolute or relative terms (in relation to the whole economy, and in comparison to other periods) (Pritchard, 1998; Pechlaner & Otero, 2010; Ríos-Núñez & Coq-Huelva, 2015; Pietilainen & Otero, 2019; Mukahhal et al., 2022). Agricultural wages and income are also included in a few articles, in which general trends are described (M. Dixon, 2014; Ríos-Núñez &

[3] The mechanization of agriculture is tackled in depth by Ríos-Núñez & Coq-Huelva (2015) using mechanization index.

Coq-Huelva, 2015; Salzmann, 2018; Werner, 2019). Only Pietilainen & Otero (2019) include information on wages in the Guatemala's oil-palm firm NaturAceites and provide a rich qualitative description of the working conditions in such firm. Finally, some articles consider migrant labour (Werner, 2019; Weiler et al., 2020).

9. Land

Land is an aspect of upmost importance in regard to agriculture. Half of the articles reviewed (12 out of 24) tackle this issue, covering land ownership and distribution, -including land concentration and leased area- (Gaviria, 2011; Gras & Hernández, 2014; Greenberg, 2015; Werner, 2019); land uses (Gaviria, 2011; Gras & Hernández, 2014; Greenberg, 2015; Heis, 2015; Werner, 2019); the right to land (Greenberg, 2015; Werner, 2019); and control of land, understood as 'control-grabbing' (M. Dixon, 2014; Gras & Hernández, 2014) or related to concentration of investments (Torrado, 2016). In addition, Torrado (2016) addresses land renting processes in Argentina and the appearance of a "new type of landlord known as 'rentista'" (Torrado, 2016, 98).

Some articles link the former aspects to 'accumulation by dispossession' and 'land grabbin' (Dixon, 2014; Gras & Hernández, 2014; Salzmann, 2018; Pietilainen & Otero, 2019), and Le Heron & Roche (1995) acknowledges that "land is an internationally saleable commodity (except Maori land)" in the New Zealand case (Le Heron & Roche, 1995, 27).

Finally, it is worth mentioning that land is the main focus of the study by Dixon (2014), in which she investigated "the role of Egyptian finance capital, and one firm, CitadelCapital, in particular, in appropriating land and other resources in Sudan, South Sudan and other southern neighbours (…) since the 2007–2008 crisis" (Dixon, 2014, 233).

10. Food industry

14 out of the 24 articles reviewed include national food processing or food industry. Similarly to primary agricultural production, most of these articles cover food industry output (5 articles) and/or its production model (11 articles), while 2 of the articles only acknowledge the existence or the emergence of food processors (Dixon, 2014; Pietilainen

& Otero, 2019) or the absence of them (Soldevila et al., 2015), without providing further details.

Articles addressing food industry output include national figures (in total or for some specific product or group of products), measured in monetary and physical units and in absolutes or relative terms (for example, in relation to GDP).

In regard to food industry models, most of the articles broadly describe national food industries by pointed specific features. For example, Roche (1995) broadly portrays the meat industry in New Zealand, including its restructuring process towards market orientation, the introduction of more flexible work practices, and its integration using the case of W. Weedel and Co (NZ); Pritchard (1998) mentions the nationally oriented character of Nez Zealand dairy processing industry and the fact that it is linked to national raw production, the existence of contract production and branding agreements, and the growth of feed-grains sector. Heis (2015) mentions that rice milling is the most important industrial activity in Tasothon and describes the case of the Thai agro-industrial multinational enterprise Charoen Pokphang Group; Ríos-Núñez & Coq-Huelva (2015) portray the major role of meat and animal feed firms among Spanish agro-industrial firms, including turnovers of the main five companies; Green (2021) includes an overview of the milling industry in Cambodia, highlighting the predominance of large-scale firms and their influence on rice producers; and finally, Mukahhal et al., (2022) mentions the monopolistic nature of sugar beet industry in Lebanon and the "corporate involvement in the food industry" (Mukahhal et al., 2022, 6).

Only Broadway (2002) and Werner (2019) provide a deeper insight of this issue. The study by Broadway (2002), focused on slaughter industry in the UK, addresses changes in technology, included data on the number of slaughters by size (showing increasing concentration) and throughputs, and its geographical localization. Werner (2019) includes information on production of processed rice by type of producer, differentiating between private sector, reformed sector collective or individual, and also adds that "school breakfast remains an important source of demand for wheat-based processed products, produced by Dominican agro-industry with imported wheat primarily from the US" (Werner, 2019, 16).

11. Markets

22 out of the 24 articles reviewed tackle the agri-food market. In order to examine the way the literature approaches this aspect, I differentiate four main markets: the market of external agro-industrial inputs, the market of primary agricultural products, the wholesale market (including big supermarkets and wholesalers and public hub wholesale markets) and the retail market (including big supermarket, retail malls, municipal markets, small retailers, farmer markets, etc.)

The literature review show that the majority of the articles reviewed (18) tackle the market of primary agricultural products, including trade figures (16) and the characteristics of the market (11).

Articles comprising trade figures mostly provide data on exports and imports, covering all agricultural products or a selection of them, and accounted in monetary and/or physical unit, in absolute and/or relative terms depending on the case. Some studies also address trade composition, trade partners, trade balance and export/import dependence (Gaviria, 2011; Soldevila Lafon et al., 2015; Farina, 2017; Pietilainen & Otero, 2019; Werner, 2019; Green, 2021). A particular case is the study by Schermer (2015), in which particularly attention is given to the organic market, providing some figures on the share of organic products in regard to total sales.

Articles tackling the characteristics of primary agricultural markets mainly focus on market concentration and organizational aspects. Market concentration is addressed in terms of number of firms (also pointing their national or international nature) and their market share (Pritchard, 1998; Dixon, 2014; Torrado, 2016; Søndergaard, 2020; Mukahhal et al., 2022). Organizational aspects are tackled in varied forms. For example, Pritchard (1998) describes the role of national boards and marketing cooperatives in Australia; Stringer (2000) characterizes the Korean import system and investigates the role of national boards and their related joint-ventures in Korean-New Zealand agro-food trade; Schermer (2015) addresses the role of food cooperatives and CSA in the Austrian organic market; Heis (2015) mentions that "organic production has been picked up and heavily co-opted by the corporate sector, mainly for exports for the Global North" in Thailand (Heis, 2015, 77) and Green (2021) portrays how Cambodian farmers access formal export

markets through trade deals organized between China Oil and Foodstuff Corporation, Cambodian Rice Federation members, and national-level officials within the Ministry of Commerce.

9 out of the 24 articles reviewed tackle the retail market. Only 3 of the articles include figures: Broadway (2002) reports sales of meat in supermarkets in the UK (%); Schermer (2015) includes data on the share of organic products marketed through supermarkets in Austria, and also portrays that "top retail chain in Tyrol (MPreis) is sourcing 25% of its products from within the region of Tyrion" (Schermer, 2015, 129); and Pietilainen & Otero (2019) include the share of food sold through supermarkets in Guatemala.

Most of the articles addressing the retail market give more attention to its characteristics (9, included the 3 former, see Excel 1). They mostly acknowledge the emergence and expansion of supermarkets and the market concentration associated with them. Broadway (2002), Schermer (2015) and Pietilainen & Otero (2019) further include data on the number of supermarkets and their market share. Some articles also take into account local and fresh markets: Heis (2015) explains that "In Thailand, fresh markets still provide the major share of fresh fruit and vegetable supply. But the increasing monopolization of the retail market leads to a gradually declining number of independent fresh-market retailers" (Heis, 2015, 71) and Pietilainen & Otero (2019) portray for the case of Guatemala that "Massive Despensa Familiar stores, that is, Walmart's, were located in the hearts of many cities and even smaller towns. Meanwhile, local street markets, previously flourishing, were few and far between" (Pietilainen & Otero, 2019, 17).

Other articles describe specific features of their national retail markets, such as ownership of supermarkets by wealth local families (Dixon, 2014), processes of merge between supermarkets and local retail stores and integration with family-owned local production (Mukahhal et al., 2022) or the organization of the supply, particularly in regard to purchasing contracts (Broadway, 2002; Greenberg, 2015).

The market of agro-industrial external inputs was included in 8 out of the 24 articles reviewed. In them, authors acknowledge the fact that chemicals, seeds, pesticides, fertilizers and machinery are imported from global markets, but without providing further

data details. Only Gaviria (2011) includes some data on imports of fertilizer and chemical inputs in Colombia in tonnes.

In regard to the characteristics of this market, the literature review show that articles point to the concentration of this market in the hands of few transnational corporations and a dependence relation towards them by national producers (Gaviria, 2011; Søndergaard, 2020; Werner, 2019). Green (2021) and Mukahhal et al., (2022) further detail such concentration by including figures on the number of firms and their market share. Heis (2015) describes that "expensive agricultural input is provided to the farmers by large-scale suppliers via a broker and it is often acquired on credit, with no contract, or even specified rates of interest" (Heis, 2015, 71) in a framework of contract farming, and Mukahhal et al. (2022) that agricultural inputs are "imported through local agricultural inputs companies and sold directly to farmers or agricultural pharmacies" (Mukahhal et al., 2022).

Only 2 out of the 24 articles reviewed tackle wholesale markets: Stringer (2000) portraits the functioning of wholesaling markets for the fresh and vegetable sector of New Zealand and Mukahhal et al. (2022) briefly refers to the structure of fresh produce wholesale market, explaining that "traders dealt with farmers on a consignment basis on a deferred payment basis, paid in the devaluating local currency" and adding that "the fresh produce wholesale market is considered the main contributor to the inefficiency in the horticultural supply chain" (Mukahhal et al., 2022, 8).

Finally, for 6 of the articles reviewed tackling agri-food market aspects it was not possible to fit them in the former market categories. These articles include specific trade figures for certain products -tomato paste (Le Heron & Roche, 1995), dairy (W. N. Pritchard, 1998), beef (Stringer, 2000) and meat (Broadway, 2002)-, as well as some characteristics of national markets. For example, Salzmann (2018) portrays that "food imports from Israel and Israeli settlements are widespread throughout the Occupied Palestinian Territory. These imports are problematic, especially during peak harvesting seasons and when their quality is below export standards, as they are channelled into Palestinian markets and this undermines domestic producers, who find themselves unable to compete with such cheaper, and often subsidized, imports from Israel" (Salzmann, 2018, 19) and Mukahhal

(2022) explains that "production capacity potential was gradually replaced with import dependency so that traders would increase profits by selling imported sugar" in Lebanon (Mukahhal et al., 2022, 5).

Apart from food markets, the literature review shows that 3 articles also make references to the land market.

12. Agri-food chain

A phenomenon cross-cutting all the activities involved in food production and distribution is their integration within a same firm. This process is included in 6 of the articles reviewed, yet from different approaches.

Gras & Hernández (2014) examine large scale farming in Argentina, and by doing so, summarized that "farm-scale, vertical and horizontal, national and international, productive, commercial and financial integrations, and risk management strategies have positioned network megafirms as leading actors in Argentina's agriculture" (Gras & Hernández, 2014, 371). Søndergaard (2020) acknowledge the restructuration of Brazilian agriculture, including vertical integration of agricultural commodity chain.

Looking at a specific sector, Pritchard (1998) portrays some features of the links between Australian milk production, processing and regional cooperatives promoted by the government, and between wheat production and consumption for the feedgrain sector, including data on the growth of feedgrains used by beef feedlot and dairy cattle sectors. Ríos-Núñez & Coq-Huelva (2015) briefly describe the increasingly vertically integrated model of meat commodity chains in Spain, led by animal feed corporations and meat agro-industrial companies.

In other articles, authors use the experience of a particular firm to exemplify integration of agri-food chain. This is the case of Dixon (2014), who portrays the case of Citadel Capital vertical integration in Egypt, and Heis (2015), who describes vertical integration processes within production activities in Thailand led by transnational corporations using the example of Charoen Pokphang Group.

13. Prices

The literature review puts forward that 15 out of the 24 articles reviewed consider prices along the agri-food chain. In order to examine the way the literature approaches this aspect, I differentiate four categories of prices according to the markets' classification used above -i.e., prices of external agri-industrial inputs, prices of primary agricultural products, prices in the wholesaling markets and prices in the retail market or consumer prices-.

The literature review show that the main focus is put on the prices of primary agriculture products, addressed in 9 out of the 24 articles reviewed. The way they do it is fairly general, just mentioning them or pointing to their increase or decrease. For example, Ríos-Núñez & Coq-Huelva (2015) mention the "dramatic rise in cereal prices in the first half of the 1970s" (Ríos-Núñez & Coq-Huelva, 2015, 532) and Søndergaard (2020) portrays that "as exports resumed, global cotton prices were strongly affected by US support measures, whose cotton producers benefitted from substantially elevated subsidies" (Søndergaard, 2020, 8). Some articles referred to prices in general, while others refer to a specific product.

Among the 9 articles addressing primary agricultural prices, 7 of them also point to any reason behind the trends followed by prices, including the entrance in the EU (Schermer, 2015), commodity price inflation (Pietilainen & Otero, 2019), regulations (Werner, 2019; Søndergaard, 2020), exposure to global competition and trade dependence (Green, 2021) or market power of traders (Mukahhal et al., 2022). Heis (2015) is the only one providing an overview of the mechanism of prices setting within Thailand AAN Isan cooperative (Heis, 2015).

The prices of external agri-industrial inputs are only tackled by Werner (2019), Søndergaard (2020) and Mukahhal et al. (2022). Similarly to the case above, authors just mention their increase or decrease, and briefly point to the drivers behind such trend: regulation freezing prices of inputs (Werner, 2019), reduction of import tariffs (Søndergaard, 2020) and currency depreciation (Mukahhal et al., 2022).

Prices in the retailing market are tackled by Heis (2015), Pietilainen & Otero (2019) and Mukahhal et al. (2022), who describe some particular cases. Heis (2015), in her explanation of how prices are set in fresh markets by peasants explained that "the prices are chosen to be competitive to those at the other fresh markets" (Heis, 2015, 81) and "as low income population might lose access to fresh foods, which are now generally available at fresh markets for relatively low prices, it might force them to become dependent on cheap convenient foods" (Heis, 2015, 72). Pietilainen & Otero (2019) described that "due to the reported commodity price inflation and the rising costs of staples like maize, prices in Walmart seemed considerably higher than at street markets" (Pietilainen & Otero, 2019, 17), and Mukahhal et al. (2022) report that "20 traders for 80% of citrus products controlled marketing resources, including transportation, storage, and financial resources allowing them to buy products cheaply from producers and sell profitably to consumers" (Mukahhal et al., 2022, 5).

Finally, 11 out of the 24 articles reviewed refer to prices without specifying the market in which they are set. As in the previous cases, most authors only mention general trends followed by prices and broadly point to the main drivers behind them. Only Gaviria (2011) includes data on the price of sugar in Colombia ($/Ton), and Soldevila Lafon et al., (2015) provide data on the increase of basic food in the local market in Mauritania's capital.

14. Consumption and diet

15 out of the 24 articles reviewed tackle food consumption and diet. Articles mostly provide an overview of changes in diet and consumption patterns. For example, Farina (2017) mentions that Japanese "changed from a traditional diet to a westernized one, with an increase in the consumption of meat, wheat, oils, dairy products, and a decrease in the consumption of 'traditional' food, such as rice, that has led to a major consumption of imported food" (Farina, 2017, 364) and Mukahhal et al., (2022) report the "'wheatification' of diets" and "increased dairy and meat consumption" in Lebanon (Mukahhal et al., 2022, 6).

Some authors further detail changes in consumption adding data. This is the case of Broadway (2002), who includes annual meat consumption per capita (in kg) in the UK,

covering five categories; Gaviria (2011), who includes figures of national consumption for ten categories (in g/person/day) in Colombia; Soldevila Lafon et al. (2015), who includes data on national consumption for ten categories (t) per year in Mauritania; and Ríos-Núñez & Coq-Huelva (2015), who includes domestic consumption of meat (kg per capita per year).

In regard to food expenditure, only 3 articles tackle this aspect: Soldevila Lafon et al., (2015) include food expenditure (% of total expenditure) in rural and urban areas in 2008 in Mauritania; Ríos-Núñez & Coq-Huelva (2015) explain that "the ratio of food expenses in household budgets continued to fall, from 29 per cent in 1985 to 22 per cent in 2005" (Ríos-Núñez & Coq-Huelva, 2015, 528), further adding that "although meat consumption per person tripled, the share of meat products in household budgets remained at approximately 10 per cent" (Ríos-Núñez & Coq-Huelva, 2015, 531) and explaining that the objective of Spanish industrial livestock was to provide cheap animal calories; and Heis (2015) broadly portrays the changing situation of retail in Thailand and the impact in consumers, unable to access fresh markets and becoming dependent on cheap convenience foods[4].

Apart from that, other authors include other specific information. For example, Schermer (2015) address changing producer-consumer relations in Austria, particularly in regard with food cooperatives and CSA and the preference for organic and local food; Werner (2019) mentions that school food programs had an important use of domestic food

[4]More specifically, Heis (2015) states that "This changing retail situation in Thailand and the expensive pricing of those products may negatively influence consumer food choices and subsequently their options for healthy diets. As the low-income population might lose access to fresh foods, which are now generally available at fresh markets for relatively low prices, it might force them to become dependent on cheap convenient foods with high energy density and low nutrient value (Banwell et al., 2013, p. 609). This development already implies certain inequality in food supply according to customers' purchasing power in Thailand and will further lead to a growing number of people suffering from malnutrition, especially among the low-income populace (Dixon, 2014, p. 202)" (Heis, 2015, 72)

production in the Dominican Republic (Werner, 2019, 7); and Green (2021) reports some figures of self-consumption of rice in Cambodia, adding that the reason is food insecurity.

15. Self sufficiency

10 out of 24 of the reviewed articles take into consideration self-sufficiency, i.e., the capacity of a country to produce enough food to meet its domestic consumption. Self-sufficiency is measured as the difference between production and consumption [production - (consumption + exports)]; using the ratio imports/total supply or the import dependency ratio (IDR), calculated as [imports/(production + imports – exports) *100].

In some articles, all food products are accounted, were in others only a product or a group of them, including meat -differentiating by type of meat- (Broadway, 2002); maize, wheat, beans, rice (Pechlaner & Otero, 2010); beans, maize, rice, wheat (Gaviria, 2011); cereals and meat (Ríos-Núñez & Coq-Huelva, 2015); cereals (Pietilainen & Otero, 2019); broiler chicken (Werner, 2019).

Self-sufficiency is linked with food insecurity (Dixon, 2014; Soldevila Lafon et al., 2015; Pietilainen & Otero, 2019; Mukahhal et al., 2022) and food vulnerability (Pechlaner & Otero 2010).

16. Finances

The literature review puts forward that 14 of the 24 articles reviewed consider the role of finance in the agri-food system.

Most of the articles broadly describe foreign investment in different areas: in agricultural production (Gras & Hernández, 2014; Torrado, 2016; Werner, 2019; Green, 2021; Mukahhal et al., 2022) in food processing (Le Heron & Roche, 1995; Roche, 1995; Broadway, 2002); in supermarkets (Mukahhal et al., 2022); along the agri-food chain (Pritchard, 1998; Stringer, 2000; Dixon, 2014; Gras & Hernández, 2014; Greenberg, 2015); in land (M. Dixon, 2014; Gras & Hernández, 2014) or in the stock market (Roche, 1995). In addition, Le Heron & Roche (1995) put particular attention to the emerging

"investment culture" in New Zealand, taking into account the move towards "globalisation" and "sustainability" dimensions (Le Heron & Roche, 1995, 28).

On the other way around, Farina (2017) address the Japanese investments in other regions, explaing that "Japan's transnational corporations became the new protagonists of this change and the examples of investments in the agricultural sectors all over the world are innumerable" (Farina, 2017, 377) supported by Japanese Government in order to secure food supply in Japan.

Other issues addressed are credit in small farming (Werner, 2019; Green, 2021; Mukahhal et al., 2022); contract farming (Søndergaard, 2020); equity financing (Pritchard, 1998; Dixon, 2014); and the introduction of "an array of complex instruments (i.e. derivatives such as swaps, forwards, futures, options)" (Gras & Hernández, 2014, 350). This latter issue is addressed in more detail by Søndergaard (2020), who investigates the financialization of agriculture in Brazil (Søndergaard, 2020).

17. Impacts

14 out of the 24 articles reviewed include social and environmental impacts resulting from the agri-food system functioning under each food regime.

12 articles report negative impacts on small and family farmers, peasants or indigenous communities (Gras & Hernández, 2014; Green, 2021; Heis, 2015; Mukahhal et al., 2022). Among them, dispossession (Dixon, 2014; Gras & Hernández, 2014; Salzmann, 2018; Pietilainen & Otero, 2019) and displacement (Gaviria, 2011; Torrado, 2016) stand out, as well as the associated consequences of these processes, such as lack to access land, water and food, and ultimately the detriment of food sovereignty (Gaviria, 2011; Pietilainen & Otero, 2019). Werner (2019) includes an overview of the impacts of government programmes on farmers and whole population, and Weiler et al. (2020) the outcomes for migrants of agricultural guestworker programs, in terms of work recruitment, wages, deductions, and benefits, access to healthcare and worker's compensation, enforcement of employment and housing standards, security of immigration status and gender-specific concerns.

6 articles tackle environmental impacts. Some authors only acknowledge them (Heis, 2015; Mukahhal et al., 2022) while others provide further detail: Dixon (2014) report widespread contamination of soil, water and crops in Egypt; Ríos-Núñez & Coq-Huelva (2015) include the breaking of "some of the traditional ecological equilibria of traditional agriculture, dramatically enlarging the 'metabolic rift' of Spanish agriculture" (Ríos-Núñez & Coq-Huelva, 2015, 525); Torrado (2016) reports deforestation, pollution of water bodies and soil due to high use of pesticides and chemicals, and health concerns and illness in communities living in close proximity to plantation sites in Argentina; and Pietilainen & Otero (2019) include water scarcity and contamination in Guatemala.

4.3. Connections

The literature review also brings about connections between the aspects above identified. I briefly explain them down below:

State regulations resulting from contestation and influence from dominant forms of capital, social & farmer movements and global hegemonic-powerful nations

There is significant consensus among the articles reviewed that state regulations are the result of influences and contestation from and between dominant forms of capital and social and farmers movements, intersecting the influence of the global hegemonic-powerful nations (Winders, 2009; Pechlaner & Otero, 2010; Greenberg, 2015; Heis, 2015; Schermer, 2015; Torrado, 2016; Werner, 2019; Weiler et al., 2020; Søndergaard, 2020; Green, 2021).

This connection is visibly exemplified by Werner (2019), who argues that "the three modalities of agriculture and food regulation that I have outlined in the Dominican Republic's contemporary, 'late' neoliberal era reflect the outcome of intra-state and state-civil society relations. These relations mediate the market-liberalizing agenda advanced by Washington and US agri-business. They also interact with extra-national initiatives to support new-generation social policies, along with new social movements such as the demand for public investment in education, which has led to a massive expansion in the provision of meals to school children" (Werner, 2019, 17).

Another example is Green (2021), who states that "national market regulation varies based on competing priorities of intra-state actors involved with agro-food production and trade (Pritchard et al. 2016). How export markets benefit domestic agrarian capital over farmer livelihoods is shaped by intersectional terrains of struggle mediated by the state (Jakobsen 2018)" (Green, 2021, 2)

In addition, Pechlaner & Otero (2010) highlight the centrality of the nation-state as the main sphere of struggle, yet recognizing the importance of international solidarity. This way, they argue that "looking within nation–states will thus allow for studying how and whether their internal sociopolitical dynamics may become independent factors that could alter dominant trends in the world economy from the bottom up" (Pechlaner & Otero, 2010, 204).

State regulations: a central element framing food production, consumption and trade

The literature review also show that many articles consider the state as the "cornerstone" of the functioning of the agri-food system at a national level given that it sets the stage on which dominant forms of capital, social and farmer movements and global hegemonic-powerful nations exert their respective powers. While in some of the articles this idea is not set forward in an explicit way, it is underlined by the importance given to state regulations (as it shows section 1.1). On the contrary, some authors clearly address this connection (Winders, 2009; Pechlaner & Otero, 2010; Gras & Hernández, 2014; Ríos-Núñez & Coq-Huelva, 2015; Torrado, 2016; Pietilainen & Otero, 2019).

For example, Winders (2009) argues that "in each food regime, particular political conflicts produced a national policy tending towards state intervention or market mechanisms that came to frame the production, consumption and trade of agricultural commodities throughout the world economy" (Winders, 2009, 341). Similarly, Torrado (2016) states that "not only is the state an important actor in the establishment of neoliberal food regimes, but it also creates the conditions for a corporate-agrarian governance that is centered in biotechnology" (Torrado, 2016, 698).

Pietilainen & Otero (2019) emphasize the role of the state in regard to land, showing that "land-control grabs have grown alongside the cultivation of flex crops, and the Guatemalan state has played a key role in facilitating those that serve the elite-owned agriexport industries" (Pietilainen & Otero, 2019, 9) by "providing neoregulation: suitable policy conditions for investments adjusted laws or institutions to foster dispossessions, or abolished barriers for capital accumulation" (Pietilainen & Otero, 2019, 11).

The literature review also brings about that state regulations, dominant forms of capital, social and farmer movements and hegemonic and powerful nations at a global level are linked to governance or governances of the agri-food system (Le Heron & Roche, 1995; Stringer, 2000; Pechlaner & Otero, 2010; Gras & Hernández, 2014; Greenberg, 2015; Ríos-Núñez & Coq-Huelva, 2015; Schermer, 2015; Torrado, 2016; Werner, 2019; Søndergaard, 2020).

How dominant forms of capital exert their power on the agri-food system

The literature review puts forward at least two main mechanisms through which dominant forms of capital exert its dominance on the agri-food system: market concentration -which ultimately depends on integration processes- and financial investments.

The idea that integration (both vertical and horizontal) led to market concentration, and that this is a way of corporate power over the agri-food system is clearly seen in Pritchard (1998), who states that "economic power has shifted to the highly concentrated retailing sector, which through the promotion of retailer brand labels and generics is exerting intense control over food processors' margins" (Pritchard, 1998, 67); in Broadway (2002), who portrays that the power of supermarkets "to influence their suppliers has been strengthened by the presence of just five companies with over 60% of the grocery market, and they have used this power to dictate the way food is bought, sold and eaten" (Broadway, 2002, 272); in Gras & Hernández (2014), who mention the "dominance" exerted by mega-firms in agricultural production in Argentina due to their increasing expansion and thus to their ability to "establish the conditions under which their partners operate" (Gras & Hernández, 2014, 350); in Torrado (2016), who argues that the reduction

of the number of farms in Argentina resulted in the control of the industry by a only a small number, linking concentration to land with control (Torrado, 2016, 699); and finally in Mukahhal et al. (2022), who portrays that concentration in agricultural trade in Lebanon, thus controlling "marketing resources, including transportation, storage, and financial resources allowing them to buy products cheaply from producers and sell profitably to consumers" (Mukahhal et al., 2022, 5).

The role of financial investment as a vector or power is exposed by Dixon (2014), who argues that processes of financialization in Egypt had "both anticipated and precipitated the deepening of corporate control over domestic food economies", particularly linking it to land grab (Dixon, 2014, 233); by Gras & Hernández (2014), who argue that "the importance of finance in agricultural production has grown and become integral in shaping new productive patterns" in Argentina, further specifying that "different options in local and international futures markets, as well as investment funds directly financing farmers, have rendered financial capital a considerable power of control over agricultural production, reshaping the organisation of business among farms" (Gras & Hernández, 2014, 354); by Torrado (2016), who links investment in land to control over such land; by Green (2021), who explains that Chinese sovereign wealth funds had increased their control over agro-food production, processing, and distribution industry (Green, 2021, 4); and by Mukahhal et al. (2022), who argues that the Lebanese food system shift had "been facilitated by increased foreign direct investments, leading to the assimilation of settlers' cultures within the local context." (Mukahhal et al., 2022, 6)

Finally, Søndergaard (2020) links both phenomena, and states that in Brazil, processes of financialization "exacerbated the concentration and verticalization of Brazilian agriculture and reoriented productive activities towards global markets (Søndergaard, 2020, 8).

Social and environmental impacts as a result

The literature review also puts forward that articles hold that the way food production, consumption and trade is carried out under each food regime led to the social and environmental impacts reported in section 1.1.

Social and environmental impacts producing social and environmental movements

Finally, the literature reviews shows that social and environmental impacts are linked to social and farmer movements in such a way that the discontent provoked by impacts generated by the agri-food system dominant practices led to resistances and struggle to change it, as it shows section 1.1.

Schermer (2015) explicitly mentions the "transformative power of social movements over the entire third food regime" (Schermer, 2015, 130) and explains how the negative consequences of agricultural modernization for the farm structure in Austria led to the change of producer-consumer relation, looking at the different waves of social movements concerned with food provision and consumption, their embedding in national policies of agriculture and food, corresponding to the re-structuring of global food governance and the extent to which alternatives have penetrated the mainstream system and the mechanisms of integration and appropriation (Schermer, 2015).

Other examples can be found in Dixon (2014), who explains how counter-agrarian reforms in Egypt precipitated "intense social struggles over the land, as agrarian reform beneficiaries defend their land and livelihoods against a violent land grab" (Dixon, 2014, 237), and in Salzmann (2018), who states that "the ever more obvious malfunctions of the food regime will further spur resistance movements. People – both in the Global South as well as in the Global North – reclaim their voices within the neoliberal food regime, and live resistance in their everyday practices and struggles" (Salzmann, 2018, 29).

5. Discussion

The literature review shows the increasing use of food regimes lens to investigate national scenarios, with most of the articles reviewed being published in the last decade. Besides, it evidences the wide geographical utility of the approach, being applied in countries all over the world. The fact that the period of study of most of the articles reviewed is the third food regime also points to the relevance of food regimes lens despite the debate over whether a third food regime has already unfolded or not.

Regardless of this, the literature review also proves the blurriness around the epistemological nature of food regimes, an issue already risen in section 2.1. Among the articles reviewed, food regimes are considered in many different ways -including an analysis, a concept, a framework, an approach, or a mix of the former-.

Another finding is that the big majority of the articles reviewed give particular attention to a specific issue within food regimes. Only two of them address agrarian change as a whole.

Focusing now on the aspects considered in the articles reviewed, in the first place, the literature review points to the centrality of state regulations as a key aspect to understand how food regimes unfold at a national level, being addressed in all the articles reviewed (24 out of 24). This finding is consistent with other studies (Moran et al., 1996; Jakobsen, 2021). However, the focus is put mostly on regulations related to international trade and to primary agricultural production, while little attention is given to regulations over the remaining areas of the agri-food system.

The centrality of state regulations is also put forward in its key role in the connectivity between elements: state regulations result from contestation among and between dominant forms of capital, social and farmer movements, and hegemonic and powerful nations, and frame the space in which food production, trade and consumption take place.

The literature review shows an emphasis on primary agricultural production, tackled in 21 out of 24 of the articles reviewed. Yet, we consider insufficient the attention is given to agricultural labour, included the role of migrant workforce, as highlighted by Weiler et al., (2020). The call to further investigate labour within food regimes has been also risen by Araghi (2003) and Jakobsen (2021).

In addition, while we agree with the importance of agricultural primary production, we argue for the need to give more attention to the remaining activities of the agri-food chain -i.e., agricultural inputs, food processing and distribution-.

Similarly, when tackling markets, the main focus is put on the primary agricultural market, and particularly on international trade, addressed in 18 out of the 24 articles reviewed. We also content that the market of agro-industrial inputs, the wholesale market, and the

retail market need to be tackled in depth, as well as on the articulation within agri-food chains.

In regard to prices, despite they are included in 15 out of the 24 articles reviewed, they way they are tackled is general and entails little precision. Authors mainly refer to their increase/decrease and point to some of the drivers behind such trends. Being prices a key component of food expenses, we consider that examining prices in more depth is essential, including not only their evolution but also the mechanism of price setting. This issue goes hand in hand with markets considered as links across the entire agri-food chain.

An outcome of the little scrutiny of prices is reflected in the insufficient attention given to food expenses in regard to total expenditure or household budget. Only 3 of the articles reviewed tackle this issue. Thus, the food cost of household and thus, the cost of social reproduction, which is considered a critical aspect in food regimes studies linking labour to value relations (Araghi, 2003) is missing in most of the articles reviewed.

In regard to the connections identified between aspects, the literature review evidences that further research needs to be done in order to inform the mechanism through which these connections unfold, and to provide empirical evidence to support them. For example, the connection according to which state regulations result from contestations from and between dominant forms of capital, social and farmer movements, and hegemonic and powerful nations, should include insights on the means and processes through which these actors exert their influence over the state, and also how this intersects with the dominant ideological paradigm and the historical and geopolitical situation of each country. Only the studies by Winders (2009), Gras & Hernández (2014) and Green (2021) provide deeper insight regarding some of these connections.

The same applies to the power that dominant forms of capital held over the agri-food chain trough market concentration. In this regard, recent publications by IPES-Food, (2017) and Clapp (2021, 2022) support this connection and also provide rich insights to approach this issue.

Finally, the results of the literature review evidence the great complexity of national agri-food systems within capitalism, in which numerous elements and connections interplay

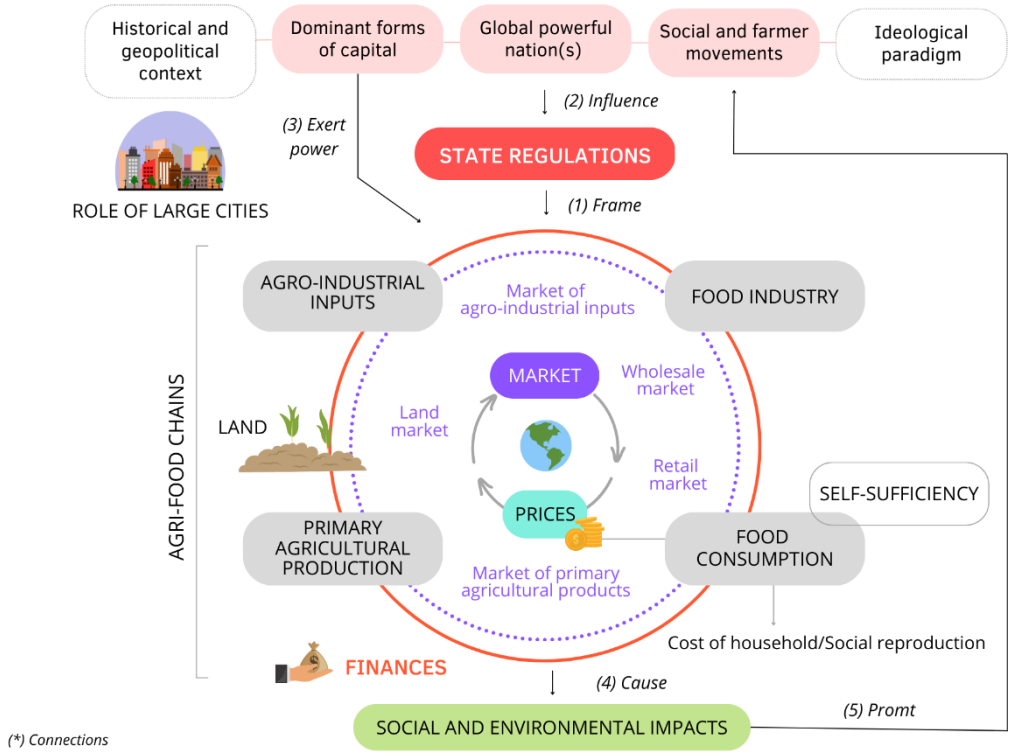
at different scales, including many nation-wide or even regional and local features that come from site-specific historical trajectories and heritages (Bernstein, 2016; Jakobsen, 2021).

Among them, the role of large cities stands out either in the construction and maintenance of local/regional public food infrastructures (transport and storage in ports and airports, wholesale markets and hubs, municipal retail markets) or, on the contrary, in abandoning their traditional food policies leaving them in the hands of large private traders and supermarket chains. Together with nation-state policies, looking at food regimes functioning at the national scale also means considering the role of cities and regions. This issue is not taken into account in the literature reviews, and we call for its inclusion.

6. Our proposal of a conceptual map for food regimes at a national scale

Drawing on the results from the literature review, further enriched through our discussion, we propose the following conceptual map (figure 5), in which we portray the elements involved in food regimes at a national scale, as well as some key connections between them from an holistic and systems approach (Hawkes & Parsons, 2019).

Figure 5. Conceptual map for food regimes at a national scale



According to it, state regulations are a core element to understand the functioning of agri-food systems at a national level. State regulations involve all policies which influence the food system and what we eat. This is also known as 'food policy' (Hawkes & Parsons, 2019). State regulations regarding food or food policy encompasses a wide range of areas -from environment to trade, including health, finance or social- and takes many forms -including action plans, strategies, framework legislation, statutes, bills, laws, court decisions, licensing, approvals, directives, regulations, guidelines, standards, codes of practice, specific programmes or voluntary initiatives-.

By doing so, state regulations frame the space in which agri-food production, distribution and consumption take places by setting the working rules (connection 1). Once state regulations are identified, tackling connection 1 implies the identification of the mechanism through which such policies are put into practice, and their effects on the ground.

State regulations are not neutral but they result from contestation and influences between dominant forms of capital, global powerful nations and social and farmer

movements (connection 2). The outcome of the struggle between these elements or forcers depends on their specific composition in each country as well as on their capacity to exert influence on the state apparatus. This is why the historical and geopolitical trajectory of each country matters because it determines to a great extent the former aspects. The role of large cities is also an important issue to take into account, due to their historical and current role in enabling food provision to large populations. All of the former elements intersect with what we call the ideological paradigm, or the implicit rules as named by Friedmann (2005), which legitimise the modus operandi of each epoch.

Going back to the space framed by state regulation, wat does agri-food production, distribution and consumption encompass? We distinguish between national production of agro-industrial inputs, primary agricultural products, and processed food, including their outcomes, how they are produced and by whom. Primary agricultural production is intrinsically linked to land and thus they need to be consider together when tackling the former aspects -i.e. what is produced in which land, how and by whom-.

All these products are exchanged through the market, encompassing distribution and trade. We distinguish at least four main markets: the market of agro-industrial inputs, the market of primary agricultural products, the wholesale market and the retail market. Understanding the functioning of markets involves looking at what is traded, how and by whom, both nationally and internationally. It involves tackling the prices at which products are exchange and price setting mechanisms in each of the markers, too.

Finally, food consumption encompasses what people eat and how. Thus, it includes at least diets, consumption at home and the role of food services, such as restaurants. Moreover, from the intersection between food prices and consumption results the cost of food consumption of households and thus the cost of social reproduction. An additional strand of food consumption is food national self-sufficiency, linked to government endeavour to guarantee food to their populations, and a major target of food policy.

The particular fashion in which the former elements integrate conform the agri-food chains. These configurations are usually linked to mechanism of power from dominant

forms of capital, such as market share. Additionally, finances are a cross-cutting element along the agri-food chain, also linked to a way of power over production, consumption and distribution (connection 3).

The outcome of all the former elements usually led to harmful environmental and social impacts (connection 4), as it was largely shown in section 4.3. Such impacts further cause discontent among those affected and eventually led them to their mobilisation aiming to push governments to act in the opposite direction (connection 5).

Understanding this last issue -i.e. the impacts of the agri-food system functioning an the social response they boost- is of special interest particularly in regard to the third corporate food regime, in which such impacts are jeopardizing life support systems and food security at a global scale. This is considered to be at the core of the contradictions held by the third food regime, and key to their future trajectory (Friedmann, 2005).

7. Conclusions

In this article we aim at shedding some light on the complexity of agri-food systems functioning by helping advance the understanding of food regimes at a national scale. We argue that the core idea held by food regimes is the need to provide cheap food for enable capital accumulation. Thus, food regimes lens seeks to understand how the agri-food system works to meet such requisite.

To this end, we propose a conceptual map which includes 18 elements and 5 five connections between them, and an explanation of how a national agri-food system would work according to it. The conceptual map draws on a literature review of articles that investigate national realities using food regimes lens aimed at identifying the aspects they addressed. It was further inspired on a systems approach.

This conceptual map is a first approach in mapping food regimes elements and connections at a country level. Yet, further research needs to be done in order to provide a deeper insight of these elements and the connections between them, including tools and methods that facilitate empirical evidence. For example, we highlight the need to better understand the dominant forms of capital and the mechanism through which they

exert power over the agri-food chain, and how them can be accounted. In addition, we acknowledge the big complexity of agri-food functioning. Thus, the set of elements and connection we identified may/should be widened, so that other relevant elements are added as well and the multiple relations between them accouted.

Moreover, we consider an important issue to address the little precision over the epistemology of food regimes. In this regard, we argue that food regimes should better be considered a conceptual framework. Yet, it may rely on analysis, approaches or frameworks to tackle specific features within it.

We wish this work contributes to food regimes development. Particularly, the conceptual map we propose steps forward in facing two of the problem which has been risen among food regimes scholars so far: its scale and its level of abstraction. Besides, we hope this conceptual map facilitates research in agrarian change, but also in other fields, such as development studies or food policy.

Bibliography

Abel, W. (1980). *Agricultural Fluctuations in Europe: From the Thirteenth to Twentieth centuries*. London: Routledge.

Akram-Lodhi, A. Haroon. (2021). The ties that bind? Agroecology and the agrarian question in the twenty-first century. *The Journal of Peasant Studies*, *48*(4), 687–714. https://doi.org/10.1080/03066150.2021.1923010

Akram-Lodhi, A. Haroon, & Kay, C. (2010a). Surveying the agrarian question (part 1): unearthing foundations, exploring diversity. *The Journal of Peasant Studies*, *37*(1), 177–202. https://doi.org/10.1080/03066150903498838

Akram-Lodhi, A. Haroon, & Kay, C. (2010b). Surveying the agrarian question (part 2): current debates and beyond. *The Journal of Peasant Studies*, *37*(2), 255–284. https://doi.org/10.1080/03066151003594906

Akram-Lodhi, A.H. (2019). Food regime. In J. Brunner, A. Dobelmann, S. Kirst, & L. Prause (Eds.), *Wörterbuch der Land- und Rohstoffkonflikte* (pp. 79–87). Bielefed: Transcript Verlag.

Altieri, M. A. (2002). Agroecology: the science of natural resource management for poor farmers in marginal environments. *Agriculture, Ecosystems & Environment*, *93*(1–3), 1–24. https://doi.org/10.1016/S0167-8809(02)00085-3

Altieri, M. A., & Toledo, V. M. (2011). The agroecological revolution in Latin America: rescuing nature, ensuring food sovereignty and empowering peasants. *Journal of Peasant Studies*, *38*(3), 587–612. https://doi.org/10.1080/03066150.2011.582947

Altieri, M., & Nicholls, C. (2005). *Agroecology and the Search for a Truly Sustainable Agriculture.* Berkeley: University of California Press.

Andrew, N. L., Allison, E. H., Brewer, T., Connell, J., Eriksson, H., Eurich, J. G., … Tutuo, J. (2022). Continuity and change in the contemporary Pacific food system. *Global Food Security*, *32*(100608). https://doi.org/https://doi.org/10.1016/j.gfs.2021.100608

Araghi, F. (2003). Food regimes and the production of value: Some methodological issues. *Journal of Peasant Studies*, *30*(2), 41–70. https://doi.org/10.1080/03066150412331311129

Belesky, P., & Lawrence, G. (2019). Chinese state capitalism and neomercantilism in the contemporary food regime: contradictions, continuity and change. *The Journal of Peasant Studies*, *46*(6), 1119–1141. https://doi.org/10.1080/03066150.2018.1450242

Bernstein, H. (2010). *Class Dynamics of Agrarian Change. Agrarian Change & Peasant Studies.* Sterling: Fernwood.

Bernstein, H. (2016). Agrarian political economy and modern world capitalism: the contributions of food regime analysis. *The Journal of Peasant Studies*, *43*(3), 611–647. https://doi.org/10.1080/03066150.2015.1101456

Broadway, M. J. (2002). The British Slaughtering Industry: A Dying Business? *Geography*, *87*(3), 268–280.

Brown, T. (2020). When food regimes become hegemonic: Agrarian India through a Gramscian lens. *Journal of Agrarian Change*, *20*(1), 188–206. https://doi.org/10.1111/joac.12344

Burch, D. (2007). Private equity companies and the agri-food sector. In *Agri-food Research Network Annual Conference* (pp. 25–29). University of Queensland.

Burch, D., & Lawrence, G. (2005). Supermarket own brands, supply chains and the transformation of the agri-food system. *International Journal of Sociology of Agriculture and Food*, *13*(1), 1–18. Retrieved from https://www.researchgate.net/publication/29456270_Supermarket_Own_Brands_Supply_Chains_and_the_Transformation_of_the_Agri-Food_System

Burch, D., & Lawrence, G. (2007). Supermarket own brands, new foods and the reconfiguration of agri-food supply chains. In D. Burch & G. Lawrence (Eds.), *Supermarkets and agri-food supply chains: Transformations in the production and consumption of foods* (pp. 100–128). London: Edward Elgar.

Burch, D., & Lawrence, G. (2009). Towards a third food regime: behind the tranformation. *Towards a Third Food Regime: Behind the Transformation*, *26*, 267–279. https://doi.org/https://doi.org/10.1007/s10460-009-9219-4

Buttel, Frederick H. (2001). Some Reflections on Late Twentieth Century Agrarian Political Economy. *Sociologia Ruralis*, *41*(2), 165–181. https://doi.org/10.1111/1467-9523.00176

Byres, T. J. (1995). Political economy, the Agrarian question and the comparative method. *Journal of Peasant Studies*, *22*(4), 561–580. https://doi.org/03066159508438589

Byres, T. J. (1997). *Capitalism from Above and Capitalism from Below: An Essay in Comparative Political Economy.* New York: Palgrave Macmillan.

Camarero, L. (2017). Territorios encadenados, tránsitos migratorios y ruralidades adaptativas. *Mundo Agrario*, *18*(37), 044. https://doi.org/10.24215/15155994e044

Camba, A. A. (2019). The food regime in late colonial Philippines: Pathways of appropriation and unpaid work. *Journal of Agrarian Change*, *19*(1), 101–121. https://doi.org/10.1111/joac.12269

Campbell, H. (2009). Breaking new ground in food regime theory: corporate environmentalism, ecological feedbacks and the 'food from somewhere' regime? *Agriculture and Human Values*, *26*(4), 309–319. https://doi.org/10.1007/s10460-009-9215-8

Campbell, H., & Dixon, J. (2009). Introduction to the special symposium: reflecting on twenty years of the food regimes approach in agri-food studies. *Agriculture and Human Values*, *26*(4), 261–265. https://doi.org/10.1007/s10460-009-9224-7

Clapp, J. (2021). The problem with growing corporate concentration and power in the global food system. *Nature Food*, *2*(6), 404–408. https://doi.org/10.1038/s43016-021-00297-7

Clapp, J. (2022). Concentration and crises: exploring the deep roots of vulnerability in the global industrial food system. *The Journal of Peasant Studies*, 1–25. https://doi.org/10.1080/03066150.2022.2129013

Corrado, A. (2016). Agrarian change and migrations in the Mediterranean from a food regime perspective. In A. Corrado, C. de Castro, & D. Perrotta (Eds.), *Migration and Agriculture. Mobility and change in the Meditrranean area* (pp. 311–331). London: Routledge.

Cronon, W. (1991). *Nature's Metropolis: Chicago and the Great West*. W. W. Norton & Co.

Dixon, J. (2009). From the imperial to the empty calorie: how nutrition relations underpin food regime transitions. *Agriculture and Human Values*, *26*(4), 321–333. https://doi.org/10.1007/s10460-009-9217-6

Dixon, M. (2014). The land grab, finance capital, and food regime restructuring: the case of Egypt. *Review of African Political Economy*, *41*(140), 232–248. https://doi.org/10.1080/03056244.2013.831342

Edelman, M., & Borras, S. M. (2016). *Political Dynamics of Transnational Agrarian Movements*. Halifax: Fernwood Publishing. Retrieved from https://practicalactionpublishing.com/book/1649/political-dynamics-of-transnational-agrarian-movements

Ellis, F. (1988). *Peasant economics*. Cambridge: Cambridge Univ Press.

Farina, F. (2017). Japan in the International Food Regimes: Understanding Japanese Food Self-Sufficiency Decline. In A. Niehaus & T. Walravens (Eds.), *Feeding Japan*. Springer Nature. https://doi.org/10.1007/978-3-319-50553-4_14

Friedmann, H. (1983). State Policy andWorld Commerce: The Case of Wheat, 1815 to the Present. In P. McGowan & C. W. Kegley Jr (Eds.), *Foreign Policy and the ModernWorld-System* (pp. 125–155). Beverly Hills: Sage Publishing.

Friedmann, H. (1987). The family farm and the international food regimes. In T. Shanin (Ed.), *Peasants and Peasant Societies* (pp. 247–258). London: Basil Blackwell.

Friedmann, H. (1990). The Origins of Third World Food Dependence. In H. Bernstein, B. Crow, M. MacKintosh, & C. Martin (Eds.), *The Food Question: Profits Versus People* (pp. 13–31). New York: Monthly Review Press.

Friedmann, H. (1993). The Political Economy of Food: A Global Crisis. *New Left Review*, *197*, 29–57.

Friedmann, H. (2005). From Colonialism to Green Capitalism: Social Movements and

Emergence of Food Regimes. In F.H. Buttel & P. McMichael (Eds.), *New Directions in the Sociology of Global Development (Research in Rural Sociology and Development), Vol. 11.* (pp. 227–264). Binlgey (UK): Emerald Group Publishing Limited. https://doi.org/10.1016/S1057-1922(05)11009-9

Friedmann, H., & McMichael, P. (1989). AGRICULTURE AND THE STATE SYSTEM: The rise and decline of national agricultures, 1870 to the present. *Sociologia Ruralis*, *29*(2), 93–117. https://doi.org/10.1111/j.1467-9523.1989.tb00360.x

Gaviria, C. (2011). The Post-war International Food Order: The Case of Agriculture in Colombia. *Lecturas de Economía*, (2011), 119–150. Retrieved from https://www.redalyc.org/articulo.oa?id=155222746005

González De Molina, M., & Lopez-Garcia, D. (2021). Principles for designing Agroecology-based Local (territorial) Agri-food Systems: a critical revision. *Agroecology and Sustainable Food Systems*, *45*(7), 1050–1082. https://doi.org/10.1080/21683565.2021.1913690

González de Molina, M., Soto, F., Guzmán, G., Infante-Amate, J., Aguilera, E., Vila, J., & García Ruíz, R. (2020). *The social metabolism of Spanish Agriculture, 1900-2008. The Mediterranean Way towards industrialization.* Springer Open.

Goodman, D., & Watts, M. (1994). Reconfiguring the rural or fording the divide?: Capitalist restructuring and the global agro-food system. *Journal of Peasant Studies*, *22*(1), 1–49. https://doi.org/10.1080/03066159408438565

Goodman, D., & Watts, M. (1997). Agrarian questions: Global appetite, local metabolism: Nature, culture, and industry in Fin-de-siècle agro-food systems. In D. Goodman & M. Watts (Eds.), *Globalizing food: Agrarian questions and global restructuring* (pp. 1–32). London: Routledge.

Gras, C., & Hernández, V. (2014). Agribusiness and large-scale farming: capitalist globalisation in Argentine agriculture. *Canadian Journal of Development Studies / Revue Canadienne d'études Du Développement*, *35*(3), 339–357. https://doi.org/10.1080/02255189.2014.933702

Green, W. N. (2021). Placing Cambodia's agrarian transition in an emerging Chinese food regime. *The Journal of Peasant Studies*, 1–24. https://doi.org/10.1080/03066150.2021.1923007

Greenberg, S. (2015). Agrarian reform and South Africa's agro-food system. *The Journal of Peasant Studies*, *42*(5), 957–979. https://doi.org/10.1080/03066150.2014.993620

Hawkes, C., & Parsons, K. (2019). Brief 1. Tackling Food Systems Challenges: The Role of Food Policy. In Center of Food Policy (Ed.), *Rethinking Food Policy: A Fresh Approach to Policy and Practice*. London: Center of Food Policy.

Heis, A. (2015). The alternative agriculture network Isan and its struggle for food sovereignty – a food regime perspective of agricultural relations of production in Northeast Thailand. *ASEAS – Austrian Journal of South-East Asian Studies*, *8*(1), 67–86. https://doi.org/doi 10.14764/10.ASEAS-2015.1-5

HLPE. (2019). *Agroecological and other innovative approaches for sustainable agriculture and food systems that enhance food security and nutrition*. Rome. Retrieved from https://www.fao.org/3/ca5602en/ca5602en.pdf

Homes, P., & Narotzky, S. (2019). Within and Beyond the Market System: The Organic Cooperatives in Catalonia. In V. Siniscalchi & K. Harper (Eds.), *Food Values in Europe* (pp. 133–146). London: Bloomsbury Accademic.

Hornborg, A., McNeill, J. R., & Martinez-Alier, J. (Eds.). (2007). *Rethinking environmental history: world-system history and global environmental change.* Lanham: Altamira Press.

IAASTD. (2009). Agriculture at a Crossroads: Global Report. *Global Report*. https://doi.org/10.1080/03066150903155008

Infante-Amate, J., Urrego-Mesa, A., Piñero, P., & Tello, E. (2022). The open veins of Latin America: Long-term physical trade flows (1900–2016). *Global Environmental Change*, *76*, 102579. https://doi.org/10.1016/j.gloenvcha.2022.102579

IPES-Food. (2016). From uniformity to diversity: a paradigm shift from industrial agriculture to diversified agroecological systems. Retrieved from http://www.ipes-food.org/_img/upload/files/UniformityToDiversity_FULL.pdf

IPES-Food. (2017). *Too big to feed: Exploring the impacts of mega-mergers, concentration, concentration of power in the agri-food sector.*

IPES-Food. (2019). *Towards a Common Food Policy for the EU*. Retrieved from http://www.ipes-food.org/pages/CommonFoodPolicy

Jakobsen, J. (2018). Towards a Gramscian food regime analysis of India's agrarian crisis: Counter-movements, petrofarming and Cheap Nature. *Geoforum*, *90*, 1–10. https://doi.org/10.1016/j.geoforum.2018.01.015

Jakobsen, J. (2019). The maize frontier in rural South India: Exploring the everyday dynamics of the contemporary food regime. *Journal of Agrarian Change*, *20*, 137–162. https://doi.org/https://doi.org/10.1111/joac.12337

Jakobsen, J. (2021). New food regime geographies: Scale, state, labor. *World Development*, *145*, 105523. https://doi.org/10.1016/j.worlddev.2021.105523

Koning, N. (1994). *The Failure of Agrarian Capitalism: Agrarian Politics in the UK, Germany, the Netherlands and the USA, 1846–1919*. London: Routledge.

Krausmann, F., & Langthaler, E. (2019). Food regimes and their trade links: A socio-ecological perspective. *Ecological Economics*, *160*, 87–95. https://doi.org/10.1016/j.ecolecon.2019.02.011

Lapegna, P., & Perelmuter, T. (2020). Genetically modified crops and seed/food sovereignty in Argentina: Scales and states in the contemporary food regime. *The Journal of Peasant Studies*, *47*(4), 700–719. https://doi.org/https://doi.org/10.1080/03066150.2020.1732933

Le Heron, R., & Roche, M. (1995). A "fresh" place in food's space. *Area*, *27.1*, 23–33. https://doi.org/https://www.jstor.org/stable/20003502

Lin, S. Y. (2021). Restoring the State back to Foor Regime Theory: China's Agribusiness Investment inthe Global Soybean Commodity Chain. *Journal of Contemporary Asia*. https://doi.org/https://www.tandfonline.com/toc/rjoc20/current

López-García, D., & González de Molina, M. (2021). An Operational Approach to Agroecology-Based Local Agri-Food Systems. *Sustainability*, *13*(15), 8443. https://doi.org/10.3390/su13158443

Magnan, A. (2012). Food Regimes. In J. M. Pilcher (Ed.), *The Oxford Handbook of Food History* (pp. 370–388). Oxford: Oxford University Press. https://doi.org/10.1093/oxfordhb/9780199729937.013.0021

McKenna, M., Roche, M., & Le Heron, R. (1998). Sustaining the fruits of labour: A comparative localities analysis of the integrated fruit production programme in New Zealand's apple industry. *Journal of Rural Studies*, *14*(4), 393–409. https://doi.org/10.1016/S0743-0167(98)00029-1

McMichael, P. (2005). Global development and the corporate food regime. In Frederick H. Buttel & P. McMichael (Eds.), *New Directions in the Sociology of Global Development* (pp. 265–299). Oxford: Oxford. https://doi.org/10.1016/S1057-

1922(05)11010-5

McMichael, P. (2008). Peasants Make Their Own History, But Not Just as They Please . . . *Journal of Agrarian Change*, *8*(2–3), 205–228. https://doi.org/10.1111/j.1471-0366.2008.00168.x

McMichael, P. (2009). A food regime genealogy. *The Journal of Peasant Studies*, *36*(1), 139–169. https://doi.org/10.1080/03066150902820354

McMichael, P. (2013). *Food Regimes and Agrarian Questions*. Practial Action Publishing. https://doi.org/http://www.jstor.org/stable/j.ctt1hj553s

McMichael, P. (2019). Does China's 'going out' strategy prefigure a new food regime? *The Journal of Peasant Studies*, *47*(1), 116–154. https://doi.org/10.1080/03066150.2019.1693368

Mikle, G., & Randelli, F. (2022). The evolution of rural areas influenced by large-scale farming: four case studies from Hungary. *GeoJournal*, *87*(1), 99–110. https://doi.org/10.1007/s10708-020-10245-w

Moore, J. W. (2008). Ecological Crises and the Agrarian Question in World-Historical Perspective. *Monthly Review*, *60*(6), 54–63.

Moore, J. W. (2015a). *Capitalism in the web of life*. London: Verso.

Moore, J. W. (2015b). Cheap Food and Bad Climate: From Surplus Value to Negative Value in the Capitalist World-Ecology. *Critical Historical Studies*, *2*(1), 1–43.

Moran, W., Blunden, G., Workman, M., & Bradly, A. (1996). Family farmers, real regulation, and the experience of food regimes. *Journal of Rural Studies*, *12*(3), 245–258. https://doi.org/10.1016/0743-0167(96)00016-2

Mukahhal, W., Abebe, G. K., Bahn, R. A., & Martiniello, G. (2022). Historical Construction of Local Food System Transformations in Lebanon: Implications for the Local Food System. *Frontiers in Sustainable Food Systems*, *6*. https://doi.org/10.3389/fsufs.2022.870412

Narotzky, S. (2012). Provisioning. In J. G. Carrier (Ed.), *A Handbook of Economic Anthropology, Second Edition* (pp. 77–94). Northampton: Edward Elgar Publishing. https://doi.org/10.4337/9781849809290.00012

Netting, R. M. (1993). *Smallholders, Householders. Farm Families and the Ecology of Intensive, Sustainable Agriculture*. Standford: Standford University Press.

O'Rourke, K.H., & Williamson, J. G. (2001). *Globalization and History: The Evolution of a Nineteenth-century Atlantic Economy*. Boston: MIT Press.

O'Rourke, Kevin H. (1997). The European Grain Invasion, 1870–1913. *The Journal of Economic History*, *57*(4), 775–801. https://doi.org/10.1017/S0022050700019537

Offer, A. (1991). *The First World War: An Agrarian Interpretation*. Oxford: Oxford University Press.

Otero, G. (2012). The neoliberal food regime in Latin America: state, agribusiness transnational corporations and biotechnology. *Canadian Journal of Development Studies/Revue Canadienne d'études Du Développement*, *33*(3), 282–294. https://doi.org/10.1080/02255189.2012.711747

Otero, G. (2016). Review of Philip McMichael's Food Regimes and Agrarian Questions. *Journal of World-Systems Research*, *22*(1), 299–305. https://doi.org/10.5195/jwsr.2016.651

Otero, G., & Lapegna, P. (2016). Transgenic crops in Latin America: Expropriation, negative value and the state. *Journal of Agrarian Change*, *16*(4), 665–674.

https://doi.org/https://doi.org/10.1111/joac.12159

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., … Moher, D. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ*, n71. https://doi.org/10.1136/bmj.n71

Patel, R. (2013). The Long Green Revolution. *Journal of Peasant Studies*, *40*(1), 1–63. https://doi.org/10.1080/03066150.2012.719224

Pechlaner, G., & Otero, G. (2010). The Neoliberal Food Regime: Neoregulation and the NewDivision of Labor in North America. *Rural Sociology*, *75*(2), 179–208. https://doi.org/10.1111/j.1549-0831.2009.00006.x

Picado, W. (2022). Evaluating the Green Revolution Dominant Narrative for Latin America: Technology, Geopolitics, and Institutions. In A. Barahona (Ed.), *Handbook of the Historiography of Latin American Studies on the Life Sciences and Medicine. Historiographies of Science* (pp. 1–19). Springer. https://doi.org/10.1007/978-3-030-48616-7_14-2

Pietilainen, E. P., & Otero, G. (2019). Power and dispossession in the neoliberal food regime: oil palm expansion in Guatemala. *The Journal of Peasant Studies*, *46*(6), 1142–1166. https://doi.org/10.1080/03066150.2018.1499093

Pistorious, R., & Van Wijk, J. (1999). *The exploitation of plant genetic information. Political strategies in crop development.* Oxford University Press.

Pritchard, B. (2009a). Food Regimes. In *Encyclopedia of Human Geography* (pp. 221–225). Elsevier. https://doi.org/doi:10.1016/b978-008044910-4.00165-6

Pritchard, B. (2009b). The long hangover from the second food regime: a world-historical interpretation of the collapse of the WTO Doha Round. *Agriculture and Human Values*, *26*(4), 297–307. https://doi.org/10.1007/s10460-009-9216-7

Pritchard, W. N. (1998). The Emerging Contours of the Third Food Regime: Evidence from Australian Dairy and Wheat Sectors. *Economic Geography*, *74*(1), 64–74. https://doi.org/10.1111/j.1944-8287.1998.tb00105.x

Ríos-Núñez, S. M., & Coq-Huelva, D. (2015). The Transformation of the Spanish Livestock System in the Second and Third Food Regimes. *Journal of Agrarian Change*, *15*(4), 519–540. https://doi.org/10.1111/joac.12088

Rioux, S. (2018). Rethinking food regime analysis: an essay on the temporal, spatial and scalar dimensions of the first food regime. *The Journal of Peasant Studies*, *45*(4), 715–738. https://doi.org/10.1080/03066150.2017.1351432

Roche, M. (1995). New Zealand: The Colonial Farm in the Pacific Century. *Pacific Viewpoint*, *36*(2), 115–127. https://doi.org/10.1111/apv.362002

Roche, M. (2012). Food Regimes Revisited: A New Zealand Perspective. *Urbani Izziv*, *23*(s 2), s62–s75. https://doi.org/10.5379/urbani-izziv-en-2012-23-supplement-2-005

Salzmann, P. (2018). A Food Regime's Perspective on Palestine: Neoliberalism and the Question of Land and Food Sovereignty within the Context of Occupation. *Austrian Journal of Development Studies*, *XXXIV*(1–2018), 14–34. https://doi.org/10.20446/JEP-2414-3197-34-1-14

Schermer, M. (2015). From '"Food from Nowhere"' to '"Food from Here:"' changing producer–consumer relations in Austria. *Agriculture and Human Values*, *32*, 121–132. https://doi.org/10.1007/s10460-014-9529-z

Schiller, K., Godek, W., Klerkx, L., & Poortvliet, P. M. (2020). Nicaragua's agroecological transition: Transformation or reconfiguration of the agri-food regime?

Agroecology and Sustainable Food Systems, *44*(5), 611–628. https://doi.org/10.1080/21683565.2019.1667939

Scott, J. C. (1985). *Weapons of the weak: everyday forms of peasant resistance.* New Haven: Yale University Press.

Scott Y., L. (2021). Restoring the State back to Food Regime Theory: China's Agribusiness Investment in the Global Soybean Commodity Chain. *Journal of Contemporary Asia*. https://doi.org/10.1080/00472336.2022.2032279

Scott Y., L. (2022). Localization of the corporate food regime and the food sovereignty movement: taiwan's food sovereignty movement under "third regionalism." *Food, Culture & Society*. https://doi.org/https://doi.org/10.1080/15528014.2022.2030889

Shanin, Teodor. (1971). *Peasants and peasant societies: selected readings*. (T. Shanin, Ed.). Harmondsworth: Penguin Books.

Shanin, Teodor. (1972). *The awkward class: political sociology of peasantry in a developing society: Russia 1910-1925*. Oxford: Clarendon Press.

Shiva, V. (2016). *Who Really Feeds the World? The failures of agricusiness and the promise of agroecology*. London: Zed Books.

Soldevila Lafon, V., Rosell Foxá, J., & Viladomiu Canela, L. (2015). Repercusiones de los regímenes alimentarios mundiales en la evolución de la seguridad alimentaria el caso de Mauritania. *Revista Española de Estudios Agrosociales y Pesqueros*, *242*, 13–48.

Søndergaard, N. (2020). Food regime transformations and structural rebounding: Brazilian state–agribusiness relations. *Territory, Politics, Governance*, 1–20. https://doi.org/10.1080/21622671.2020.1786447

Stringer, C. A. (2000). New Zealand's Agro-Food Trade to Korea. *World Development*, *28*(3), 425–442. https://doi.org/10.1016/S0305-750X(99)00141-2

Torrado, M. (2016). Food Regime Analysis in a Post-Neoliberal Era: Argentina and the Expansion of Transgenic Soybeans. *Journal of Agrarian Change*, *16*(4), 693–701. https://doi.org/10.1111/joac.12158

van der Ploeg, J. D. (2014). *Peasants and the Art of Farming: A Chayanovian Manifesto*. New York: Fernwood Publishing.

van der Ploeg, J. D. (2018). *The New Peasantries. Rural Development in Times of Globalization.* Oxon: Routledge.

Vicol, M., & Pritchard, B. (2020). Rethinking rural development in Myanmar's Ayeyarwady Delta through a historical food regimes frame. *Singapore Journal of Tropical Geography*, *42*(2021), 246–283. https://doi.org/10.1111/sjtg.12315

Wallerstein, I. (1989). *The Modern World-System. The Second Great Expansion of the Capitalist World-Economy, 1730–1840* (Vol. III). San Diego: Academic Press.

Wang, K. (2018). East Asian food regimes: agrarian warriors, edamame beans and spatial topologies of food regimes in East Asia. *The Journal of Peasant Studies*, *45*(4), 739–756. https://doi.org/10.1080/03066150.2017.1324427

Weiler, A. M., Sexsmith, K., & Minkoff-Zern, L.-A. (2020). Parallel Precarity: A Comparison of U.S. and Canadian Agricultural Guest Worker Programs. *International Journal of Sociology of Agriculture and Food*, *26*(2), 143–163. https://doi.org/https://doi.org/10.48416/ijsaf.v26i2.57

Werner, M. (2019). Placing the state in the contemporary food regime: uneven regulatory development in the Dominican Republic. *The Journal of Peasant Studies*, *48*(1), 137–158. https://doi.org/10.1080/03066150.2019.1638367

Wesz Junior, V. J., Escher, F., & Fares, T. M. (2021). Why and how is China reordering the food regime? The Brazil-China soy-meat complex and COFCO's global strategy in the Southern Cone. *The Journal of Peasant Studies*, 1–29. https://doi.org/10.1080/03066150.2021.1986012

Winders, B. (2009). The Vanishing Free Market: The Formation and Spread of the British and US Food Regimes. *Journal of Agrarian Change*, *9*(3), 315–344. https://doi.org/10.1111/j.1471-0366.2009.00214.x

ANNEX I. Categories and key words

MAIN CATEGORY	KEY WORDS
STATE REGULATIONS	state; regulation
DOMINANT FORMS OF CAPITAL	dominant; control; power; elite; class; family; capital
SOCIAL AND FARMER MOVEMENTS	movement; demand; resistance; social
HETEMONIC AND POWERFUL NATIONS AT A GLOBAL LEVEL	US; UK; hegemonic; power
IDEOLOGICAL PARADIGM	ideology; paradigm; neoliberal; free trade; food aid; protectionism; context
HISTORICAL AND POLITICAL CONTEXT	history; historical
PRODCUTION OF AGRO-INDUSTRIAL INPUTS	inputs; fertilizer; chemical; pesticide; seed; machinery; industry
PRIMARY AGRICULTURAL PRODUCTION	production; produce; output; inputs; intensive; extensive; model; integration; fertilizer; chemical; pesticide; seed; machinery; organic; farm; unit; size; labour; labor; worker; farmer; migrant; employee; employment; peasant; income; reproduction; wage; salary
LAND	land; dispossession
FOOD INDUSTRY	industry; factories; process; food product
MARKETS	export; import; domestic; market; trade; wholesale; wholesaling; retailing; retail; supermarket; concentration
AGRI-FOOD CHAIN	integration; merge; chain
PRICES	price
CONSUMPTION AND DIET	diet; basket; consumption; reproduction; cost; price; cheap; purchasing
SELF SUFFICIENCY	self-sufficiency
FINANCES	finance; credit; investment
IMPACTS	impact; environment; farmer

ANNEX II. Categories and articles addressing them (see Excel 1)