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Power relations in the wheat-to-bread commodity chain in South Africa

Katherine Joynt

A thesis submitted to the University of the Witwatersrand in fulfillment of the requirements of the degree of Doctor of Philosophy (Sociology)

2019

Supervisor: Professor Jacklyn Cock

Declaration

I declare that this thesis is my work and it has been written by me in its entirety. It is submitted for the degree of Doctor of Philosophy in Sociology to the University of the Witwatersrand.

This thesis has not previously been submitted for any other degree or examination to any other university.

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Katherine Joynt

ABSTRACT

A familiar vision of the future of food holds that the worlds' population will be fed sufficiently and sustainably through extraordinary productivity-enhancing innovation in technology and bioscience, combined with market efficiency in both financialised trade and global agricultural production. Although this vision is widely accepted by the public and adopted by development institutions and states, the findings of this study suggest that this account of market-led global development is an improbability. Rather, the actual effects of financialised neoliberal capitalism are contradictory and uneven. In this thesis I demonstrate how the reproduction and remaking of global power through both the real economy and financialisation has effects on local economic actors.

This thesis uses a word-systems power resources approach to analyse of shifting power relations in the wheat to bread commodity chain in South Africa where industrial bread is a staple food for poor consumers. Typical of many chains in the global capitalist agro-food system, this commodity chain is characterised by vertical and horizontal consolidation in every node from seed to retail, and the increasing importance of finance actors. This thesis concretely demonstrates how the historically embedded oligopolistic power of large agribusiness, food processing corporates and retailers is maintained and expanded through particular governance strategies, innovation, and the use of economic, hegemonic and political influence. Furthered by increasing financialisation, these power relations and processes in the wheat to bread commodity chain impact on smaller economic actors, workers and consumers. This is done through the 'squeezing' of capitalist wheat farmers who also face severe ecological risks and constraints, the subsequent consolidation of wheat farms and the digitised mechanisation of the labour process, and the provision of a 'cheap' and unhealthy staple food for poor consumers.

The shrinking wheat industry in South Africa is characterised by farmer debt, insolvency and the retreat of smaller-scale producers who tended to use more labour-intensive farming from wheat production, while the privitised wheat seed industry is now entering what seed breeders and wheat producers have termed a 'crisis'. In turn, worker power is weakened through displacement on wheat farms due to mechanisation, and increasing precarity in the milling, baking and retail nodes of the chain. Households, to which workers and the unemployed belong, are faced with food insecurity which is exacerbated by the anti-competitive behaviour in food chains, with the price-fixing bread

cartel being just one example, and the volatile wheat prices which are reflected in the price of bread. This case study contributes to our understanding of the workings of the global agro-food system within which agrarian and food movements seek to create alternatives. It suggests that these movements must take seriously the contradictory role of the state as well as the pressure on agrarian capital in the context of global oligopolistic and hegemonic corporate and finance structures.

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CHAPTER 1

Introduction

Introduction

A familiar narrative is that in the future, the issue of worldwide hunger will be solved through the use of productivity-enhancing innovation in technology and bioscience, and market efficiency in both financialised trade and global agricultural production. Although this narrative is widely accepted by the public and adopted by development institutions and states, the findings of this study suggest that this account of market-led global development is improbable. Rather, the actual effects of financialised neoliberal capitalism are contradictory and uneven. In this thesis I demonstrate how the reproduction and remaking of global power through both the real economy and financialisation has effects on local economic actors.

This case study on a staple food in South Africa traces the global commodity chain for the production, distribution and consumption of industrial bread, all the way from the commercial wheat farm and its seed, agtech-machinery and agro-chemical inputs, to the elusive world of agribusiness investors, commodity trading of wheat, financiers and shareholders, to the milling and baking giants, to the large retailers, and finally to consumers located in every working-class household in South Africa. After tracing the commodity chain for industrial bread I situate it in its historical context and set out to answer the following research question: What are the power relations between actors in the wheat-to-bread commodity chain?

I demonstrate the specific ways in which transnational corporations (TNCs) and milling and baking bread giants have leveraged different forms of structural, associational, institutional and societal power resources to assert their interests. An important contradictory and unintended outcome of this exercise of power is the simultaneous consolidation and shrinking of the wheat industry in South Africa. Predominantly large-scale South African wheat producers, who are considered to be the least subsidised farmers in the world, have survived the global competition in wheat farming by the ongoing digitised-mechanisation of their wheat production and by the restructuring of their wheat marketing operations to fit the logic of global financialised grain markets. Correspondingly there is a shift in their subjective identities from local 'boer' (farmer) to mobile 'businessmen in agriculture'. This reflects the construction of a broader corporate business culture in farming that has developed alongside the increased involvement of corporate and finance capital in agriculture nodes.

The darker side of the shrinking wheat industry is characterised by farmer debt, insolvency and the retreat of smaller-scale wheat producers who tend to use more labour-intensive farming, while the privatised wheat seed industry is entering what is seen as a crisis by seed breeders and wheat producers. In turn, worker power is weakened through displacement on wheat farms due to mechanisation, and increasing precarity characterises work in the milling, baking and retail nodes of the chain. Households, to which workers and the unemployed belong, are faced with food insecurity because they are unable to afford sufficient nutritious food. This is exacerbated by the anti-competitive behaviour of corporates in food chains, with the price-fixing bread cartel being just one example, and the volatile wheat prices which are reflected in the price of bread.

The contradictions of capitalist agriculture are embodied in a loaf of industrial bread. It is imbued with visions of innovation, productivity, modernity and abundance, yet hidden within it are processes of exclusion and inequality. Bread also contains powerful symbolic and cultural meanings that extend beyond its role as food. Bread figures centrally in daily household life and in the imaginaries of ordinary people in South Africa. It is a symbol of good modern choices; neatly packaged and fortified with vitamins and minerals to nourish the children. It is a dependable constant; it always tastes the same, it is always fluffy and it never goes stale. It is a time-saver on busy mornings; a convenience food to pack in the *skufftins*[1] of loved ones. And it is survival; a filler when meat and vegetables are out of pockets' reach. As Rubel (2011:60) said, 'when all the variables are woven together into a finished loaf, that loaf means something to the people who buy it that is part of a larger narrative of their lives, of their ideas about who they are'.

Historically bread's powerful symbolic charge has placed it at the heart of contention. The 'staff of life' figured centrally in the French revolution, the Russian Revolution, the Corn Laws food riots and in the recent uprising in Egypt (Cock et al. 2008). In South Africa, recent bread protests and class action against the bread cartel have drawn on the mobilisation of societal and institutional power resources and helped to bridged class segregations and unite labour and consumers. The extension of the global financial and corporate logic to the production of and distribution of food creates new avenues for capital accumulation, but simultaneously creates a powerful opportunity for societal mobilisation against this logic.

[1] A *skufftin* is a container for food which is taken to school or work.

Economic context

One of the systemic features of global capitalism is wealth inequality. Globally, there has been more wealth accumulated than ever before, and yet the persistence of poverty is widespread. Seventy per cent of people live in countries where income and wealth inequality is greater than it was thirty years ago (Oxfam 2014c:3). The deeply interconnected nature of the processes of wealth accumulation and economic impoverishment were brought into sharp focus in the aftermath of the 2007/8 global financial crisis, which is vividly illustrated by food. Wheat and maize are staple foods for poor people around the world, but in the world of global trade they are *abstracted* commodities which are tied into a financialised system. This system relies on price volatility as central to its functioning, and is based on the commodification of risk. To this end, financial reward for risk-taking is routine (see Chapter 6).

Financial crises generate massive wealth accumulation on the one hand, and due to the way in which food is linked into financialised global economic trade, deeper poverty and hunger on the other. The lead-up to the 2007/8 crisis was highly profitable for the risk-taking financial actors who drove it[2]. An estimated US$2 trillion was accumulated from the fees and securitisation of nonprime credit loans and mortgages, during which time exorbitant bonuses totalling billions were paid to 'top' executives and traders (Crotty 2009:565). In the midst of the crisis, while governments were using the money of billions of taxpayers to bail out the banks and rescue the global financial system, the same high-level executives and traders continued to take exorbitant bonuses.

[2] At the epicentre of the crisis, large universal banks recklessly offered nonprime borrowers mortgage and credit card loans that these borrowers could not afford (Wilmarth 2009). They attempted to offset the ensuing risk by packaging and passing on these loans in the form of derivatives and other financial instruments to investors through hedge funds. Insurance-backed guarantees on corporate bankruptcy soon followed, leading to a rise in demand for these derivatives. The subsequent spread of these derivatives across the financial system ensured that 'betting on the misery of others soon became the misery of all' (Bryan and Rafferty 2011:198). These actions caused the near-collapse of the global financial system.

In stark contrast, following the near collapse of the global financial system, staple food prices in twenty-two developing countries skyrocketed by twenty to fifty per cent, leading to an increase in poverty amongst already-poor consumers who battled to afford staple foods, let alone sufficient nutritious food (Compton et al. 2009:4). Acute malnutrition among children under the age of five increased by up to fifty per cent in poor areas in Bangladesh, Cambodia and Mauritania (Ibid.:iv). The widespread use of credit by poor consumers to buy food during the crisis points to a further loss for the poor and a further benefit for specific financial actors (Ibid.).

Subsequent food riots in the global south drew public attention to the issue which was met with calls for more accountability and lessening inequality. Recently waves of violent food riots have resurfaced in countries such as Egypt, Cameroon, Cote d'Ivoire, Ethiopia and Indonesia. In South Africa, the Congress of South African Trade Unions (COSATU) recently organised marches in four provinces to protest against rising living costs, including food and energy (Sapa 2008a, 2008b). The biggest of these marches was in Gauteng with a total of twenty-five thousand protesters (Ibid.). Food marches and riots are public forms of the poor responding to the increase in food prices and what Ferguson (2006:80) calls a 'de-moralising economy'.

Research rationale and background

There are three main reasons that research on industrial bread in South Africa is important. First, bread is an increasingly popular staple food in South Africa. With rapid increases in the process of urbanisation consumers are relying more heavily on ready-to-eat convenience foods, such as bread, for sustenance. Second, there has been a large increase in the price of bread over the last few years,

which especially affects poor consumers who already spend a high proportion of their household income on food. Third, this study raises the issue of national food sovereignty more broadly. South Africa is now a net importer of wheat, the main ingredient in bread, which means that its wheat prices are subject to volatility in the global market. I unpack the importance of these three reasons below.

Bread consumption levels are high in South Africa. After maize, bread is the second most important staple food in terms of energy in the national diet. However, consumers in South Africa now spend more money on bread, at ZAR6,700 million per annum in 2013, than on maize, at ZAR6,200 million per annum (DoAFF 2013a:6)[3]. An estimated 2.8 billion loaves of bread are consumed nationally per annum. This is an average of sixty-two loaves per person per year, with more loaves consumed in urban areas (SACB 2005)[4]. Almost all South Africans are able to access bread for purchase, with ninety-seven per cent of all food stores and cafés in the country selling bread (Ibid.). Hobson (2006) shows that consumers are turning away from consuming maize meal to consuming bread as the process of urbanisation accelerates. There is a gender dimension to this process because bread is a convenience food while cooking maize meal is a time-consuming chore usually performed by women who take on the task of food provision and preparation in most households in South Africa.

Bread prices have fluctuated over the last few years. Although South Africa was previously self-sufficient in wheat production, it is now a net importer of wheat which means that it is exposed to international wheat grain market prices. Factors influencing wheat price volatility include: weather

[3] A household survey conducted with forty poor households headed by unemployed people and pensioners in Pimville and Kliptown Informal Settlement in Soweto, Johannesburg, revealed that an average of sixty per cent of monthly income was spend on food, with thirty-one per cent spent on bread alone (Joynt 2010:34).
[4] Eighty-two loaves are consumed per person per year in the more urban province of Gauteng (almost a quarter of a loaf of bread per person per day) compared to forty-four loaves per person per year in the more rural province of Limpopo (SACB 2005).

conditions and political influences on price and production in different parts of the world; increasing energy costs and other input costs including seed, fertiliser and herbicides; climate change (droughts and floods); exchange rates and inflationary pressures; commodity speculation on wheat; the conversion of grain crops to biofuels[5]; and growing global demand for wheat.

Poor people are the worst affected by rising food prices because they struggle to afford enough food, let alone sufficient nutritious food. Poor households spend up to fifty per cent of their household income on food; in extreme cases, ninety per cent of a household's income can go to food alone (Joynt 2010). A lack of food affects women and children most, and women and the elderly bear the responsibility for the food crisis. By taking on the responsibility of feeding the household, women and the elderly have to implement survival strategies when there is insufficient food. Survival strategies include cutting down, themselves, on eating, cutting out 'luxuries' (for example, tomatoes and toothpaste), spending time looking for items of food on sale, taking out food loans leading to a cycle of debt, and taking on productive strategies, such as sewing, making dumplings or growing vegetables to save income (Joynt 2010). These survival strategies are critical but individualised responses to the social crisis of hunger in South Africa.

Poor consumers were especially hard-hit by the steep rise in prices following the global financial/food crisis in 2007/8, with bread prices increasing by up to sixty per cent. During the same year, South Africa's state watchdog for anti-competitive behaviour, the Competition Commission, and its Tribunal, found that bread prices had already been at a higher supra-competitive level because the bread giants had been fixing the price of flour and bread (see Chapter 5).

[5] In 2008/9 alone, 125 million tons of cereals such as maize and wheat were diverted for biofuels increasing the price of many staple foods (ActionAid 2010:13). Around forty per cent of the corn produced in the United States is converted to ethanol (Shiva 2012:3).

The bread cartel involved in price fixing and collusion in milling and baking consisted of Pioneer Foods (Sasko and Duens Bakeries), Premier Foods (Blue Ribbon Bakery), Tiger Brands (Albany Bakeries), Tiger Foods Pride Milling and Foodcorp (Sunbake Bakeries). These four companies produce branded packaged industrial bread loaves for fifty to sixty per cent of the domestic bread market in South Africa (ACBio 2014). Each of these bread giants is vertically consolidated and owns its own large mill which, in total, account for ninety-eight per cent of milled wheat sales in South Africa (Ibid.).

It is not just the baking and milling nodes of the wheat-to-bread commodity chain that are characterised by high levels of corporate concentration. Three to four firms dominate silo storage, trading, and processing (milling of flour and baking of bread). In the wheat-to-bread chain, there are two seed companies, an estimated 3,900 large-scale commercial farms, four storage companies, and three retailers which dominate the chain[6]. I explore the historical formation of this corporate concentration in Chapter 4.

While the corporates that dominate the chain are hugely profitable, workers in each of the nodes of the bread commodity chain are in precarious positions. Workers in the production and distribution of bread are experiencing increasing casualisation, subcontracting or displacement, which has led to a reduction in bargaining power and difficulties in worker unionisation (Hobson 2006; Kenny 2004, 2014; Van der Burg 2008). The level of enforcement of conservative sectoral determinations is low and working conditions in these nodes are notoriously poor.

[6] Four retailers account for eighty per cent of local retail sales (PWC 2012).

It is in this context of poverty, inequality and food insecurity that I chose to study power relations in the wheat-to-bread commodity chain. Poverty and hunger are major issues not only in South Africa but also globally, and yet scholarly work seldom makes the link between the gendered household level of social reproduction and consumption with the power relations in the production and circulation of food.

Broad analyses exist on the nature of the agro-food system in South Africa but product-specific food commodity chains remain under-studied and under-theorised. While the wheat-to-bread commodity chain is predominantly characterised by manufacture and consumption within South Africa, South Africa imports many inputs into local commercial wheat production; and now imports most of its wheat. Further, the overarching grain trading, shareholding and financing structures of wheat-to-bread production and circulation add a global dimension to this commodity chain. Bread, an important staple food for poor people, has not been studied in terms of the shifting power relations that are so central to the processes of its highly concentrated industrial production and circulation in South Africa. My objective is to shed light on the way in which power relations operate in the wheat-to-bread commodity chain, and how these power relations impact on and are constituted by workers and households. Through this, I hope to contribute to a deeper understanding of some of the ways in which the power relations between different corporate, finance, political and social actors in food commodity chains link to global poverty and inequality.

The level of poverty in South Africa remains intolerably high. In 2015, the conservative upper bound poverty line (UBPL) was measured at ZAR992 (US$84 or €68)[7] per person per month, which

[7] At an exchange rate calculation of US$1 being equal to ZAR11,77 (South African Rand) and €1 being equal to ZAR14.57.

is a subsistence measure that does not reflect a decent living income in the South African context[8]. Poverty increased between 2011 and 2015, with fifty-six per cent of South Africans now living below the UBPL (StatsSA 2017:14). This poverty is gendered and raced, with the category of the population most likely to fall below the UBPL being young black African women, particularly those with no education, living in the rural Eastern Cape and Limpopo provinces of South Africa. Over nine out of ten (ninety-four per cent) of poor households in South Africa are headed by black Africans, and female-headed households have a thirty-six per cent lower expenditure than male-headed households (StatsSA 2017:58).

Linked to this poverty, South Africa is one of the most unequal countries in the world, with a sizeable gap between the rich and the poor. South Africa's income Gini coefficient is at 0.65, with the top ten per cent of South Africans receiving half of all wage income, while the bottom fifty per cent of the workforce receives just twelve per cent of all wage income (Oxfam 2018:12). The two richest people in South Africa own as much wealth as the bottom half of the population (Oxfam 2014a:38). This growing inequality between the richest and the poorest is exacerbated by a high (thirty-six per cent) unemployment rate alongside the informalisation of work and limited social redistribution of wealth.

Patterns of food consumption and food insecurity are a poignant illustration of this poverty and inequality. In South Africa, there is enough food to feed the country's entire population of fifty-three million people. Yet, according to the Oxfam report 'Hidden Hunger' (2014b:6), one in four

[8] The UBPL is Statistics South Africa's measurement of upper-level poverty, which uses a normative measurement of income per person per month to measure levels of poverty. This is calculated using a cost-basic-needs approach which uses a 'food basket' with a minimum recommended caloric intake of 2100 calories per day, against which broader expenditure statistics and inflation are taken into account (StatsSA 2017). However, redoing the calculation using a more realistic 'food basket' based on what poor people can afford and usually consume, shows that StatsSA's UBPL measurement is conservatively low, and therefore its measurement of poverty in South Africa is conservatively low (Budlender et al. 2015).

people in South Africa is hungry, while another quarter of the population is at risk of going hungry. Children in South Africa are severely affected by malnutrition and hunger. Malnutrition is a key driver of under-five mortality[9], with thirty-one per cent of children who die in hospital presenting as severely malnourished, and a further thirty per cent presenting as underweight (Sanders et al. 2017). Malnutrition also leads to mental and physical stunting that affects children's educational development and ability to thrive later on in their lives. The South African Demographic Health Survey reported that twenty-seven per cent of children below the age of five are stunted from malnutrition (StatsSA 2017b:27). This is a crisis that is set to deepen with increasing fuel costs and electricity costs (StatsSA 2014). Transport costs influence not only the price of food but also the cost of buying food for people, especially in rural areas. Electricity prices increased over two-hundred per cent since 2010, while prices of fuel such as paraffin have also increased, making it more expensive to cook staple foods such as maize (Oxfam 2014b:3).

Theoretical framework

The organisation of production on a global scale alongside the salience of global inequality necessitates new ways of investigating and explaining the dynamics of capitalist development. In line with this Phillips (2017) and Selwyn (2014) have challenged scholars to link patterns and processes of global inequality with power asymmetries in global production. Building on this work, my contribution is an exploration on the nature and effects of hierarchies and imbalances of power in the production, distribution and consumption of a staple food in South Africa. For this study I combine a world-systems approach to global commodity chains (GCCs) with a power resources approach to studying power relations between different actors. This approach is valuable for not

[9] The 2016 under-five mortality rate was forty-two deaths per one-thousand live births (StatsSA 2017b:18).

only exploring structural power relations but also the agency of different actors embedded within specific contexts.

The world-systems approach to GCCs offers theoretical explanatory depth for understanding issues around class and global inequality in global production, distribution and consumption (Phillips 2017; Selwyn 2014; Bair 2005). However, what remains underdeveloped in this approach is the concrete conceptualisation and operationalisation of 'power', and a considerable analytical inclusion of households and finance actors. An exploration of the wheat-to-bread commodity chain necessitates the additional inclusion of households where consumers of this staple food are situated, the state which has historically figured centrally in bread production, and finance actors who are now involved in the production and distribution of wheat.

To address these limitations I revisit the concept of 'power', and demonstrate the value of using a power resources approach (PRA) for conceptualising power relations in the wheat-to-bread commodity chain. The PRA has been used in labour studies, with labour as the central actor and an analysis of the power resources of labour (Schmalz et al. 2018). However the PRA remains underdeveloped for understanding the power resources of capital, and of consumers whom are situated in households. Further, due to its Weberian underpinnings for conceptualising power, the labour studies PRA primarily focuses on conflictual interactions, resulting in a reading of any form of resistance as necessarily a step towards social transformation. This limits its scope for considering the way in which power is not only at the heart of class struggle, but also at the heart of the reproduction of the capitalist order. I suggest that a more useful definition of social power is 'the capacities to act possessed by social agents in virtue of the enduring relations in which they participate' (Isaac 1987:22). This Marxian approach to power is a useful basis from which to develop

the power resources approach for advancing our understanding of the enduring dynamics of global capitalism.

Drawing on a Marxian understanding of power as a social relation, I develop a power resources framework that incorporates capital, labour and consumers as actors, and elaborate on different types of power resources for each actor. I add to this an analysis of market power for conceptualising capital-to-capital competition and exchange. I conclude that the combination of a heuristic framework for categorising and conceptualising empirical observations on power resources, combined with a WS theoretical approach to GCCs, offers the most explanatory value for my particular study on power relations in the wheat-to-bread commodity chain.

Research approach

For this study, I made use of qualitative research methods in order to capture different forms of structural, associational, institutional and societal power and the processes and networks in which power relations are negotiated and contested. In order to gain a full understanding of the power of every actor in the wheat-to-bread commodity chain, two main research methods were employed.

First, I conducted a thorough document analysis of both primary and secondary literature relating to the wheat-to-bread commodity chain. This included industry reports, annual company reports, government reports, reports from consumer organisations and civil society groups, food price trends and newspaper articles. Second, I conducted forty in-depth fieldwork interviews with key respondents who offered insight on each node of the commodity chain in three provinces in South Africa. This included interviews with seed breeders, wheat farmers, grain traders, financiers,

managers at wheat mills and bread bakeries, trade unionists, government officials, Competition Commission officials, class action lawyers, academics, and representatives from both consumer and producer organisations.

In order to make sense of the large amount of resultant data, I used careful coding procedures that set the ground for thorough and insightful interpretation. While the overall data from the fieldwork and document analysis provided a detailed understanding of each node in the wheat-to-bread commodity chain, I chose to focus on specific nodes for the presentation of the final study. These nodes were selected based on the level of insight that their negotiated and contested power relations offered for understanding the broader power dynamics in the wheat-to-bread commodity chain, in relation to households and workers. My methodology is explained in detail in Chapter 3.

Outline of chapters

In Chapter 2, I examine literature around the central concepts for my study; power and global commodity chains. I examine different ways in which 'power' has been conceptualised and operationalised by certain scholars in the literature. I then unpack the history, conceptual underpinnings, contributions and weaknesses of different chain/network approaches to studying power relations in the global organisation of production and international division of labour in these chains. In order to take forward the approaches with the most explanatory value for my study, while also addressing the gaps and weaknesses of these approaches, I develop a theoretical framework for my study on power relations in the wheat-to-bread commodity chain.

Chapter 3 is my methods chapter in which I elaborate on my methodological approach to undertaking this study. In this chapter, I explain why I chose a qualitative approach for studying power relations, specifically documentary analysis and in-depth interviews with actors throughout the wheat-to-bread commodity chain. I also recount some of my experiences in the field; detail the ethics of the study, and outline the way in which I analysed my findings in order to select particular nodes that could offer insight into power relations between different actors.

In Chapter 4, I situate the wheat-to-bread commodity chain historically, leading up to the contemporary context within the South African political economy. I argue that there has been a gradual shift from a 'state-managerial food regime' from the early 1900s to 1980/90s, to the current 'financialised food regime'. The latter began in the 1980s but gained momentum after 1996 when the South African state deregulated the economy, following the orthodox neoliberal recommendations of the World Bank and International Monetary Fund. I show how the state-managerial food regime fostered particular configurations of power between the state, labour, commercial producers, agribusiness and agro-processing corporates, and set the scene for the way in which these power relations have shifted under the financialised food regime.

In Chapter 5, I offer an account of the corporate concentration and oligopolistic power in different nodes of the wheat-to-bread commodity chain. I look into the case of the bread cartel, which consists of four baking and milling giants who dominate the market, and their mobilisation of oligopolistic power to artificially increase the price of bread and manipulate the supply of bread to distributors. The class action response to this anti-competitive behaviour saw consumer organisations and labour coming together to leverage institutional power in order to claim damages for the bread price-fixing. The limitations of this institutional power are addressed in relation to the

broader structure of the South African economy. I then look at the market power of agro-chemical and agro-tech TNCs, and the way in which their product innovations are furthering capital accumulation and corporate dominance in the agricultural node of the commodity chain. As a result wheat farming is becoming increasingly capital intensive and mechanised.

In Chapter 6, I demonstrate the specific ways in which milling and baking bread giants have mobilised different forms of market and associational power to assert their interests, and related to this, the shrinking and consolidation of the wheat industry, and the crisis in wheat seed breeding in South Africa. I then focus on wheat derivatives trading (trading capital) in relation to the transport differential, commercial producers, millers and agribusiness; and wheat price volatility. Last I reflect on the construction of a broader corporate business culture in farming that has developed alongside the increased involvement of corporate and finance capital in agriculture nodes.

In Chapter 7, my concluding chapter, I revisit the importance of this research topic and explain the significance of the findings of this research. Further, I reflect on the theoretical framework which has been developed for this study, and its value for researching power relations in a global economy.

CHAPTER 2

Power in global capitalism: conceptualising power in the wheat-to-bread commodity chain

Introduction

'Power' is one of the most important concepts underpinning our varied explanations on what we observe in the social world and how we perceive social change. Not surprisingly, then, it is also one of the most contested concepts in social theory. Central to sociological enquiry are questions on the nature, distribution and mechanisms of power and its relation to resource inequality (Thye and Kalkhoff 2014). In this chapter I develop a theoretical approach and framework for exploring the nature and effects of hierarchies and imbalances of power in the production, distribution and consumption of bread in South Africa. This approach takes into account the contextually specific social, economic and political conditions under which bread is produced and consumed.

I define social power as the capacity for actors in enduring interdependent relationships, enabled by their resources, to influence the behaviour and decision-making of other actors through reward, punishment and/or the perception of the potential thereof. Not only does this definition account for class struggle/conflict, but also the endurance of ongoing materially interdependent relations and the reproduction of the capitalist system. Drawing on a Marxian understanding of power as a social relation, I develop a power resources framework that incorporates workers, economic actors and consumers as social agents. Using the work of Schmalz et al. (2018) on the power resources of workers as a starting point, I develop different types of power resources for each of the

aforementioned actors. To this, I add a conceptual framework for analysing market power resources for understanding capital-to-capital competition and exchange.

One challenge with researching the process of industrial organisation is the increasingly complex territorial spread of production, distribution and consumption. The most useful heuristic tools for this task are global chain/network frameworks. These frameworks enable scholars to map global and local linkages between different nodes of production and between the different actors involved in the chain/network. Within the range of chain/network approaches, the world-systems (WS) approach to global commodity chains (GCCs) offers the most theoretical depth for explaining the dynamics of capitalist development and the ways in which these dynamics link to patterns and processes of global inequality with power asymmetries in global production (Phillips 2017; Selwyn 2014).

However, what remains underdeveloped in the WS approach to GCCs is a concrete conceptualisation and operationalisation of power, and the considerable analytical inclusion of households and finance actors. To remedy this, I combine a power resources approach using an intentional mode of explanation and a broadened range of actors, with a WS theoretical approach to GCCs. I argue that this theoretical approach offers the most explanatory value for this study on power relations in the wheat-to-bread commodity chain.

Approaches to conceptualising power

In this section I offer a brief overview of some of the different ways in which power has been conceptualised in social sciences literatures. Rather than attempting to address the full range of power theories in the social sciences, I have opted to focus more deeply on the three dimensions of power (Lukes and Korpi), Gramscian influences, Marxian conceptions, and the power resources approach (PRA) in labour studies, all of which are most relevant to an exploration of power relations in the wheat-to-bread commodity chain.

One of the most frequently quoted definitions of power in social sciences literature is a statement attributed to Weber (1947:152) in which power is defined as 'the probability that one actor within a social relationship will be in a position to carry out his own will despite resistance'. This statement is a poor translation of Weber's (1922) *Wirtschaft und Gesellschaft* since in Weber's original definition of power, the exercise of power is not necessarily linked to manifest conflict and resistance (Korpi 1985:42). Nonetheless, since its widespread use among pluralists in the 1950s, this definition is frequently used as a Weberian understanding of power.

The pluralist view of power, associated with Dahl (1957), focuses on a conflictual and agentic analysis of power drawn from the Weberian (mis)translation above. For Dahl (1957:202) 'A has power over B to the extent that he can get B to do something that B would not otherwise do'. As a key characteristic it was argued that the study of power should focus on the *exercise of power* and its resultant consequences (Polsby 1980). Consequently, the focus of pluralist research on power tends to be on the observable process of decision-making around key issues that result in overt conflict between actors with differing subjective interests. This view of power, labelled by Lukes (1974) as a

'one-dimensional' conceptualisation of power, has been critiqued for focusing narrowly on concrete decision-making and manifest conflict.

In seeking to broaden the pluralist view of power, Bachrach and Baratz (1962) added 'non-issues' and 'non-decision-making' in order to account for policy preferences, grievances and control over the political agenda which may take place before decision-making. In this approach, sometimes referred to as a 'neoelitist' approach to power analysis, proponents remain focused on conflicts and concrete decisions through the exercise of power, but also include behaviour that is less easily observable (Korpi 1985). Lukes (1974), who labelled this the 'two-dimensional' conceptualisation of power, argued that this approach missed two important aspects of power. The first is that inaction, for example grievances which are not raised, can also result from the exercise of power but would not be accounted for by the two-dimensional approach to power analysis. The second is that the way in which grievances are shaped through cultural influences and group behaviour. This may not be reflected directly in concrete decision-making, but is, nonetheless, an important dimension of power.

Lukes' (1974) critique of this narrow focus on power draws attention to what he terms a 'third dimension' of power. To the explanations of what constitutes power, Lukes (1974:24) adds 'latent conflict', in which conflicts of interest between actors are taken into account in ways that do not necessarily result in observable overt conflict or decision-making. Here Lukes (1974:39) argues that inaction as much as action can result in outcomes, and therefore 'non-decisions' and 'non-issues' are also important for the study of power.

In this vein, Lukes (1974) developed a 'three-dimensional' approach to power which incorporates latent as well as overt or covert manifest conflict, and takes into consideration subjective and real interests. The third dimension of power, building on Antonio Gramsci's (1971) concept of hegemonic ideology, operates through a process of legitimation in civil society in which consent to dominant ideas is secured and the status quo comes to be seen as the natural order. For Lukes the third dimension is underlying ideological process through which preferences are shaped and grievances subdued in line with the status quo.

Conceptually Lukes' (1974) approach advances the study of power in ways that can move analysis beyond only recognising manifest conflict and decision-making, as well as recognising exchange and exploitation. This contribution aligns with the underpinnings of a power resources approach in which the exercise of power is conceptualised in terms of interactions between actors that involve rewards and/or pressure resources, which can result in outcomes of conflict, exploitation or exchange (Korpi 1985).

However, inasmuch as Lukes (1974) builds on the types of interactions in power relations, he too relies on a causal mode of explanation for the study of power by focusing on the exercise of power, similar to the pluralists and neo-elitists whom he critiques (Korpi 1985). In other words, Lukes' (1974) important third dimension of power involving inaction and non-decision making is incongruent with his ontological assumption about where power should be observed and analysed.

In this regard, Walter Korpi's (1985) account on the different approaches to researching power offers conceptual clarity which is often lacking in some of the more contemporary scholarship on power. This clarity emerges from Korpi's (1985:31) distinction between a 'causal mode of

explanation' and an 'intentional mode of explanation' in the analysis of power. The former is characteristic of work by pluralists, neo-elitists and three-dimensional scholars, while the latter is characteristic of work by scholars using a power resources approach. A 'causal mode of explanation' is underpinned by the claim that for scholars analysing power, the focus should be on the *exercise of power*. Consequently research on power in this broader 'behavioural' tradition tends to focus on observable behaviour which is rendered visible through decision-making and manifest conflict (Korpi 1985).

Power resource scholars using an intentional mode of explanation for the study of power concur that the exercise of power, non-decisions and inaction, and the outcomes thereof, are all important for studying power. However, for power resource scholars, it is the *bases of power,* rather than its exercise, that should be the focus of research and analysis on power. Here *power resources,* as the bases of power, are defined as 'the attributes (capacities or means) of actors (individuals or collectives), which enable them to reward or punish other actors' (Korpi 1985:33).

The interaction that can result from the use (or potential use) of power resources is illustrated in Diagram 1 below in which actor A and actor B can mobilise their respective power resources in order to reward or pressure one another, resulting in different potential outcomes including exchange, exploitation and conflict. Rather than focusing solely on manifest conflict, an intentional mode of explanation is the approach best equipped to explain outcomes of the exercise of power relations which are equally beneficial, such as forms of exchange between economic actors (albeit often asymmetrically weighted in benefits).

Diagram 1: Interaction resulting from the use of power resources

		Type of power resource used by B	
		Reward	**Pressure**
Type of power resource used by A	**Reward**	Exchange	Exploitation
	Pressure	Exploitation	Conflict

Source: Korpi (1985:35)

The intentional mode is able to account for certain forms of non-action, since the mere existence of a power resource belonging to one actor, even if not mobilised, could result in outcomes/behaviours among other actors who are aware of the *potential* for mobilisation of that power resource. For example, Korpi (1985:35) notes: 'where the difference in power resources between two independent actors is great, the weaker actor is unlikely to exercise pressure resources… rather non-decision making or exploitation are likely to occur', and the likelihood of manifest conflict is less probable. He continues, 'the absence of manifest conflict in a decision-making process cannot be taken as sufficient proof that all the concerned parties have equal influence on it' (Ibid:42). Should scholars focus on the exercise of power alone, rather than power resources, they would likely overlook and/or be unable to explain outcomes that do not require the direct exercise of power as a mobilisation of a power resource.

Central to the power resources approach is the argument that rational intentional actors control power resources and make strategic immediate and long-term decisions about whether or not to mobilise these power resources (Korpi 1985). The strategies of actors are based on their interests and goals and how best they believe they can achieve these goals in order to assert their interests. In

turn, this depends on their beliefs about what means are available to them, and their expectations about the plausibility and outcome of the mobilisation or non-mobilisation of a power resource (the exercise of power), which is also determined in relation to how they perceive the expectations and beliefs of the other interdependent actor/s in this power relation (Korpi 1985). Lastly, the beliefs and expectations that an actor holds are informed by their 'perceptions of the distribution of power resources' (Ibid.:35).

The focus on intentional actors who control power resources and make strategic decisions in relation to other interdependent actors highlights both the agentic and the structural nature of power relations. In line with the complex and contradictory nature of the economic system, the power resource approach also recognises that the mobilisation of power resources can result in unintended consequences that are sometimes contradictory to those of the actor who mobilised a power resource. For example, in this study, the mobilisation of specific associational and market power resources by wheat millers in order to secure new sources of supply and appropriate more value within the commodity chain has contributed to the unintended consequence of a weakening and shrinking domestic wheat seed industry, which could in turn work against the interests of millers (see Chapter 6).

Building on Korpi's (1985) work, the main scholarly field where the PRA has been most extensively developed is in labour studies literature which offers an analysis of the way in which the mobilisation of labours' power resources in specific contexts can further the interests of workers (see Wright 2006; Chun 2009; Webster 2015; Schmalz et al. 2018). The labour studies PRA has provided important insights into areas where organised labour could leverage power resources, many of which have translated into practical actionable strategies for trade unions. In my typology of power

resources (see below) I draw on four useful categories of power resources which have been developed by labour studies PRA scholars.

First, however, four main weaknesses/limitations of the labour studies PRA for studying power relations in the wheat-to-bread commodity chain need to be highlighted and addressed: (1) The tendency for labour studies PRA scholars to adopt a causal/behavioural mode of explanation for understanding and studying power, which results in scholars overlooking the third dimension of power. (2) The conflation of worker power and class power, which leads to the assumption that all union activities and outcomes are in the interests of the working class. (3) The under-theorisation of the power resources of consumers and related to this, the neglect of household sphere. Consequently the power of consumers and gendered social reproduction, both important spaces for potential resistance and the space where consumers and workers live, tend to be neglected. (4) The under-theorisation of the power resources of economic actors, which can in turn limit the understanding of the position of workers, and of the importance of power relations between different capital actors for understanding overall power relations in the GCC. Each of these weaknesses is discussed and addressed below.

Due to its 'Weberian' underpinnings for conceptualising power the labour studies PRA tends to adopt an ontological focus on the exercise of power, often spoken of as the 'mobilisation of power resources' (Schmalz et al. 2018:113). As discussed above, the focus on the exercise of power as resulting in manifest conflict and decision-making between actors with divergent interests limits the analytical purchase of this approach for observing and understanding the impact that inaction and non-decision-making by actors can have on power relations. This ontological oversight of the third dimension of power tends to result in an analysis of any form of resistance as necessarily a step

towards social transformation, limiting the scope for considering the ways in which power is not only at the heart of class struggle, but also at the heart of the reproduction of the capitalist order. This further explains the labour studies PRA neglect of an analysis of the power resources of economic actors. Equally beneficial outcomes (albeit asymmetrical), such as exchange between economic actors, cannot be explained under this limited construct and operationalisation of power (elaborated below).

In order to address this weakness, I suggest that rather than using a Weberian understanding of social power as 'A getting B to do something B would otherwise not do', a more useful definition of social power is 'the capacities to act possessed by social agents in virtue of the enduring relations in which they participate' (Isaac 1987:22,96). In other words, 'social relations of power typically involve A and B doing what they ordinarily do' (Ibid.:96). While capital and labour are inherently in conflict with one another, they are simultaneously materially interdependent on one another. This Marxian approach to power is a useful basis for developing the power resources approach for advancing our understanding of the enduring dynamics of global capitalism, which include not only manifest conflict, but also the persistence of exploitation and exchange (Isaac 1987:96).

A second weakness of the labour studies PRA is the tendency to conflate the mobilisation of power resources by organised labour with the successful defense of workers' interests (Gallas 2018). Gallas (2018:200) argues that 'the activities of unions are only instances of the exercise of *working class* power if they defend, consolidate or improve the position of the working class'. Indeed in some cases, the mobilisation of power resources by unions can deepen the divide between different categories of workers rather than contribute to working class formation.

To remedy this conflation, a distinction needs to be made between the mobilisation of power resources by an actor, and the exercise of *class power* that has the ability to shift class relations in favour of capital or labour in the process of class formation. Gallas (2018:201) refers to labour movements and business circles as collective actors that could 'act on behalf of a class' provided their actions are in line with the broader interests of their class. Within the analysis of a commodity chain, actors can be individual or collective, and within categories of actors, for example competitor firms or different groups of workers, there can be competing interests. For this reason, I refer to actors as workers, economic actors and consumers rather than generic class categories. However, as Gallas (2016, 2018) suggests, class power could be exercised in cases where a collective actor (for example a labour union or a business union) is acting in the interests of their class.

The third weakness is the relatively narrow focus of the labour studies PRA on worker power. The traditional purview of a class-relational approach is on the inherently contested relationship between capital and labour in which both are considered a central part of production, and both of which have material consequences. Yet consumers can also be considered a functional part of production. Consumers can leverage power resources that have material consequences for workers and economic actors.

A narrow focus on worker power can underplay the broader institutional and structural contexts within which workers operate, and can miss other important spaces of legitimation and/or resistance. As Bieler (2018:244) argues, 'there is a danger that an exclusive focus on the workplace and the role of trade unions overlooks ongoing contestation, especially in the sphere of social reproduction against, for example, the privatisation of health services and education.' The weakening of traditional sources of labour power contributes further to this fundamental question: where, in

the context of high unemployment, labour displacement and weak unionisation, will new forms of organisation and resistance emerge?

Silver (2003:3) outlines the two positions of this ongoing debate in labour studies:

> *'Those who see terminal crisis of labour movements tend to see the contemporary era as one that is fundamentally new and unprecedented, in which global economic processes have completely reshaped the working class and terrain upon which labour movement must operate. In contrast those who expect the re-emergence of significant labour movements tend to perceive historical capitalism itself as being characterised by recurrent dynamics including the continual recreation of contradictions and conflict between capital and labour.'*

Within this debate are scholars who argue that the starting point for studying labour agency, and resistance more broadly, should be in the sphere of social reproduction (Carswell and De Neve 2013:64; Burawoy 2013). Friedmann (1993:55) argues that while there are common interests, the dual role of workers as producers and workers as consumers introduces contradictions as 'many are forced to withdraw from commodity relations into self-provisioning and informal networks'. Thus culturally embedded livelihood strategies and social relations are crucial for understanding both worker and consumer agency. Burawoy (2013:37) takes the position that resistance is no longer 'based on production but rather on the market as the most salient experience of today'. He elaborates further:

> *'I do, indeed, break with conventional Marxist claim that production provides the foundation of opposition to capitalism. This is no longer tenable: in part because production is the locus of the organisation of consent to*

> *capitalism, and in part because in the face of global production of surplus labour populations, exploitation is rapidly becoming a sought after privilege of the few. Exploitation continues to figure centrally in the dynamics of accumulation, but not in the experience of subjugated populations.'* (Burawoy 2013:37).

However, the sphere of production where exploitation is experienced, and the sphere of social reproduction where the market is experienced through consumption are integrally linked, both structurally and qualitatively. Scully (2016) shows how households consisting of both the unemployed and the employed have shared interests closer to each other than what Burawoy (2013) presupposes. This position is further demonstrated by Alexander and Pfaffe (2014:14) who show that 'while there is social distance between workers and the poor, there is too much intermingling, family loyalty, life style fluidity and shared experience for it to be helpful to explain this distinction, or something proximate, through a theory of class separation - at least for now.' Drawing on Piven and Cloward (1979) who link the grievances and daily experiences of the poor to forms of protest that are conditioned by resource mobilisation, Alexander and Pfaffe's (2014) study on community and workplace protests demonstrates that these mobilisations serve to unite workers and the unemployed, rather than to generate class separation.

Similarly Thompson (1971:79) emphasised the common interests of both workers and consumers in which class-conflict can take 'expression in the matter of wages', just as much as working people can be 'quickly inflamed to action by rising (food) prices'. In Thompson's study, the food riots in the eighteenth century drew on the structural power of workers simultaneously with the mobilising power of consumers, and especially working class women.

In this case study, consumers are a central part of understanding the wheat-to-bread commodity chain, not only because of their involvement in the bread class action law suit alongside organised labour (see Chapter 5), but also because consumers are a fundamental linkage to the household and gender. Indeed the neglect of the level of the household at which consumption and social reproduction take place represents a gender-blindness in the literature which is explored further below in a discussion on the way in which households link into commodity chains.

The wheat-to-bread commodity chain offers a particularly pertinent example of this connection, since bread is a staple food for poor consumers, some of whom also occupy positions as workers in the chain. As with all commodities, bread is a product of social relations, but one with powerful symbolism that could be a potent mobilising force.

A further lacuna in the literature on labour studies PRA is the undertheorisation of the power resources of economic actors. Brookes (2018:254-5) notes that because power is inherently relational *'it is only meaningful to discuss workers' power with reference to the other actors they are attempting to influence. Most PRA scholars acknowledge this yet rarely go onto systematically theorise the power resources of those with whom workers are in conflict […] No theory of workers' power is complete without a full consideration of employers' interests, strategies, resources and vulnerabilities - and visa versa.'*

Further, a full understanding of power relations and options for resistance cannot always be gleaned through studying labour relations in one node of a commodity chain alone. An advantage of the chain/network approaches is that they are able to provide a framework, not only for studying power relations between workers and employers, but also for studying power relations between different economic actors within a chain of production. This is significant because the behaviours of different

economic actors in competition, collusion or cooperation with one another directly impacts on the power resources of different groups of workers whom are linked into different nodes of the chain. Similarly, the behaviour of workers impacts on different horizontally and vertically connected economic actors, which opens up the opportunity for more complex ways of strategising around asserting worker interests beyond one territorial space in one node of production or distribution.

Conceptual framework for a power resources approach

Based on the discussion above I define social power as the capacity for actors in enduring interdependent relationships, enabled by their resources, to influence the behaviour and decision-making of other actors through reward, punishment and/or the perception of the potential thereof. Not only can this definition account for class struggle/conflict, but also the endurance of ongoing materially interdependent relations and the reproduction of the capitalist system.

In this study on power in the wheat-to-bread commodity chain, actors are social agents (collective or individual) in the categories of workers, economic actors and consumers. Below I provide a simplified typology of categories of power resources for each of these actors, drawing on four useful categories of power resources: structural, associational, institutional and societal power resources (Schmalz et al. 2018). Typologies tend to present power resource as discrete and static categories. However, through empirical research, this study on power relations in the wheat-to-bread commodity chain demonstrates that in the real world these power resources continually change through processes of contestation and compromise, and overlap and intersect in a multiplicity of contextually specific ways. Nonetheless, this typology serves as a useful tool for mapping and

organising power resources and actors, which can then be applied to real world observations in order to identify these relational dynamics and processes.

Structural power resources

Structural power resources are the capacities or means of an actor as a result of their position in an economic system, that enable them to influence the behaviour and decision-making of other actors through reward, punishment and/or the perception of the potential thereof.

> **Structural power resources for workers** are the capacities or means that individual or collective workers derive based on their location within an economic system, that enable them to influence the behaviour and decision-making of other actors through reward, punishment and/or the perception of the potential thereof. Within structural power resources, Wright (2000) and Silver (2003) distinguish between workplace bargaining power and marketplace bargaining power. *Marketplace bargaining power resources* result from tight labour markets (characterised by low unemployment and often higher levels of skill) which enable workers to demand higher wages and better working conditions (Silver 2003). In labour markets characterised by high levels of unemployment, large informal sectors and low skill-level requirements, marketplace bargaining power resources tend to be negligible.
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> *Workplace bargaining power resources* are derived based on the 'strategic location of a particular group of workers within a key industrial sector', which enable workers to disrupt, or to threaten to disrupt, the process of production, services and/or distribution (Wright 2000:962). The mobilisation of these power resources can take the form of strikes, protests,

go-slows in order to pressure capital actors to meet certain workplace demands such as increasing wages or improved working conditions (Schmalz et al. 2018).

Structural power resources for economic actors are the capacities or means that economic actors derive based on their location within an economic system, that enable them to influence the behaviour and decision-making of other actors through reward, punishment and/or the perception of the potential thereof. In relation to workers, the structural power resources of economic actors results from their position as owners of the means of production, and their control over the process of production, service provision and distribution (place, labour and its organisation). In the labour market, economic actors can leverage their structural power resources in situations where immigrant, gender, informal sector and other conditions exist and can make use of processes of casualisation and outsourcing, relocation and restructuring the process of production (Phillips 2017).

Structural power resources for consumers are the capacities or means that consumers (collective or individual) derive based on their location within an economic system, that enable them to influence the behaviour and decision-making of other actors through reward, punishment and/or the perception of the potential thereof. For consumers structural power resides in their position as buyers of goods and services. This form of power rests on their purchasing power. Often operating in conjunction with societal discursive and other forms of power, this can be leveraged in instances of, such as consumer boycotts.

Associational power resources

Associational power resources are the capacities or means of an actor as a result of their collective, political and associational organisation that enable them to influence the behaviour and decision-making of other actors through reward, punishment and/or the perception of the potential thereof. Associational power resources often act to strengthen other forms of power (Schmalz et al. 2018).

Associational power resources for workers is 'the various forms of power that result from the formation of collective organisations of workers' (Wright 2000:962). For organised labour, associational power resides in worker parties, trade union associations, shop stewards, workplace councils. These resources require organisation and articulation.

Associational power resources for economic actors include business and industry associations that represent the interests of a group/sector/category/industry/business as a whole. Since the interests of economic actors are heterogenous and are often competitive, the stances of different industry associations or business unions may diverge.

Associational power resources for consumers are the forms of power that result from the formation of collective organisations such as consumer watchdogs. These organisations often play a role in monitoring health and safety standards, or monitoring compliance with consumer rights. The lack of measurable consumer membership to these organisations means that in the legal space these organisations tend to have weak institutional leverage (see Chapter 5).

Institutional power resources

Institutional power resources are the capacities or means of an actor as a result of their ability to leverage off the state and global regulatory bodies in a way that enables them to influence the behaviour and decision-making of other actors through reward, punishment and/or the perception of the potential thereof.

Rather than conceptualising of the state (and other regulatory institutions) as a social actor, I take the Poulantzian view that the state 'has no power on its own; rather it can be seen as a field and facilitator of class strategies' (Gallas 2018:208). Jessop (2010:21) warns against the analytical neglect of the role and nature of the state and of the potential for the forces of globalisation to constrain political and corporate actors[10]. The importance of the state is further highlighted by McIlroy (2011) who argues that neoliberalism does not have uniform effects. Rather, varieties of neoliberalism are determined through historical difference and political decisions, and not through economic determinism. Contrary to the widespread generalisation that nation-states are 'weak' in the neoliberal era, states are involved in actively creating the enabling conditions under which various actors can operate in global markets (Neilson et al. 2014). As Levy (2008:958) explains; 'The market is not necessarily more 'free' under the new mode of governance, but rather operates under a different matrix of forces and constraints'.

[10] To take corporate actors as an example, Bryan and Rafferty (2006:8) point out that although it is true that select corporates are now presented with opportunities for maximising profit in the global economy, this does not mean they are left unbridled. There are a number of constraining factors which include the notable risk of doing business in an unstable global financial and political system (risks include unpredictable political contexts and fluctuating interest and exchange rates).

Institutional power resources for workers are the capacities or means of workers (collective or individual) to leverage off the state and global regulatory bodies in a way that enables them to influence the behaviour and decision-making of other actors. This can include representation at a tripartite alliance and influence over labour laws.

Institutional power resources for economic actors can also be leveraged through tripartite alliance and a legalistic route to business rights. Lobbying for tax cuts and leniency (sometimes through the threat to relocate or retrench) and improved IPR enforcement lobbying are examples of leveraging institutional power resources, linked to structural and market power resources (Woll 2007).

Institutional power resources for consumers can include mobilisation around food and safety issues and class action law suits against anticompetitive behaviour that resulted in grievances towards consumers. Consumer boycotts can also seek to appeal to the state.

Societal power resources

Societal power resources are the capacities or means of an actor as a result of their ability to build coalitions organised around shared interests and to shape public discourse in ways that enable them to influence the behaviour and decision-making of other actors through reward, punishment and/or the perception of the potential thereof. Similar to Jennifer Chun's (2009) concept of *symbolic power*, societal power resources can be mobilised to appeal to public consciousness through moral and cultural claims.

There are two types of societal power resources: *coalitional power resources* and *discursive power resources* (Schmalz et al. 2018). Coalitional power resources are the result of actors working in networks or coalitions towards common goals in order to influence the behaviour of other interrelated actors. Discursive power resources are the result of actors actively shaping public discourse by building symbolic legitimation that aligns with the interests of that actor. Conceptually the *exercise* of discursive power is diffuse and in constant flux, not dissimilar from Bourdieu's concept of habitus and Foucauldian understandings of discourse in relation to knowledge and power. However, an intentional mode of explanation for studying the *bases* of discursive power aligns more with a Gramscian understanding of hegemony and consent. This ontological approach requires the identification of specific actors with interests, resources, goals, beliefs and subsequent actions whose power resources enable them to shape hegemonic or counterhegemonic ideology.

Societal power resources for workers can include coalitions with consumers (for example the class action law suit against the bread cartel in South Africa), and forms of social movement unionism which can build broader legitimacy among civil society for worker struggles. Attempts to influence the public discourse through media is another way in which workers can leverage discursive power resources.

Societal power resources for economic actors can include coalitions with NGOs and global regulatory institutions. In this case study economic actors are able to influence the discourse around agtech and agricultural chemicals through the media and other avenues of knowledge dissemination in which they strategically link their interests as capital actors to the broader societal goal of ecological sustainability (see Chapter 5). Branding and advertising is also a form of societal power which linked to consumers' cultures, needs, values and fears,

and which has the overarching effect of legitimising over-consumption (Wainwright 2014). Corporate Social Responsibility (CSI) projects are often designed to align with branding strategies and are also a form of societal power (see for example Fooks et al. 2011).

Societal power resources for consumers can link to coalitions with workers, such as boycotts that draw on consumer's structural purchasing power resources. Consumers can also organise around moral/symbolic appeals which can influence economic actors to take 'fair trade', ethical and environmental issues more seriously (although, as mentioned above, these corporates often use these discourses to their advantage by mobilising their societal power resources to build legitimacy while also furthering their interests).

Market power for economic actors

Bieler (2018:245) outlines three structuring conditions of capitalism that need to be taken into account in examining class agency, power relations and resistance. First, it is not only workers who are in competition with one another, but 'equally companies are in constant competition with each other over market share. Hence, there is an emphasis on competitiveness and the related pressure for further technological innovation in a relentless struggle for ever higher profit levels' (Ibid.). The second structuring condition is the crisis tendency of capitalism towards over accumulation in which there is a 'situation of surplus of both capital and labour' in which technological advancement replaces workers, resulting in fewer consumers and a surplus of capital goods' (Ibid.). The third is the 'structuring condition of constant outward expansion by capitalism, either in order to capture new markets of cheaper labour abroad or to re-commodify areas which had been moved outside the capitalist market' (Ibid.:245).

These structuring conditions mean that in studying power relations in commodity chains, the power relations in the competition between companies and in strategies to seek new markets of labour or areas for recommodification are important for us to understand. In this regard, market power is an important component of this theoretical framework. Market power refers to control over production, capture of value and oligopolistic power (Phillips 2017).

In relation to other economic actors that are vertically or horizontally linked within chains of production, the market power resources of an economic actor can be leveraged through oligopolistic/monopolistic power based on position in a GCC. Additionally organisational rents and management strategies, while greatly affecting labour, also involve a power relation between economic actors who are either competing, colluding, or in an asymmetrical supplier-producer relationship.

An analysis of rents is useful for unpacking further the power asymmetries and exchanges between different firms in GCCs. When developed further (see below), market power can be conceptualised in a way that demonstrates its links with the capabilities of capital actors to generate and appropriate rents. While internal actors generate, maintain and appropriate rents via different forms of chain governance, external actors are able to, through regulation and other forms of pressure, influence the capacity of the internal chain actors to generate and appropriate rents' (Davis et al. 2018:50).

Davis et al. (2018) distinguish between four different sources of rents for economic actors:

Resource rents: These rents emerge from "'gifts of nature," in which a producer has access to relatively better land or resource deposits than a rival, and where the price of the resource is set by the costs of production of the less well-endowed producer' (Ibid.:47).

Innovation rents: These are endogenous rents 'created by producers, increasingly through the systematic application of knowledge to production' (Ibid.:47). For example, higher quality products, an extended range of products, or improved production processes.

Exogenous rents: This relates to environmental factors that improve a producers' capability to generate and appropriate rents, for example, access to better infrastructure, a better-trained workforce or a stronger IPR regime.

Market rents: These rents emerge from 'exclusive or near-exclusive control over input and product markets' (Ibid.:47).

As Roy (2017:46) argues, firms in developing countries battle to 'derive any rent out of exclusive access to such [cheap] labour'. On the other hand, firms in the global north and monopolies in the global south are able to extract rents based on technological and knowledge advancement which is protected by IPRs and monopoly power. This has important consequences for the power of smaller economic actors, workers and consumers (especially in the developing south).

Power relations in global chain/network approaches

A key feature of industrial organisation in the neoliberal economy is the territorial spread of production, distribution and consumption on an increasingly global scale. The geographic fragmentation of different nodes of production from raw materials to the end product has been described as a 'global commodity chain' (GCC). While GCCs have been around since the beginning of early capitalism in the sixteenth century, it was not until the 1970s that they began to expand territorially due to changes in trade policy, tariff protection, logistical and technological advances and new divisions of labour (Wallerstein 2000; Davis et al. 2018).

One in five jobs worldwide are now linked to a GCC and eighty per cent of international trade, which involves not only final goods, but also components in the process of production, is controlled by transnational corporations (TNCs) (Phillips 2017:431). This raises important questions about the power and territorial nature of the corporation and the state (Davis et al. 2018). The nature of regulation, ownership and accountability is increasingly complex, and the global division of labour has provided both challenges and opportunities for labour and consumer organisation.

One of the ways in which contemporary scholars have analysed these processes is through the lens of global chain/network analyses. The concept of a 'commodity chain' was coined by sociologists Terence Hopkins and Immanuel Wallerstein. In their seminal article, Hopkins and Wallerstein (1977) built on their influential framework of a historically-embedded world system that is segmented into core, semi-peripheral and peripheral countries which reflect the uneven nature of economic globalisation, taking into account integral political and cultural forces. The authors sought to remedy the challenges presented by attempting empirical research into this world system, by

proposing an exploration of the dynamics of the global economy through global linkages to locally-embedded production processes and the reproduction of labour forces central to this production (Hopkins and Wallerstein 1977:128). They termed the interlinked steps of production from raw materials to a final consumable item, and their constituent social relations, a 'commodity chain'.

It is this concept, alongside influences from Michael Porter (1985) writing on supply chains from a business management perspective, which formed the foundational basis for the Global Commodity Chains (GCC) approach in the early 1990s. Gary Gereffi (1994), Miguel Korzeniewicz and authors in the edited book, *Commodity Chains and Global Capitalism* (1994) provided the initial groundwork for the study of GCCs. Over the last two decades there has been a proliferation of social sciences literature using production chains/networks to analyse the contemporary dynamics of global capitalism over the last two decades, primarily through Global Commodity Chains (GCC) and their successive Global Value Chains (GVC) and Global Production Networks (GPN) variations.

Broadly, GCC/GVC/GPN proponents aim to explain dimensions of the global capitalist system and its uneven local manifestations by mapping and studying the interlinkages and relations between nodes and actors in global chains of production. This mapping framework enables scholars to bridge micro, meso and macro levels of analysis, advancing the study of the complex dynamics and processes of contemporary globalisation which have been so inadequately captured by Ricardian-inspired international trade theories. [11]

[11] These classical trade theories maintain that, despite the national and international institutional context and the complex geographies of production and economic flow, international trade can be understood through the basic competitive advantages of particular countries or regions and the reactions of independent actors to market signals (Derruder and Witlox 2010).

One the central critiques of production chain/network literatures is that chain and network frameworks mapping production have been analysed in so many diverse ways that theoretically unified and distinct GCC/GVC/GPN literatures are difficult to discern. This calls into question whether, rather than attempting to provide coherent theoretical frameworks, the chain/network metaphor should remain an exploratory methodological device onto which scholars from different traditions could then attach their wider analytical and theoretical preferences for explaining the dynamics of the global economy (Gibbon et al. 2008; Nielson et al. 2014).

Nevertheless, several scholars have successfully identified distinct conceptual and analytical differences between the GCC/GVC/GPN approaches which enable us to differentiate between them as separate – but related – coherent theoretical frameworks (Bair 2005, 2008; Levy 2008; Gibbon et al. 2008). I focus on the differences between the three paradigms in their approaches to conceptualising, studying and analysing power and power relations in chains or networks of production. Rather than attempting to make sense of the entire theoretically-divergent array of studies that have used these GCC/GVC/GPN constructs, I draw the distinctions below from the definitions of power that initially informed and subsequently dominate and typify studies within these paradigms.

It is the respective conceptualisations of and approaches to studying power and power relations that enables us to distinguish the three paradigms (GCC/GVC/GPN) from one another. While the employment of these paradigms by scholars in economic sociology, economic geography and development studies has resulted in a wide range of valuable empirically-detailed case studies, they are, with notable exceptions, underpinned by theoretically-impoverished or scattered constructs of power. The diversity within the literature means that not all studies using these chain/network

constructs necessarily define and study power relations in their respective case studies in the same ways that I discuss below. In other words, a large number of studies that make use of GCC/GVC/GPN constructs, but whose approach to studying power relations in chains/networks does not necessarily fit the paradigm of the construct they are using.

The degree to which these constructs are used interchangeably by many scholars points towards both the general muddying of chains/network literatures, despite their significantly different understandings of power relations, as well as towards their use by some scholars as heuristic frameworks rather than theories. However, in some cases, it also serves to highlight the extent to which scholars fall short of critically examining the assumptions about the nature of power that underlie their discussants' constructs, and tend to take for granted the degree to which their own understanding of the nature of power ultimately lies at the heart of where they locate and how they interpret social change.

GCCs and GVCs: Power as inter-firm governance and coordination

Although the GCC approach has been influenced by the world-systems research agenda of utilising commodity chains to explore global production and divisions of labour, it departs significantly from the initial world-systems vision. At the heart of this departure are the divergent ways in which world-systems and GCC (and GVC) scholars view development. While WS scholars argue that the economic development of all nations in an unequal global economy as improbable (discussed below), GCC/GVC scholars argue that development is achievable for all nation-states, and that it is through inclusion into the global economy that this is possible. Indeed the key hypothesis that underlies the GCC/GVC paradigm is that in order for developing countries to develop, they need to

link up with 'lead' firms in their global industry which are usually based in developed countries (Bair 2005). Thus the central focus of GCC/GVC research is on understanding the global organisational structure of networks of production in particular industries which link firms in different parts of the world. Gereffi (1994:96-97) outlines the three main dimensions of GCCs in relation to production:

> *'(1) an input-output structure (i.e., a set of products and services linked together in a sequence of value adding economic activities);*
>
> *(2) a territoriality (i.e., spatial dispersion or concentration of production and distribution networks, comprised of enterprises of different sizes and types);*
>
> *(3) a governance structure (i.e., authority and power relationships that determine how financial, material, and human resources are allocated and flow within a chain).'*

It is Gereffi's third dimension, the governance structure, where proponents of GCCs locate relations of power. In elaborating on this governance structure, Gereffi (1994) makes the useful distinction between *buyer-driven* and *producer-driven* commodity chains. Buyer-driven commodity chains usually involve large corporates in developed countries which are connected to suppliers in developed countries, for example large TNCs in retail. Producer-driven commodity chains, on the other hand, exist in industries where large, integrated industrial enterprises play a central role in governing the chain, for example the manufacture of electronics. Gibbon et al. (2008) refer to this conceptual approach as 'governance as driving'.

This 'governance as driving' approach is understood in terms of asymmetrical relations of power between interlinked firms which GCC proponents propose result from the governance strategies of specific firms. This presents us with *market power* as the main form of power under examination.

Although GCC proponents occasionally draw on the political dimension of market power, their approach to conceptualising power relations remains economistic and they explicitly exclude wider institutional and social governance structures and power relations in favour of a more parsimonious framework (Bair 2008; Levy 2008).

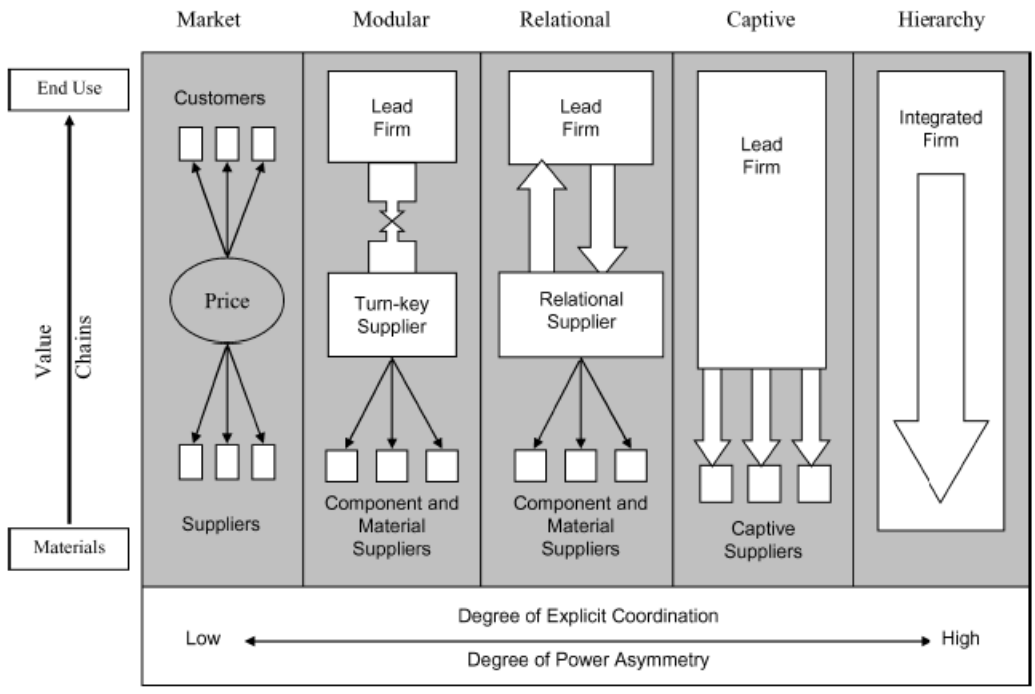
Linking to the even more lean GVC approach, Sturgeon et al. (2008:22) justify this conceptual frugality by explaining that 'scalable conceptual tools that can help researchers and policymakers move easily from the local to global levels of analysis demand some degree of parsimony'. The GCC paradigm has contributed a large body of literature on globally-organised industries, including automobiles, apparel, agriculture and electronics, which has methodologically traced the path of commodities through their chains of production and shed light on inter-firm relations of power within these chains. As with their GVC counterpart discussed below, these contributions have also gained significant traction with policy-makers.

The GVC paradigm takes as its theoretical foundation the GCC approach and international business literature, specifically transaction-cost economics, technological capability and firm-level learning (Bair 2005; Gereffi, Humphrey and Sturgeon 2005; Kaplinsky ad Morris 2012). Similar to the GCC approach, its proponents situate relations of (market) power in inter-firm governance. However their approach to studying these inter-firm relations of power is more micro-oriented and economistic than their GCC counterparts. Proponents of the GVC paradigm focus on 'value added chains' that are characterised by specific forms of governance structures which highlight the economic coordination between different firm-level actors alongside the potential for firms to 'upgrade' (Gereffi et al. 2005:79). Industrial or economic 'upgrading' is the ability of firms (usually supplier firms) to advance their position within the value chain relative to other firms in order to 'create'

more value. Following the GCC hypothesis, this upgrading is said to contribute to development in developing countries where the newly 'upgraded' firms are located.

Gereffi et al. (2005:78-85) conceptualise value chain governance in terms of the complexity of transactions (information and knowledge on product and processes); the ability to codify these transactions; and the capabilities of supplier firms to upgrade. From this, they develop a framework for five types of GVC governance: hierarchy; captive; relational; modular and market governance, which range from high to low levels of coordination and power asymmetries (Gereffi et al. 2005:83-85; Gereffi 2014). These governance structures are illustrated in Diagram 2 below.

Diagram 2: Five GVC Governance Types



Source: Gereffi et al. 2005:89

Gibbon et al. (2008) term this 'governance as coordination' which contains an even narrower conceptualisation of power than the GCC paradigm of 'governance as driving'. In the GVC paradigm, market power is directly and causally linked to economic coordination, with high levels of explicit coordination hypothetically leading to high levels of power asymmetry as is illustrated in Diagram 2. Consequently, because of the GVC micro-focus on economic upgrading and coordination, proponents' notion of power tends to be non-relational and based on a transaction-cost economics perspective which is limited to assessing the extent to which particular firms in the chain are able to extract economic rents.

Adherents to the GCC and GVC paradigms tend to conceptualise and study power in chains of production by examining inter-firm governance, economic coordination and upgrading as core processes that are able to bring about change in these GVCs/GCCs and, by extension, in broader processes of capitalist development and transformation. Although understanding asymmetries in market power through inter-firm governance and upgrading is useful for the study of the dynamics of the global capitalist economy, the implication of not going beyond the level of the firm to conceptualise and analyse its underlying and embedded social relations and broader institutional contexts is that, at their core, these paradigms neglect societal and institutional forms of power. This results in insular economistic explanations of the dynamics of global capitalism.

Selwyn (2014) argues that the GCC/GVC paradigms' thin conceptualisation of power rests on their Schumpeterian-inspired understanding of bourgeois 'innovation' which stem from their business management and transaction-cost economics influences. Joseph Schumpeter, an American-Austrian economist writing in the 1940s, drew heavily but selectively from Karl Marx's perspective of

capitalist innovation as 'creative destruction' (see below). Schumpeter's version of 'creative destruction' is quoted below:

> *'The fundamental impulse that sets and keeps the capitalist engine in motion comes from the new consumers, goods, the new methods of production or transportation, the new markets, the new forms of industrial organization that capitalist enterprise creates [...] the history of the productive apparatus of a typical farm, from the beginnings of the rationalization of crop rotation, plowing and fattening to the mechanized thing of today – linking up with elevators and railroads – is a history of revolutions [...] that incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one. This process of Creative Destruction is the essential fact about capitalism.'* (Schumpeter 1942:82-83)

For Schumpeter, creative destruction stems from 'incessant' innovation which renders irrelevant previous forms of production, investment and skill that were once pioneering. This leads to the devastation of older forms of manufacture, investments and entire industries, which in turn results in shifts in the geographies and organisation of capital and labour. The unceasing processes of creative destruction lead to intensified competition and place constant pressure on capitalists to transform the products, technologies, markets and processes in their industries in order to lead, or at the very least follow, the latest direction of the market.

Based on this notion of creative destruction, Schumpeter (1942:82) outlines four forms of innovation that capitalists can draw on: 'competition from the new commodity, the new technology, the new source of supply, the new type of organization (the largest-scale unit of control for instance)'. GCC proponents have categorised these four forms of innovation as 'product, process, functional and chain upgrading' (Selwyn 2014:3-4). GCC and GVC adherents suggest that in order

for developing countries to develop, firms in developing countries need to gain access to global markets by 'upgrading' their position in relation to lead firms in their GVCs, which are usually based in developed countries. Central to this concept of economic upgrading are Schumpeterian notions of innovation (Ibid.).

Applied as they are in the GCC and GVC paradigms, Selwyn (2014:18) argues that these Schumpeterian understandings of innovation feed the myth of the 'genius' entrepreneur, which enables its proponents to avoid identifying the exploitation of labour as the real source of entrepreneurial wealth. Put differently, this understanding of 'innovation' serves to justify an approach that places central analytical importance on the innovation of entrepreneurs in supplier firms to upgrade in relation to the market power of 'lead' firms, in order to participate in global chains of production and value 'creation'. Consequently, adherents neglect the wider power relations at the heart of these processes. In the context of the GCC/GVC paradigms that use this limited conception of power in production chains to try to explain dynamics and transformation in the capitalist global economy, innovative entrepreneurs in supplier firms are then problematically recast as the drivers of the development of periphery and semi-periphery countries.

To this end, the paradigm appears to primarily address the business management concern of how a firm within a chain of production could 'create' or capture value, and government imperatives of economic development. Indeed the GVC paradigm has found wide purchase in policy-making circles, perhaps precisely because it tends to avoid relational and conflictual conceptualisations of power. Due to its micro economistic focus, GVC studies tend to offer 'technocratic means to solve industry problems' (Neilson et al. 2014:6). In this vein, Fernandez (2014:210) assesses that GVCs have been transformed into a neoliberal device used strategically by firms in value chains and by

supranational institutions for uncritical policy-making that has *'legitimated a subordinated and exclusive process of integration of these actors into networks governed by the transnational fraction of capital rather than a tool to enable economic actors from developing countries to reach strategic positions in global economic networks'*.

The approach to studying power in GCC/GVC approaches, although not explicit, is on the *exercise of power*. In other words, power is studied at the point of its exercise, and the outcomes of its exercise. As discussed above, this causal mode of explanation for understanding power often misses structural sources of power, which in part explains the under-theorisation of power relations in regard to the state and other institutions in the wider governance structures of GVC or GCC paradigms. This tends to result in an oversimplification of the dynamics of global capitalism.

An interesting body of literature using GCC and GVC approaches extends the narrow conceptions of power that typify these paradigms to include an examination of power in relation to labour at specific points in the value chain under study. Case studies using these labour benefit approaches to analyse GVCs provide insight into the working conditions of workers at different nodes in the chain and explore the potential for what they term 'social upgrading' alongside economic upgrading. Here, 'social upgrading' is a process in which labour is able to gain concessions such as improved working conditions, benefits or wages because of its improved position in a value chain. For example, Barrientos et al. (2016) offer a case study on supermarket expansion within South and East Africa and the mixed opportunities that this process provides for economic and social upgrading (or downgrading) for horticultural producers and workers, and Rossi (2013) explores economic and social upgrading in apparel supplier firms in Morocco.

'Labour benefit' studies attempt to remedy the neglect of labour through the inclusion of 'social upgrading' into GCC/GVC-paradigm informed approaches, and contribute useful case studies that incorporate labour into the framework. Although they are inclusive of labour, analytically the source of power still rests predominantly with firms in terms of their exercise of market power, economic coordination and their governance of inter-firm relations. After firms successfully 'upgrade' their position in the value chain, 'social upgrading' could occur either through possible concessions that trickle down to labour as a direct result of economic upgrading, or because labour is then in a better position to leverage its power resources, such as structural or associational forms of power, to its benefit.

Increasingly scholars are finding that inclusion into the global economy through economic upgrading does not always lead to social upgrading or improved working conditions (Werner 2018). In this regard, North/South power asymmetries are acknowledged through the unequal relationships between 'supplier' and 'lead' firms. However, these divides and relations of power are, as Bernstein and Cambling (2016:440) argue, 'systematically, if tacitly, detached from structures and dynamics of class inequality and social inequality more broadly'. These analyses tend to be delinked from broader critiques around national development and the dynamics of capitalist accumulation.

In sum, the GCC and GVC paradigms use a limited conceptualisation of power which offers weak explanatory potential for framing power relations in global chains of production. In particular, these paradigms are unable to tackle questions around class-relations, poverty and global inequality, especially in relation to the global south.

GPNs and ANT: Networked power and territorial embeddedness

I now turn my attention to the way in which power is conceptualised by proponents of the GPN paradigm. The GPN paradigm is primarily associated with scholars of economic geography in the Manchester School tradition. By developing the GPN approach, its proponents sought to remedy some of the weaknesses of the GCC and GVC paradigms which neglect the importance of agency, structure, institution and context (Hess 2008:453). The GPN approach draws from diverse influences including economic and organisational sociology, actor-network approaches and development studies (Hess and Yeung 2006). In order to bring all of these different analytical traditions together into one framework, Henderson et al. (2002) set out to explain the conceptual dimensions and categories of GPNs. Dimensionally, the GPN approach is multi-scalar and includes firms, sectors, networks and institutions. GPN's conceptual categories of embeddedness, value and power are elaborated on below.

GPN and actor-network theory scholars state that the heuristic chain framework provided by Hopkins and Wallerstein (1977) is useful, but argue that the WS approach is unable to further our understanding of the complexity of the role which individuals, class struggles and embedded social relations play in the process of change and the reconfiguration of power relations in these chains/networks (Busch and Juska 1997:690; Coe et al. 2008; Coe et al. 2010). This, they argue, is due to the tendency of its proponents to compartmentalise the world into core and periphery dichotomies which negate agency and spatial and temporal complexities, and subsequently to lead its proponents to adopt teleological explanations of capitalist development (discussed below).

Generally chain/network approaches represent an epistemological shift away from a state-centric understanding of production to a global networked view of the world economy. This has been accompanied by a shift in methodological approaches. Instead of analysing economic relations through the lens of the nation-state; what Pries (2005 in Coe et al. 2010:141) calls 'methodological nationalism'; scholars have become more cognisant of including different actors, scales and sites for understanding and analysing the global economy. The increasingly global scale of the organisation of production, distribution and finance necessitates a reflection on spatial scales which take into account local, national, regional and global geographies (Hess and Yeung 2006). However, there is a caveat. Some network research within the Global Production Networks and Actor-Network Theory paradigms conceptualise economic activity as consisting of multiple webbed complex networks with different connections, flows and networked forms of governance. Henderson et al. (2002), for example, conceptualise power dynamics in GPNs within spatially- and temporally-embedded multi-directional networks. As scholars focus on ever more networked webs of activity, the locus of power becomes increasingly diffuse and difficult to identify and study.

In the absence of clearly observable scalar hierarchical relationships, the concept of power becomes unclear and loses its analytical purchase for the purposes of analysing power imbalances in relation to the unequal distribution of resources. Further limitations of the GPN paradigm emerge in the process of its broad framework-building and its empirical application. Here, I must emphasise that this critique is not to discount the importance of many of the GPN case studies and the contribution of the GPN approach to expanding on and widening the GCC and GVC frameworks[12]. Rather, this critique serves to question the unity and significance of GPN as a coherent theoretical framework

[12] Bair (2005) and Selwyn (2014) also point out that despite attempts to broaden the scope of the GCC approach, GPN case studies do not depart significantly from GCC case studies.

that can be applied to the analysis of the dynamics of global capitalism with more explanatory power than other chain approaches.

In framing the GPN approach, Henderson et al. (2002) offer an ambitiously long list of dimensions and conceptual categories that they suggest GPN scholars should research in their respective production networks. These include territorial and networked embeddedness; value in both the Marxian and orthodox traditions; and corporate, institutional and collective forms of power to be analysed in relation to both value enhancement and capture, all of which can be explored at the firm, sectoral, network and institutional levels of analysis. Given this all-encompassing list, it comes as no surprise that these concepts are selectively applied by a cumbersome range of GPN scholars from diverse theoretical traditions. Indeed, the framework is being pulled in all directions, with every conceptualisation and definition possible being applied to, for example, the study of power relations in GPNs. It runs the risk of becoming a one-size-fits-all guide for studying a list of concepts rather a coherent theoretical approach to conceptualising power relations in the global economy beyond basic forms of power.

In terms of value, Henderson et al. (2002) argue that GPN scholars should identify and analyse both economic rents generated by firms, and working conditions, skill-levels, technology and so on within specific institutional and cultural settings. Economic rents include the following:

- *Technological rents are gained by firms that have 'asymmetric access to key product and process technologies'.*
- *Organisational rents are gained by firms that utilise specific organisational and managerial techniques (e.g. just-in-time production).*

- *Relational rents are gained by firms that are able to effectively leverage their position and inter-firm relationships in the production network.*
- *Brand rents are gained by firms that are able to establish/leverage off the popularity of a brand name in a consumer market.*
- *Trade-policy rents are gained by firms that benefit from the institutional and regulatory context.*

  (Henderson et al. 2002:448-9).

These distinctions between different types of rents are particularly useful for a more nuanced understanding of the asymmetrical power relations between different firms in the GPN.

Embeddedness is defined by the authors as 'social and spatial arrangements in which those firms are embedded and which influence their strategies and the values, priorities and expectations of managers, workers and communities alike' (Henderson et al. 2002:451). They distinguish between two forms of embeddedness: territorial and network embeddedness. Territorial embeddedness relates to the geographic location of firms, with the potential for their location to 'generate a new local or regional network of social/economic relations […] embeddedness then becomes a key element in regional economic growth and in capturing global opportunities' (Ibid.:452). Network embeddedness relates to 'the network structure, the degree of connectivity within a GPN, the stability of its agents' relations and the importance of the network for the participants' (Ibid.:452). The authors posit that network embeddedness 'can be regarded as the product of a process of trust building between the network agents, which is important for successful and stable relationships' (Ibid.:453).

The authors define three forms of power to be analysed in relation to value enhancement and capture: corporate power; institutional power and collective power. Corporate power is defined as 'the extent to which the lead firm has capacity to influence decisions and resource allocations […] vis-à-vis other firms in the network […] in its own interests' (Ibid.:450). They define institutional power as the exercise of power by the state and international agencies and institutions, stating that the exercise of power can influence 'the investment and other decisions of lead companies and other firms integrated into GPNs' (Ibid.:450). Lastly, collective power is defined as 'the actions of collective agents who seek to influence companies at particular locations in GPNs, their respective governments and sometimes international agencies' (Ibid.:451). This can include trade unions, employers' associations and NGOs.

These are useful categories of power insofar as they include not only corporate or market power (the focus of GCCs/GVCs), but also institutional power which relates to the state and other regulatory institutions, and collective power which includes civil society organisations. However, it is not clear how these different categories of power are interlinked or mobilised, and why or how these different categories of power accrue to actors in the GPN. Furthermore, the inclusion of workers and civil society only in the category of 'collective power' neglects the fact that workers and consumers also have the capacity and agency to leverage their structural, associational power and institutional power both individually and collectively, and that economic actors are also able to organise collectively.

The GPN conceptualisations of power, and accompanying value and embeddedness, are an improvement on the previous GCC and GVC paradigms. By widening the governance structure that guides their analysis from the level of the firm and the production network to incorporate labour and the broader regulatory mechanisms, GPN scholars have incorporated important forms of

institutional and social power alongside market power. However, their ambitious list of concepts and dimensions that form their 'framework' for exploration does not offer, in empirical practice and theoretical coherence, a unified theoretical framework and specific theoretical understanding of power relations between different actors in the global economy. [13]

Power as a social relation: A world-systems approach to GCCs

Following Jennifer Bair's (2005) call to reinsert commodity chains back into their world-systems origins, a 'second generation' commodity chain approach has emerged. This approach revisits Hopkins and Wallerstein's (1977) research agenda for empirical class-based studies of the interlinked steps of production from raw materials to a final consumable item, and their constituent social relations in the context of global capitalism (see Selwyn 2011, 2014; Phillips 2017). World-systems scholars contend that rather than focusing on the development of nations, the key unit of analysis should be the hierarchical global capitalist economy (Arrighi 1990).

This differs from a developmentalist approach, whose proponents state that development is achievable for nation-states, and that it is through inclusion into the global economy that this is possible (see, for example, Gereffi 1994, discussed below). Proponents of the developmentalist approach, world-systems scholars argue, make a number of misguided assumptions[14]:

(1) Development is realisable for all countries;

[13] For example, Levy's (2008) study makes use of neo-Gramscian notions of power; Raj-Reichert (2012) uses Foucauldian governmentality; Arnold and Hess (2017) propose a Gramsci-Foucault combination; Coe et al. (2010) propose a World City Network framing, and the list goes on. All of these authors make use of some of Henderson et al.'s (2002) concepts and dimensions.

[14] See Bernstein (1992); Dunaway and Clelland (1995) and Smith (1985), in Selwyn (2014:4).

(2) Upgrading is realisable for all (competing) firms;

(3) The upgrading success of one firm will not negatively affect other firms and, by extension, workers in those firms; and

(4) A lack of development is as a result of 'exclusion' from the global economy and need only be fixed by 'inclusion'.

The value of the WS 'commodity chains' approach for studying the dynamics of the global capitalist economy lies in its Marxian conceptualisation of power relations, and its ability to bridge the local spheres of social reproduction, production and political activity, and the global structure of the economy (Quark 2014; Dunaway 2014). In Marxian approaches power is conceptualised as a social relation, and power asymmetries are seen as central to and constitutive of capitalist class relations and market exchange, which are understood, respectively, as intrinsically exploitative and unequal. Babones (2015:7) explains the centrality of Marxian power relations in the sociological world-systems approach:

> *'Marxian sociology… is primarily concerned with understanding how power relations in society are shaped by embeddedness in this larger capitalist economic system […] World-systems analysis provides a macro-level framework for applying Marxian concepts to the study of power in society […] It remains rooted in sociology because fundamentally it is nothing more and nothing less than the Marxian lens on society opened up to its widest possible angle.'*

Coe et al. (2010:141) warn us that there is a conceptual tendency in the world-systems approach to 'conflate power and hierarchies within geographies of bounded space' which has a static and totalizing effect. Similarly Werner (2018:4) suggests that a WS approach to GCCs 'can be seen as a

totalising account in which multiple particular arrangements of capital accumulation could be reduced to their parts in the system.' These criticisms are justified in their assessment of overly structuralist world-systems analyses which fail to capture concretely the historically-embedded processes of expansion and transformation that define capitalist development. However, it is this precise justification upon which Hopkins and Wallerstein (1977) proposed their research agenda as an attempt to address these potential weaknesses. Through this research agenda, they offer 'commodity chains' as an empirical tool for concretely studying locally-embedded and globally-organised production and its constitutive social relations (Bair 2014).

In a WS approach, global chains of production are analytically linked to inequality (Werner 2018). A key example of this GCCs is Benjamin Selwyn's (2014) proposed research agenda which re-routes commodity chain analysis towards the urgent task of understanding the social phenomena of global inequality and poverty in contemporary capitalism. In doing so, Selwyn also centralises class relations and labour regimes in the analysis of the dynamics of capitalism within a world system[15]. Selwyn's (2014) research agenda builds the foundation for developing a coherent conceptual framework that helps us to answer the following question: what are the power relations and interrelated mechanisms and processes in commodity chains that enable us to better understand and explain the reproduction of global and national poverty and inequality? The gap here, which critical scholarship could fill, is to contribute towards a deeper understanding of the concrete ways in which global poverty and inequality are reproduced through the dynamics and social relations that constitute specific commodity chains within the expansion and transformation of the global capitalist economy.

[15] See Taylor 2008; Sowers et al. 2014; Rainnie et al. 2011; and McGrath-Champ et al. 2015 who also call for capital-labour relations and their institutional contexts to be central to any chain/network analysis.

Selwyn bases his research agenda on a combination of Joseph Schumpeter's concept of 'innovation' (see below) and Karl Marx's concept of 'creative destruction'[16]. Schumpeter's approach is limited because, while drawing heavily on Marx, he rejected Marx's theory of labour value and chose to comprehend capitalism as devoid of conflictual social relations, thus underplaying capital-labour relations in general (Selwyn 2014). While Marx's explanation of how firms derive super or surplus profits[17] is very similar to Schumpeter's ways in which firms can innovate (see below). Marx's explanation for *why* these strategies enable capitalists to derive profits differs from, and is indeed the obverse, of Schumpeter's explanation. Schumpeter argues that 'profits (whether 'normal' or entrepreneurial) were either 'wages to management' or rewards to entrepreneurs derived from innovation', whereas for Marx, 'both average and super profits were rooted in the exploitation of labour by capital' (Selwyn 2014:6).

While 'upgrading' and 'governance' are read as non-conflictual innovative entrepreneurial strategies in the Schumpeterian-inspired GCC/GVC paradigms, a Marxian reading draws on creative *destruction* to highlight that the other side of this innovation (in the form of 'upgrading' and 'governance') consists of 'global value relations' which are strategies that increase the rate of exploitation of labour at a local level, but which fit into global systems of development (Araghi 2003, in Selwyn 2014). These global value relations include 'immiseration (pushing down wages, often to poverty levels), through raising the rate of absolute surplus value extraction (lengthening the working day) and/or increasing the rate of relative surplus value (intensification of the working day through technological

[16] Harvey's (2011:46) summation on the differences between Marxian and Schumpeterian perspectives on capitalist innovation is that, 'While Marx clearly admired capitalism's creativity he (followed by Lenin and the whole Marxist tradition) strongly emphasised its self-destructiveness… the Schumpeterians have all along gloried in capitalism's endless creativity while treating the destructiveness as mostly a matter of the normal costs of doing business'.
[17] For Marx, 'firms derive super or surplus profits from (i) being more technologically advanced than other firms, enabling them to operate above the average rate of productivity and profitability, and/or (ii) enjoying monopolies of technologies and resources' (Selwyn 2014:6).

and managerial innovations and/or reducing the costs of labour power)' (Marx 1990, in Selwyn 2014:6).

The value that Selywn (2014:18) takes from a reading of Schumpeter is in regard to the ways in which 'initial innovations by firms generate longer term-culminative processes whereby market-leading firms are able to reproduce their position in relation to (and through the hierarchical organisation of other firms)'. Expanding this analysis beyond its national conception of the economy to a global conception of Marxian creative destruction enables us to link the innovations of firms in chasing capital accumulation, with global value relations (how exploitation is intensified), as well as the potential for resistance of that exploitation (and how this in turn can inform capital's subsequent strategies and global value relations).

For Selwyn (2014:18), this approach, viewed through a dynamic class relations lens[18], could illuminate:

> *'How, just as lead firms and hegemonic states seek to generate favourable conditions for capital accumulation in relation to other capitals, so too do they seek to organise a global labour regime to ensure the maximum extraction of surplus value across commodity chains in general and in the monopolized high value added sectors in particular'[…] and that this process is 'never free from tensions and contradictions, themselves generated by the capital-labour relation and particularly the ability of workers to disrupt global commodity chains through collective action'.*

[18] Silver's (2003) pioneering study on the global shifts in capitalist development which result in the rise and decline of leading sectors in relation to the geographic organisation of production and different sites of labour unrest combines a world-systems framework with a class relations dynamic.

Selwyn (2014:2) operationalises Marx's creative destruction 'as a dual set of relations and processes. The first set of relations is the asymmetric competitive relations between firms. The second is the global structure of class relations'. Selwyn's framing of a critical global class lens through which one can investigate the relationship between commodity chains and inequality offers a significant and useful departure from the GCC/GVC/GPN paradigms and their limited conceptions of power relations. The critical global class framing places power relations from a Marxian world-systems perspective at the heart of a critical investigation into commodity chains that centres on class-labour relations in a global capitalist economy. This approach compels us to put labour at the centre of analysis in order to address the issues of global inequality and poverty.

However, Selwyn's framing contains three oversights. The first is the exclusion of finance capital and the ways in which it is reshaping global commodity chains. The second is his neglect of the gendered sphere of social reproduction – the household – which has been, at least from its conception, so central to the world-systems approach. The third is a more concrete conceptualisation and operationalisation of power. These areas of investigation are important for this study on power relations between different actors in the wheat-to-bread commodity chain. Linked to the removal of the marketing boards for different food products (see Chapter 4), finance capital actors are playing an increasingly important role in insurance provision and grain trading in the wheat-to-bread commodity chain. The household is an important inclusion into any commodity chain analysis since it is the point of consumption of the end-products of production chains, and of the social reproduction of workers who are hired in various nodes of production chains. Since bread is a staple food for many people in South Africa, the chain is integrally linked, both materially and symbolically, into daily household activities. The integration of finance capital and households into commodity chain analysis is discussed below, followed by a conceptual discussion on power.

Although the process of financialisation, which Arrighi and Moore (2001) term 'financial expansion', is not a new phenomenon in the global economy, it does have implications for the accumulation strategies of particular actors and the shaping of commodity chains. As Newman (2009:543) points out, in neglecting the role of finance and financial markets in 'shaping the structure and functioning of physical chains, and second as a bridge and coordinating mechanism across chains, chain analysts have neglected to consider the role played by powerful agents (from within and outside the chain) in seeking out profits from their participation in commodity derivatives markets'. Nonetheless, finance capital has largely been neglected by many GCC/GVC/GPN proponents, as well as by Selwyn (2014) in his predominant framing of capitals as 'firms' who drive or are subject to the governance and upgrading strategies in commodity chains.

In terms of food regimes (discussed in Chapter 4), the contemporary financial expansion of trading capital, shareholders, agro-food investors and the role of financiers in agro-food commodity chains, have a direct impact on capital accumulation strategies and often place downward pressure on other capitals, and ultimately on workers tied into these chains, which leads to intensified competition between workers[19]. The gendered dimension of the role of finance is furthered by Palpacuer (2008) who demonstrates the links between transnational elite and financialisation to the oppression of women workers tied into commodity chains. To neglect this capital actor is to miss, or misunderstand, key innovation strategies of other capital actors and the impacts of these on global poverty and inequality. Further in agro-food chains, global price volatility, especially of staple foods,

[19] Bryan and Rafferty (2009) explain at length the ways in which derivative markets, which are now the most traded commodity in the world, impact on prices in markets, and consequently lead to downward pressure on multiple actors including labour.

has a direct impact on households where the social reproduction of labour linked into these commodity chains occurs.

Specifically in the wheat-to-bread commodity chain, there are a few other ways in which labour is directly impacted by financialisation of the chain. There is a direct connection between the intensification of financialisation and the expansion of derivatives as grounding to finance over the past two decades, with the informalisation and fragmentation of labour. Bryan and Rafferty (2006:176) explain,

> *'The capitalist faced with intense, generalised competition in money and commodity markets must look to the sphere of production as the site where it is possible to 'get a jump' on competitors […] this is a race for profitability. Labour that cannot deliver globally competitive levels of productivity must compensate, as it were, for its less than frontier productivity by accepting longer hours and lower wages'.*

Financialisation, derivatives especially, place downward pressure on other capital actors and, consequently, on labour. Another fairly well-researched way in which financialisation is impacting directly on labour and households is through the indebtedness of the poor. Labour becomes a further site for accumulation through its consumption of credit, housing loans and other financial products, but unlike capitals on the futures market, it is unable to protect itself from the risk linked to these products (Bryan et al. 2009, Newman 2009). It is in this sense that labour in households and the unemployed become the 'shock absorber of last resort', with the response of the state being a neoliberal focus on financial literacy for individuals (Ibid.:468,471).

This brings me to my second point, which is Selwyn's conceptual neglect of households (and thereby gender) in this WS class-based approach[20]. Both inequality and poverty are embodied at the level of the household where social reproduction takes place. Social reproduction is defined by Bezanson and Luxton (2006:3,6) as:

> *'The processes involved in maintaining and reproducing people, specifically the labouring population, and their labour power on a daily and generational basis. It involves the provision of food, clothing, shelter, basic safety and healthcare along with the development and transmission of knowledge, social values and cultural practices and the construction of individual and collective identities.' [...] 'When valued by the market', social reproduction 'is gendered, often racialized and poorly remunerated'.*

There are a number of feminist scholars who, in an effort to remedy the weakness stemming from separating the household sphere and units of production, have incorporated the household and gender into commodity chains research, in particular from a world-systems perspective (see for example Yeates 2013; Collins 2013; Palpacuer 2008; Carswell and De Neve 2013; Dunaway 2001, 2013, 2014; Clapp 2014). Anwary (2017:195) demonstrates how 'GCCs threaten the productive and reproductive labour of poor women in periphery nations through the implementation of strategies by capitalists in core nations and by local capitalists connected to the CC'. The other end of this is the degree to which households are compelled to self-manage their own financial exposures (health insurance, education, investment for retirement., loans, consumer credit) because these are no longer adequately provided by the state at the same time as low waged work is dominant (Clapp 2014).

[20] Hopkins and Wallerstein (1994:77) 'caution scholars to conceptualise a commodity chain in terms of multiple levels of surplus extraction from worker households at every spatial node of its lengthy network […] That is, to recognize that households and communities subsidise capitalist production through reproduction of labour forces and the maintenance of low-paid workers, and that gender is constitutive of commodity chains.' (Dunaway 2014:66).

Clapp (2014:462) terms the individualising of financial success and failure as 'the financialisation of daily life'.

Commodity chain/network literatures have been criticised for their productivist orientation in which consumption and consumer ends of these chains are neglected. Hughes and Reimer (2004:3) claim that the 'privileging of the sphere of production in GCC analysis as the 'true' site of meaningful change has reinforced a tendency to treat retail and consumption sites as simple starting points for analysis rather than valid domains of inquiry'. This is a significant point for this study, because bread as a staple food connects the commodity chain directly to consumers in every household, many of whom are workers who rely on staple foods for nourishment.

The issues of high food prices and poor working conditions are both experienced at the level of the household in the process of social reproduction. Yet at the same time as social reproduction in the household is threatened, the household is also a potential site of resistance to environmental and labour exploitation. Dunaway (2014:75) points out that households 'form the spatialities of resistance […] [They] can threaten productivity and profits within commodity chains […] they often are the locations for nurturing and educating labour activism and resistance'.

Dunaway (2014:69) poses three questions for WS GCC analysts in this vein:

> *'(1) How unpaid biological reproduction subsidises the chain;*
>
> *(2) Whether the chain threatens or supports household reproduction and maintenance;*
>
> *(3) Whether the chain threatens the natural reproduction of affected ecosystems, and*

(4) Whether the chain constructively reproduces or contributes to the structural crisis of the infrastructure and processes of the capitalist world system.'

These questions raise important points the way in which the unpaid work of women in households in maintaining, caring for, feeding and raising the next generation of workers benefits capital actors in commodity chains at the same time as the environmental and social impacts and 'externalities' of these chains are pushed onto households. By bringing in the gendered household sphere and by extending the analysis to include finance capital actors that participate in commodity chains, a class-based approach to studying commodity chains in relation to poverty and global inequality is strengthened.

Conclusion: Power resources approach and world-systems global commodity chains

In this chapter, drawing on a Marxian understanding of power as a social relation embedded within the dynamics of global capitalism, I develop a power resources framework that incorporates workers, economic actors and consumers as actors in enduring interdependent relationships. Different types of power resources enable each actor to influence the behaviour and decision-making of other actors through reward, punishment and/or the perception of the potential thereof. I add to this an analysis of market power for conceptualising capital-to-capital competition and exchange.

The combination of this conceptual power resources framework, combined with a WS theoretical approach to GCCs, offers the most explanatory value for my particular study on power relations in the wheat-to-bread commodity chain. Both approaches conceive of social power as relational and

embedded within the enduring dynamics of the capitalist economic system. The power resources approach provides a concrete conceptualisation for studying power relations in the real world, while the WS GCC approach provides us with a framework for connecting interlinked nodes of production, distribution and consumption in a way that extends the analytical scope of this process from the micro-level of the household, to the meso-level of the workplace, and to the macro level of the broader capitalist global economy.

This conceptual framework provides a useful tool for mapping and analytically categorising the power resources of actors and the linkages between them in the commodity chain. However real world observations in the field indicate that the capacity for actors to mobilise power resources and their behavior in relation to other actors continually changes through processes of contestation and compromise, and power resources overlap and intersect in a multiplicity of contextually specific ways. The following chapter details my methodological approach for studying power relations in the wheat-to-bread commodity chain in South Africa using a WS GCC power resources framework.

CHAPTER 3

Researching power relations in the wheat-to-bread commodity chain

Introduction

This study brings together two conceptual framings: a power resources approach and world-systems (WS) global commodity chains (GCCs). Both of these approaches require ontological clarifications for the empirical study of the wheat-to-bread commodity chain, which are discussed below. In order to understand the power relations between actors in each node of the commodity chain, two main research methods were employed: document analysis and in-depth interviews with key actors at different points in the commodity chain. I discuss issues of access and my experiences in the field, followed by a section on ethics for this study.

Methodology: power resources and global commodity chains

Having completed this research, I argue that a power resources WS GCC approach for this study offers the most explanatory value for analysing my findings. However, I entered the field without a clear idea of which theoretical approach would offer the most explanatory value. Since I began fieldwork without a concrete definition for power, my approach to in-depth interviews for different actors in different nodes of the wheat-to-bread commodity chain was broad. These interviews were long and time-consuming but enabled me to gather rich detailed data and in-depth insight into the dynamics and linkages of each node, and the perspectives and narratives offered by each respondent.

Because I adopted an inductive exploratory approach to this study, my conceptualisation and operationalisation was developed in a reflexive way based on what emerged in the data.

The theoretical underpinnings of power and GCCs have implications for the way in which we conceptualise and empirically observe power relations in an embedded system of production, distribution and consumption. Offered below are some ontological clarifications on the relationship between different power concepts, and the conceptual components of a chains/network approach, and what these mean for researching power in the wheat-to-bread commodity chain.

A power resources approach forces us to take seriously the broader structural, political and cultural settings within which actors are embedded in order for us to understand and interpret the relationships between actors and, specifically, the distribution of power resources. This requires us to conduct research on the broader contextual system and the configurations of power at different levels. Similarly, a WS approach requires a broader contextual location of the subject within capital accumulation from a global scale to a localised scale. A detailed historical account of the way in which power relations in the commodity chain were formed alongside the broader dynamics of capitalist development is offered in Chapter 4.

Understanding the relationship between the bases of power, the exercise of power, interests, goals and expectations or beliefs of different actors is important for a power resources approach (Korpi 1985, see Chapter 2). The focus for this approach is on *bases of power* for analytical purchase. This requires us to develop an account of the specific actors in the wheat-to-bread commodity chain, their interrelationships, their power resources, the mobilisation and/or non-mobilisation of these

resources and the intended and unintended outcomes resulting from the mobilisation and/or non-mobilisation of these resources.

The commodity chain approach to studying production, distribution and consumption enables us to do exactly this by providing us with a mapping framework onto which all the interconnected nodes of production and distribution can be detailed. Next, the power resources approach entails an account of the interests, goals and strategies of intentional actors, as well as their expectations and beliefs in relation to their power resources and those of other interdependent actors. To do this, we need in-depth first-hand accounts of the above from multiple interdependent actors in the commodity chain.

By bringing together the WS GCC and a power resources approach to studying power relations in the wheat-to-bread commodity chain, we are able to map a wide range of detailed accounts, narratives and perspectives onto a structurally connected chain of nodes which is influenced by and influences external associational and institutional actors. This enables us to reconstruct a complex picture of the power resources of interdependent actors in production and consumption within a specific institutional setting and in the global capitalist economy.

Research strategy and methods

In order to observe power resources, their mobilisation and outcomes, a key starting point was to unpack the overall political, economic and social context and the structure of the commodity chain for industrial bread. This began with a broader look at global capitalism and the South African historical and contemporary context. Next using industry reports it was necessary to map the

commodity chain for wheat-to-bread in order to understand the linkages between different nodes in the chain, and to identify specific actors. Given that power resources are so deeply connected to political, social and economic processes which are not measurable, the overall approach for the collection of primary data for this study was qualitative. This was combined with supportive data from secondary sources such as industry statistics on production and company reports.

As Hess and Yeung (2006) argue, the strengths of qualitative research in commodity chain/network approaches lies in the rich observations and the explanatory power that this approach yields. For the power resources approach it is necessary to develop a clear picture of interests, goals, expectations and beliefs. My in-depth interviews were able to yield detailed insights on respondents' perspectives, beliefs and the broader social and political processes into which they are tied. Further, in order to understand the important dimension of discursive power, I was able to use data I had gathered during in-depth interviews on different narratives, cultural behaviour, beliefs and meaning-making. For example, learning about the shifting identities of wheat farmers in relation to broader discursive power relations would not have been possible without in-depth conversational interviews with farmers.

My approach was to begin with an analysis of secondary literature relating to the broader global and South African context, and specifically the wheat-to-bread commodity chain. Using industry reports I was able to map the linkages in the chain, and obtain data and other information on the enterprises, other actors, policy environment and social forces. This included newspaper articles, journals, books, policy reports and company documents. Some of the literature was used to analyse certain narratives that exist and are perpetuated by certain enterprises or regulatory bodies in the chain.

Forty in-depth interviews were conducted with key informants in the wheat-to-bread commodity chain. These key informants were selected using purposive sampling, based on their knowledge of and involvement in different nodes of the chain. I conducted interviews with seed breeders, wheat producers, managers at mills and bakeries, lawyers involved in class action lawsuits, representatives of consumer organisations, activists in civil society organisations that link to the commodity chain, government officials, grain traders, bankers, unionists and senior researchers and academics. The full list of interviews can be found at the end of this document.

The questions were all open-ended and differed for each type of respondent. Each interview guide contained questions on linkages in the value chain and on the power of different actors depending on which node the key informant occupied. However, as is described further below, the most successful approach for gaining in-depth insight was a conversational approach which took the format of an informal conversation rather than a clear structured question-answer interview. Although this meant that interviews were long, it resulted in honest insightful details and perspectives that have added to the richness and depth of the data.

I transcribed all of the interviews were word for word and printed them out. This data was thematised into simplified descriptors such as 'farmer working for input companies' or 'worker evictions off farms'. These were then separated, marked with respondent identifiers and sorted into similar thematic piles. Large piles were divided into smaller themes, while small piles were combined. The final thematic piles of data were then labelled. I used the labels of the thematic piles to begin constructing and organising a framework for the findings of the thesis. Several frameworks were

created before I settled on a structure that offered the most interesting and compelling way of presenting the data.

The data was selected and used in a way that could best illustrate the power relations in the wheat-to-bread commodity chain and the analysis and interpretation was supported by secondary literature and theoretical analysis. However there was a significant amount of data that emerged from the fieldwork and not all of it was used. What was excluded remained outside the scope of this project, such as detailed discussions on land reform. The remaining data could be used and elaborated in future publications.

Access and fieldwork experiences

Interviewing key respondents in every node of the wheat-to-bread commodity chain in South Africa took me on a journey around three provinces in South Africa, from homes, farms, mills and bakeries in rural farmlands and small towns in the Western Cape and the Free State, to offices and skyscrapers in Johannesburg and Cape Town. While the physical spread of the finance and production nodes of the commodity chain for industrial bread is vast, stores throughout the country sell industrial bread, and consumers of this bread are located in almost every household in the country.

Generally respondents were generous with their time and shared in-depth and detailed information. Almost all of the interviews took place face-to-face and lasted between one and four hours long. Taking into consideration the type of information that I needed to gather (discussed above), my preference was to hold one-on-one face-to-face interviews at times and places that suited my

respondents so that they were not rushed. This was time-consuming because it was necessary to drive back and forth to the same area on different days for different interviews, and many interviews took place at odd times in the early hours of the morning or late in the evening. However, because my respondents were not rushed, I was able to spend time building trust and rapport in order to encourage honest insightful conversation and enable an in-depth exploration into topics with which I was not yet familiar.

Although obtaining contacts for respondents in some of the nodes was challenging, most respondents were open and welcoming once I made contact. Initially I tried to obtain wheat farmers' contact details from AgriSA and GrainSA, however they were not able to give out the details of their members. Access to farmers became much easier once I managed to get in touch with one wheat farmer and used snowball sampling to contact other farmers.

Setting up times for interviews with the managers of smaller mills was challenging because some of them were understaffed and busy. Lastly, access to respondents in the large milling and baking corporates was difficult because permission for interviews comes from the human resources staff at the head offices, who were reluctant to grant researchers access to their managers at various bakeries and mills. Nonetheless I was successful when contacting managers directly through the networking site LinkedIn and telephonically, and found that they were more than willing to be interviewed. However I was unable to gain access to respondents at the head offices of the bread corporates, which have, according to one of the bakery managers who works for one of the bread giants, become much more secretive since the Competition Commission exposed the collusion of the bread cartel (see Chapter 5).

My experiences interviewing wheat farmers, seed breeders and managers at mills and bakeries afforded me rich insight into not only their challenges, perspectives on power relations and linkages in the commodity chain but also the physical processes of production. Most of my interviews with farmers took place in their homes on their farms where I sat with them in their lounges or kitchens. These interviews were often followed by tours of the farms where I gained a sense of the level of mechanisation and the vast areas of planted wheat crops. These farm homes were passed down from generation to generation, which was visible in the age of the homes and furnishings. One farmer showed me farm records dating back to when his great great grandfather farmed the same land. His family had meticulously recorded details of exactly which crops were harvested in which years, the yield, the weather and so on. These records demonstrated the clear decline in wheat production on his farm from when wheat was the main crop to present-day with wheat as a small component of the crop rotation, as is reflective of the broader decline in wheat production in South Africa (see Chapter 5 and 6).

Wheat farmers had a sense of nostalgia for the olden days. One farmer gave me a tour of the small town nearest to his farm and reminisced about the school and how the town used to be 'back in the day'. There was a narrative about the old era of self-sufficient hard-working 'boere' (farmers) - their fathers and grandfathers- who, supported by the apartheid state, were able to 'feed the whole country' (see Chapter 4). This was linked to two opposite narratives about present-day farming in South Africa. On one side was a narrative about a bright future in agriculture characterised by productive large-scale capital intensive farming and linked to a modern global market. On the other side was a narrative that things were getting worse and there is no future for farming in South Africa. These farmers envisioned leaving farming or leaving South Africa to farm in a different country (discussed in Chapter 6).

Farmers who were negative about the future of farming tended to run smaller farms that were not as successful post-apartheid. Parts of these farms seemed run down and the infrastructure, houses and 1970's style finishing had evidently not changed much over the last few decades. Although these farmers saw the necessity for leveraging associational power resources through the collective organisation of farmers, they were ambivalent about whose interests associations such as GrainSA represented. They told me that GrainSA and the large-scale farmers would not give me the 'real' picture because they represented the interests of 'big' agriculture. These farmers felt abandoned and spoke about their concern about the way in which white farmers were 'vilified' by the state for political gain.

The farmers who offered the more hopeful narrative about the future of farming had successfully adapted to the 'free' market for grain trading and ran much larger operations with multiple enterprises. For example, I interviewed one wheat farmer in his large highly mechanised dairy facility where a herd of cattle was being milked. His outlook on farming in South Africa was very positive and it was clear that the farm was thriving in the post-apartheid era. Correspondingly, these farmers held a more positive view about GrainSA, and in line with an overall neoliberal discourse, they spoke more about the state's lack of capacity and its propensity for 'interference' in the market than on the politics of agriculture, land reform and inequality.

Interviewing farmers required travelling long distances not only between different towns but also between different farms that were far apart and often quite desolate. Many of the roads in the small towns, especially in the Free State, were marred by potholes and run-down. On the outskirts of these towns and farmlands were sprawling townships with poor infrastructure and dirt roads, where

many permanent farm workers and seasonal or casual workers live. In the Western Cape there was a heavy police presence even on the smallest interconnecting farm roads because of the recent protests by casual wine farm workers. On one occasion I was stopped by policemen who wanted to know what I was doing in the area. They saw their role as protecting the farms (especially the dry wheat farms from potential arson) and they were concerned that I was a unionist who was organising farm workers. This is not particularly surprising since the discourse around private property and the 'right to do business' in South Africa is hegemonic, while in the media and in the popular imagination, worker strikes and demands tend to be portrayed as illegitimate.

As with the farmers, the managers of mills and bakeries were also very forthcoming. I was taken on tours of the factories and observed the massive scale of milling and industrial bread manufacture in South Africa. In highly mechanised bakeries, for example, bread dough is made in huge industrial mixers and a constant production line of industrial bread loaves is rolled out on a conveyer belt on the other end, ready to be sliced and packaged into branded bags by machines. I was surprised by the frank responses of the managers of mills and bakeries who were skeptical around whether the bread they were making was healthy and offered insight on the secretive collusion of the bread giants that employ them. This was under the condition of confidentiality, which made it all the more important for not only their names but also the towns in which they work to be generalised to broader provinces. This is a measure to provide them with a level of anonymity in this written thesis in order to minimise potential social harm to these respondents (see ethical considerations below).

In contrast to the interviews with farmers and managers of mills and bakeries, most other interviews took place in offices. These included government offices, lawyers' offices, union offices and NGO or consumer organisation offices spread around Johannesburg, Pretoria and small towns in the Free

State and Western Cape. The biggest contrast with the rural areas of food production was the sparkling skyscrapers of the Johannesburg Stock Exchange (JSE) and the commercial banks in the business districts of Johannesburg where I interviewed commodity derivatives directors about grain trading, and financiers in banking about farming loans, insurance and marketing of wheat. I managed to gain access to all of these respondents and, as with the wheat farmers and other economic actors, interviews lasted between one and four hours long.

Ethical considerations

The information obtained during the course of the fieldwork is confidential and private. Unless permission was granted to use real names, in the write-up of the findings, the respondents' names, as well as the names of the places (for example companies, institutes etc.) at which the respondents were interviewed, have been changed to guarantee anonymity. In the case of wheat farmers and mill or bakery managers, I generalised the place to the province in which the interview was held in order to prevent them from being identified. For example, if a respondent was the only wheat farmer near a very small town, the name of the town has not been provided in order to protect confidentiality. An important dimension of ethics in research is to report, as accurately as possible, the views of respondents in a balanced and fair manner. Throughout the findings chapters I have used direct quotes and explained my interpretation of them in order to bring in my respondents' voices.

Participation in the interview process was voluntary and respondents were informed that they could stop the interview and withdraw at any stage. The respondents were made aware of these measures beforehand and were informed of the exact purpose of the study before the interview process began

in order to ensure transparency. Before the PhD fieldwork commenced, ethical clearance was applied for and granted by the University of the Witwatersrand non-medical ethics committee.

CHAPTER 4

The Changing Nature of State Control and the Formation of Monopoly Power: 1910- 1994

Introduction

In this chapter, I contextualise historically the wheat-to-bread commodity chain in South Africa and globally. My aims are threefold: First, by framing the local history of the chain through a world-systems food regime analysis, I link it to the broader historical global processes of capital accumulation and global power arrangements which have played a central role in shaping the different stages of the commodity chain. Second, I show how the strategies of the state and capital actors have encouraged and fostered two key processes in the commodity chain[21]: the concentration of large-scale white-owned farms and their cooperatives, and the monopolisation of corporate power in storage, milling and baking. Third and finally, I offer the contemporary local context of the wheat-to-bread commodity chain, encompassed by a relatively new constellation of power.

'Food regimes' were first coined and explained by Friedmann (1987) and Friedman and McMichael (1989), stemming from work on the historicisation of the international food order. Subsequently, leading up to the present, many authors have contributed to a significant and valuable body of work on food regimes in context, including Friedmann and McMichael. At its most basic level, a food regime is a 'rule-governed structure of production and consumption of food on a world scale' (Friedmann 1993:30). McMichael (2009:142) discusses the value of this historicised global approach to understanding agriculture and food:

[21] Here I draw on Benjamin Stanwix's (2012) thorough and compelling account, *Wheat, Bread and the Role of the State in Twentieth Century South Africa*, which is referenced with permission from the author.

'Arguably, each period, and the transitions between them, have reframed the politics of development and the scope and significance of agricultural and food technologies, including future implications (concerning environmental sustainability, food access and security, energy relations, control of technology, population displacement, nutrition and public health). In this sense, the food regime concept offers a unique comparative-historical lens on the political and ecological relations of modern capitalism writ large.'

There are two main periods which Friedmann and McMichael distinguish, based on numerous factors including the international state system, divisions of labour, patterns of trade, governing rules, the strategies of dominant capital, defining contradictions, technology and transitional processes. These are: the settler-colonial regime (1870-1914) under British hegemony and the surplus-regime (1945-1973) under US hegemony, both of which are discussed further below. McMichael (2003) has suggested that a third possible food regime, the corporate food regime, is emerging[22].

The settler-colonial food regime and beyond: dispossession and state control in South Africa (1870 – 1947)

Friedmann and McMichael (1989) identified one of the defining characteristics of the settler-colonial food regime (1870-1914) as the development of the European settler commercial farm, which was dependent on exports of staple foods such as wheat to world markets. In the context of South

[22] Friedmann (2016:672) disagrees with McMichael (2003), arguing that the idea of a 'corporate food regime' is 'elusive and one dimensional' because it superficially implies a unified corporate agenda; and that capital is now completely unregulated in the 'free market'. She argues here that the rise of the power of corporates was a feature of the second food regime so it is unclear what is markedly different, and while there could be a new constellation of inter-state relations and power underpinning the new rules for capital, as yet it remains undefined.

Africa, a British colony until 1910, this food regime period was indeed defined by exports, but of a different kind. As a colony with recently-discovered reserves of gold and diamonds, the accumulation patterns of capital were driven by the mining industry, which created consumer demand for staple foods such as wheat and maize. To meet the accumulation needs of the growing mining sector and, tied to it, commercial agriculture, the state actively organised the dispossession of land which pushed the native population into 'reserves' of cheap migrant labour to feed these industries. It was here that the commercial European settler farm was created, to be nurtured by the state for many decades onwards.

The earliest Dutch settlers arriving at the Cape in the seventeenth century brought wheat to South African shores. As early as 1826, the state began to restrict foreign wheat and flour imports in order to protect and nurture local wheat production. Wheat production stretched beyond the Western Cape to the Orange Free State as the demand for bread increased rapidly amongst the growing white population, with the discovery of diamonds (1867), the discovery of gold (1880s) and the growth of towns and transport routes.

A defining characteristic of this period in South African history is the dispossession of land and subsequent forced proletarianisation of South Africa's black majority, which continued and heightened under apartheid and created massive distortions in terms of land ownership and wealth skewed in favour of the white population of South Africa. The requirement for cheap labour in the mining and agriculture sectors put into motion South Africa's migrant wage labour system through violent, state-organised dispossession of land.

In the 1890s, soon after the discovery of diamonds and gold, European settler farmers in South Africa faced competition from imports and from successful African farmers who supplied food at lower prices. The expansion of mining had created growing domestic demand and African farmers thrived. African farmers had productivity advantages over large European-owned farms due to their skills, local knowledge and use of extended-family labour, while the large settler farms were inefficient with poor profitability and low wages (Deininger and Binswanger 1995; Piesse et al. 2005).[23]

The Native Affairs Commission was concerned that African farmers were becoming too independent. In addition, the United Party argued that national economic growth required cheap labour to exploit for mining and commercial farming, and local productivity of farms owned by native Africans was seen as a barrier (Piesse et al. 2005). This was the beginning of the long history of violent land dispossession which proletarianised the African majority and 'from which land in South Africa derives its powerful symbolic charge' (Bernstein 2008:5). On the one hand, the state formed agricultural institutions which discriminated against black farmers by preventing them from accessing both resources and markets; on the other hand, reserves (later known as 'homelands') were introduced to create an artificial land shortage in order to force African farmers into wage labour (Piesse et al. 2005; Bundy 1979).

With the mining sector pushing for reduced wage levels, new laws were instated in the 1890s, including the compulsory registration of all black tenants residing on 'white farms' (1892), a

[23] Despite efforts to restrict African farmers, including petitions by struggling European farmers, African farmers were successfully purchasing large tracts of land in the late nineteenth century and winning prizes at agricultural shows (Deininger and Binswanger 1995; Piesse et al. 2005). 'Indigenous farmers were so successful that by 1860, over 83 per cent of the white-owned land was farmed by African tenants' (Piesse et al. 2005:198). In the KwaZulu Natal province, the output of African farmers grew by 250 per cent between 1867 and 1894, and mean capita output doubled over the same period (Lenta 1983, in Piesse et al. 2005:198).

restriction of five tenants per farm with newly-established Native Commissions to enforce the law (1895), and a license fee for each tenant (1899). To ensure the flow of surplus labour for European agriculture and mining after one generation, the Glen Grey Act of 1894 was introduced to address 'overpopulation' in the reserves by restricting farm sizes, levying labour tax on men in the reserves, and banning the sale, subdivision or rental of land in reserves (Deininger and Binswanger 1995:501). The restriction of land rights by European settlers created reserves too small to support independent African agriculture, pushing African farmers into tenant farming and into wage labour. By 1904, of the 900,000 Africans in the Transvaal, only 14 per cent farmed their own land and almost 50 per cent were tenants on European-owned land (Ibid.).

As early as 1904 and 1907, the Agricultural Development Acts provided European farmers with access to cheap credit and marketing assistance, consequently increasing European farm sizes between 1890 and 1909 more than six fold (Stanwix 2012). Later, under the Co-operative Societies Act of 1922 and 1939, the Land and Agricultural Bank supported white farmers by securing their input supply and marketing services. Masters and Servants Laws (1911 and 1936) restricted the occupational mobility of Africans, while the pass laws from 1922 restricted the physical mobility of Africans into 'white' urban areas.

The Land Bank Act of 1912, Natives' Land Act of 1913 and the Land Settlement Act of 1912[24] (settlement of state-owned land by white farmers) consolidated existing racial discrimination in terms of access to land. The Natives' Land Act was the basis of the country's future policy of apartheid (Walker 1991). Africans could only farm in the reserves which were 7.9 per cent of the

[24] These Land Acts and the Administration Act of 1927, and subsequent Proclamations in terms of these acts in the 1960s, served to control the form of land access in the reserves and 'co-opt traditional chieftainship systems into structures of the state and cement the ruling interpretation of 'traditional' tenure systems in law' (Vink and Kirsten 2000:8).

country's land, prevented Africans from purchasing land from whites, and banned share-cropping and cash rent by Africans. Formerly independent farmers gave up their equipment and went into migrant wage labour[25], reducing African farming to subsistence level, and degrading the reserves to "dormitories' for a cheap African labour force' (Deininger and Binswanger 1995:510).

Industrial protection for settler European farmers

The year 1914 marked the end of the settler-colonial food regime, when many countries were gaining independence from colonial rule, and the beginning of the world wars. The period of time between the first and second food regimes is marked by a transitional period in which steadily growing protectionism and collective organisation of agriculture is recorded around the world and in South Africa, as described below with a focus on wheat and bread.

By 1910, the year South Africa gained its independence from British colonial rule, half of the wheat needed for consumption in South Africa was still imported, and concern about the reliability of food supplies and local self-sufficiency led to calls for increased protection and support for local wheat agriculture (Stanwix 2012). A 1926 government report (BTI 1926:12, in Stanwix 2012:7) called protection for agriculture a 'necessary evil' for development and self-sufficiency. In 1930 and 1931 the government passed Acts restricting wheat imports and meal and flour imports respectively.[26]

[25] For example, between 1875 and 1925, in a village in the reserves of the Eastern Cape, the population dependent on agriculture more than doubled, but sales dropped to one quarter of the previous level per family. Due to maintenance costs, ploughing was neglected and female cultivars had to revert back to hoeing. The village became 'a structural food deficit area', with 90 per cent of total household expenditure spent on basic necessities, and high levels of malnutrition. Women became the buffers in this case, with 54 per cent of the male population absent and forced into migrant wage labour (Wolpe 1972).

[26] This encouraged local production, doubling it from 200,000 tonnes per year since 1921 to 1931-1936 (Abstract of Agricultural Statistics 1958, in Stanwix 2012:7).

Wheat farmers began to cooperate with each other to improve efficiency and reduce risk. In the Swartland (an area in the Western Cape, which is a major wheat growing area), farmers formed a cooperative called Wesgraan in 1912 in order to pool resources, equipment and promote sales. Later, in 1920, they founded Bokomo, the first milling company of its kind to mill the wheat of members and give farmers 'some control over their product and its price once it had left the farm gate' (Stanwix 2012:7). At the end of 1930, dissatisfied with low and fluctuating prices which they attributed to market speculation, wheat farmers involved with Wesgraan and Bokomo established Suid-Afrikaanse Sentrale Ko-operatiewe Graanmaatskappy Beperk (Sasko[27]), a central marketing cooperative in order to sell wheat throughout the country, consolidate production and stabilise the wheat price (Ibid.:8).

In the early 1930s, wheat farmers lobbied for more state support, resulting in the 1935 establishment of the Wheat Industry Control Board (Wheat Board) which would regulate wheat and flour imports. This state involvement was echoed in other countries as a response to the Depression and droughts in the United States, Australia and Africa (Groenewald 2000; Vink 2012, in Stanwix 2012:8). Yet the 'Magna Carta' of agriculture in South Africa was the passing of the state legislation – the 1937 Marketing Act – 'one of the most controversial and far-reaching pieces of legislation in South African Agricultural history', which extended into all aspects of agriculture (SA 1991:10392, in Stanwix 2012:8)[28].

Supporters of the Marketing Act argued that the Act would use available information on supply and demand to regulate and stabilise supply and demand and hence, prices. Those against the Marketing Act of 1937 argued that in order to benefit producers, consumers

[27] Which later evolved to become one of the current bread giants, Sasko.
[28] The 1937 Marketing Act was amended to the Marketing Act, No.59 of 1968 (Vink and Kirsten 2000).

would be burdened with supporting the domestic price, and the ability of the Marketing Council to have sufficient foresight and neutrality to predict supply and demand and benefit the population was called into question (Tinley 1940). Prophetically, others opposing the act argued that it would lead to the growth of an agricultural monopoly, increase prices to consumers, incur heavy losses to the state and restrict opportunities to non-whites (Richards 1936:482; Davis 1931 in Groenewald 2000). Further, Richards (1936:503) argued that real power would lie with the marketing board, which consisted mostly of producers, as a powerful lobby group resulting in the form of 'bureaucratic, despotic and sectional control'.

However, during the interwar period, 'poor whiteism' was an issue identified by the Carnegie Commission (1932) which reported that one in six whites were 'very poor', increasing the push for national welfare through the extension of state control (Stanwix 2012:9). The single central body was set to 'rationalise the chain' and coordinate and set prices. The 1937 Act was instated and agricultural policy and agricultural marketing became synonymous (Vink and Kirsten 2000). By 1976, twenty-three marketing boards were tasked with regulating more than 90 per cent of South Africa's agricultural inputs (Kirsten et al. 1994, in Stanwix 2012:8).

By 1938, the Wheat Board controlled the import and export of wheat and wheat products. It prohibited the sale of wheat to any person other than the Board and its agents, prohibited the sale of wheat, flour, and bread for prices other than those fixed by the board and enforced restricted registration of millers and bakers. The Wheat Board even regulated the size of bakers' ovens. This was the most extensive control over any production chain in the country's history and it lasted 59 years (Stanwix 2012).

The Wheat Board was tasked with protecting 'not only the farmer, the miller and the baker, but also the consumer' (Wheat Board 1938:6, in Stanwix 2012:9). The prices of wheat were set for white farmers, and for millers, and the production on bread, including the quality of bread, was regulated. African farmers were excluded from access to most markets for farm commodities. These Acts also specifically favoured large-scale farmers and agricultural cooperatives as the agents of relevant single-channel, fixed-price schemes such as the Wheat Board. These agricultural cooperatives functioned as regional monopolies and became very powerful (Vink and Kirsten 2000:9). By 1940, as a result of rises in input costs, the subsidy to wheat farmers was doubled with the state now bearing half of all input costs (Wheat Board 1941, in Stanwix 2012:10).

The Second World War resulted in a dramatic increase in the cost of living, especially affecting the standard of living of black workers and peasants. The cost of staple foods rose by 91 per cent between 1939 and 1944 (Walshe 1970, in Walker 1991:70). The rising cost of living was further aggravated by periodic shortages in basic foodstuffs, partly due to profiteering that created artificial shortages and pushed up food prices. Black wages were grossly inadequate, to the extent that the average black family income was far less than the amount of money required for minimum essentials. This resulted in appalling malnutrition amongst African adults and children alike, with one study indicating that over 40 per cent of African schoolchildren in Durban were suffering from 'clinical stages' of malnutrition (Walker 1991:71).

The acute poverty facing the African majority was accompanied by an upsurge of discontent and resistance, with African women playing a significant role. The food crisis was a common issue that mobilised township women, who left their traditional place as caregivers feeding the household to enter the political terrain. As Walker (1991:83) argues, these were 'the beginnings of the growth of

political consciousness among previously isolated black housewives and women workers'. Various community and consumer organisations were established, including the People's Food Council, Women's Food Committee, the Consumer Vigilance Council and the League against Fascism and War. These organisations centred their demands on the cost and shortage of food, organising protest meetings, street marches, cooperative food clubs, boycotts and 'food raids' on firms engaging in profiteering (Walker 1991).

With the post-war elections approaching, organisations such as the Women's Food Committee in Cape Town began to shift their focus to the wider struggle for full political recognition and social rights for the black majority. This broader struggle was seen as inseparable from the food issue: 'Today we fight for food, tomorrow for the vote and then for freedom for all' (1946); 'Whoever controlled the key of the food cupboard [the vote] controlled the food' (1948) (Walker 1991:83).

Frustration over high food prices also extended to the wealthier white minority who had the vote, so that food affordability and stability became a central issue facing the United Party. Added to this frustration, after the war had ended, the British Ministry of Food recommended that additional restrictions on bread and wheat products[29] (SA 1946, in Stanwix 2012:10). Since bread was not even rationed during the war, these measures were seen as extreme. Discontent over this 'rationing of the 'staff of life" and the growing migration of black workers into urban areas troubled many white South Africans (Beinart 2001:137).

[29] 'The sieving of meal types 1 and 2 was forbidden, thus no biscuits or cakes could be made, and were even outlawed in homes. Hotels were forbidden to sell toast, and in urban areas, individuals were not allowed to purchase more than eight ounces of bread or six ounces of wheat meal daily' (Wheat Board 1946, in Stanwix 2012:11). Avoiding wastage and reducing wheat consumption was encouraged by the press, radio and films (Tinley 1954). The use of bread between 3pm and 4am was forbidden and bread could not be sold on Wednesdays (Stultz 1974, in Stanwix 2012:11).

In 1948, the National Party's political campaign centred on consumer welfare and appealed to the farming constituency and poor whites by promising support for farmers and the protection of white jobs (NP 1948, in Stanwix 2012:12). After its marginal victory, a National Party pamphlet highlighted the importance of subsidised bread to gain political support from workers: 'The National Party takes care of the worker. Here is the proof: there is bread, white bread, brown bread, that takes care of workers health. To keep the price of bread low for our workers, the National Party pays a subsidy out of state funds' (SA 1948a:358, in Stanwix 2012:12). As reflected in data on increasing bread consumption, bringing back white bread (discussed below) was one of the ways in which the National Party appealed to the white working class vote.

The surplus food regime: apartheid paternalism and the growth of the bread monopolies in South Africa (1948- 1973[30])

The post-war food regime (1945-1973) under US hegemony saw the international state system extend to newly-independent states in former colonies, including South Africa (Friedmann and McMichael 1989). The rules for this regime, established by the US, 'created a new pattern of intensely national regulation' (Friedmann 1993:32). Subsequently, agricultural production and productivity were spurred by industrial protection and price controls in states around the world. The industrialisation of agriculture was advanced, with increasing mechanisation and chemicalisation of the processes of farming, which was pushed by agri-input corporations (McMichael 2009).

[30] Although the rule of the National Party during apartheid only continued until 1994, the impact of the global financial crisis and the OPEC oil crisis in 1973 spelled the end of the ability of the state to sustain its paternalist subsidisation of all nodes in the wheat-to-bread commodity chain, including the final industrial bread loaf to the consumer.

As Friedmann (1993:31) explains, 'out of this web of practices emerged a stable pattern of production and power that lasted for two and a half decades […] The rules defining the food regime gave priority to national regulation, and authorized both import controls and export subsidies necessary to manage national farm programmes'. These measures gave way to chronic surpluses in countries such as the US, and most countries in the global south became importers of this surplus grain. In the case of South Africa, however, through heavy protectionist policies, the apartheid state in appealing to its white voting base, managed to create national self-sufficiency in wheat, including cases where the South African state dumped its surplus wheat on the world market.

After the National Party came into power in 1948, it withdrew the restrictions on bread, causing wheat consumption to rise rapidly. The Wheat Board guaranteed farmers a fixed price for their wheat. This eliminated price risks and marketing concerns. Farmers would deliver their wheat to a local cooperative that was state appointed as an agent of the Wheat Board. Through restrictive registration, the Wheat Board created an environment that strengthened the monopoly power and profits of registered millers and bakers (Samuels 1947, in Groenewald 2000:167).

By the late 1940s, the Wheat Board actively consolidated the milling industry by closing smaller mills and bakeries in the name of efficiency. The state would guarantee large bakeries the right to an area as their exclusive market for the sale of bread. For example, Sasko, a large, heavily subsidised bakery, would be guaranteed the right to sell in an area without any other competition, based on a state calculation of the capacity of Sasko's ovens, and the size of the population in that area (Interview,

Moolman, 2011). This shifted the bias towards larger bakeries which were easier to monitor in terms of regulations around the standardisation of industrial bread, including its mass.[31]

State regulation in agricultural commodity chains grew. The number of control boards increased from seven in 1940 to seventeen in 1969, to twenty-two in 1980, and the regulatory powers afforded to these control boards also increased (Kirsten and Van Zyl 1996, in Groenewald 2000:167). Monopoly extension and monopolising rigidities became inevitable because all the boards operating one-channel schemes were statutory monopolies. They had no competitive pressures to encourage improved performance and efficiency (Ibid.:168).

In 1946, further concentration occurred when the cooperatives and commodity organisations integrated with the provincial farmers' unions in what the South African Agricultural Union (SAAU) called its 'United Front' (SAAU 1981:115-6, in Bernstein 2004:7). This consolidated the political bloc of organised agriculture and cooperatives with the National Party.

Using the Wheat Board the Marketing Act protected white farmers, and on the other end of the commodity chain, the bread subsidy satisfied white consumers, all the while favouring the concentration of power along the chain (Stanwix 2012:15). This 'balancing act', as then Prime-Minister D. F. Malan called it, 'assures economic prices for farmers produce, and brings agricultural products to the consumer at reasonable prices […] National Nutrition must be priority number one

[31] *Trade metrology* is a process used to regulate the mass of bread. Since bread was subsidised (the 800g loaf) it was important that bakers produced bread with sufficient wheat. To monitor and regulate the mass of bread (wheat/protein content), the Wheat Board will put a loaf in an incinerator from a batch at a plant bakery, burn it and weigh the ash which should be a certain percentage of the weight of bread, relating to the protein content (Interview, Moolman, 2011).

[...] No government ever spent so much money in order to reduce costs to the consumer' (Malan 1953:26 in Stanwix 2012:17).

The National Party's Minister of Agriculture removed all wartime restrictions on bread and flour and introduced a bread subsidy on 1 November 1948. The first bread subsidy paid by the National Party was almost two thirds of the annual agricultural subsidy under the Marketing Act, because of an increase in bread and wheat consumption by one third in 1948/9 compared to previous years. Between 1947 and 1960, the bread subsidy rose to 3.5 per cent of the national budget (Moll 1983, in Stanwix 2012:18). Bread became a significant fiscal priority for the National Party, and remained a source of political capital long after its victory (Ibid.).

In previous times, white bread was seen by black South Africans as a novelty, but this was beginning to change (Abrahams 1946:63, in Stanwix 2012:17). Bread consumption increased not only because of the removal of wartime restrictions, but also because of increased bread consumption amongst the black population who, by 1946, were the majority of the population in urban centres in South Africa. As the price of maize meal began to rise, subsidised bread became a more affordable option for black South Africans.

On the grounds that the black population was accessing the 'cheapest bread in the world' which was never the 'apartheid vision', the Minister of Finance in 1953 proposed a decrease in the bread subsidy for white and brown bread[32]. He supported his argument for an increase in the price of

[32] The National Party had mixed reactions to the increase in the number of black consumers eating subsidised bread. Some wished to terminate the bread subsidy and 'prevent the development of the habit of many black people eating bread instead of maize' (Stanwix 2012:18). However, this was not possible because the subsidy appealed to the party's urbanising white constituency, for whom bread was a staple food, and to their white commercial farmer base.

bread, patronisingly stating 'the government should bring it home to the non-European that mealie porridge is his national diet and that he must make use of it' (Stanwix 2012:19).

Angry opposition mounted against the proposed bread price increase. Poverty amongst the black majority was still acute, with a 1951 study in Johannesburg revealing that an astounding 87 per cent of African household income was spent on food alone (Wix 1951, in Walker 1991:72). On the ground, the Food Committee network in Cape Town was reactivated under the leadership of Ray Alexander, and arranged to meet with the Minister of Finance to protest against the bread price increase (Walker 1991). In Parliament, Helen Suzman, argued, 'Bread to the poor is not simply an item of diet, it is quite obviously a major part of the staple diet of the poor [...] You are putting up the price of bread and forcing them [black South Africans] to carry the whole economy on their backs.' (SA 1953:659, in Stanwix 2012:19). Resistance to the planned decreases in the bread subsidy successfully resulted in the abandonment of the proposal, but these proposals did highlight the government sentiment that funding black consumption was seen as expensive and unnecessary.

Concentration and mechanisation of the wheat-to-bread commodity chain

Post-war there were large increases in subsidies to white farmers for 'budgetary transfer for disaster relief, irrigation infrastructure water subsidies, research, and indirect subsidies through price, policy, and interest rate subsidies' (Vink and Kirsten 2000:11). Subsidies reached astounding levels, with the National Party spending almost twice as much subsidising about 100,000 white farmers as they spent on the education of more than 10 million Africans in 1967 (Deininger and Binswanger 1995:503). Through these subsidies, the National Party fostered and strengthened the commercial South African agricultural sector and the food markets that were developed around this sector.

Between the post-war period and 1980, agriculture was also characterised by increasing mechanisation of commercial farming, with tractors replacing draught oxen in ploughing. Between 1946 and 1960, the number of tractors increased almost six fold (Ibid.). Simultaneously, there were high rates of 'forced removals from farms and increasing use of temporary or seasonal labour', mostly women and children (Marcus 1989, in Vink and Kirsten 2000:10)[33].

The increase in wheat farm mechanisation led to higher yields, resulting in higher concentration of ownership. Larger, mechanised farms absorbed smaller farms. Farming units decreased from 120,000 in 1950 to 61,000 in 1983, while the total area farmed remained constant (Stanwix 2012:22). Local production increased, fueled by low interest loans from the Land Bank and stable Wheat Board-determined prices that were above world market prices after 1967 (Ibid.).

Throughout this period, the agricultural cooperatives began to strengthen. As sole agents of the Wheat Board, farmer-owned cooperatives became increasingly powerful too, handling all of South Africa's wheat. To increase national storage capacity, the government provided farmer-owned cooperatives with new, heavily subsidised grain silos which meant that instead of being collected and transported in bags, wheat was transported from farms in large vehicles to the silos of local cooperatives (Ibid.).

[33] Not only was temporary or seasonal labour popular (often indentured migrant labour), but under the National Party there was a shift towards the use of prison labour as a cheap way to ease agricultural labour shortage. Instead of deporting workers without passes to the Bantustan (home country), stricter pass laws forced offenders to volunteer for farm labour. This increased the value of farms. Many farmers invested in shares for the construction of new prison outstations that would allow them access to this cheap prison labour. In 1949, a reported 40,000 petty offenders worked on farms (Deininger and Binswanger 1995:501,506).

Following the trend in agriculture, concentration was strengthened further up the commodity chain too. Mechanisation increased in storage, milling and baking, resulting in more concentration, and economies of scale. Despite the increase in wheat production, the number of wheat mills decreased from 120 in 1951, to 66 larger wheat mills in 1974 (SA 1985, in Stanwix 2012:22). By 1985, there were only 50 wheat mills in South Africa. Thirty-one were owned by six milling groups that milled 98 per cent of all wheat (Ibid.).

Despite population growth and an increase in the production of bread, concentration, fostered by the state, was also observed in the baking industry where larger bakeries were buying out smaller ones. Urban bakery numbers decreased from 200 in 1941 to 104 in 1971. In 1985, six groups baked 90 per cent of South Africa's bread. Not only was there horizontal concentration, but also extensive vertical concentration, with millers buying shares in the largest commercial bakeries (SA 1985, in Stanwix 2012:23). A 1976 enquiry into the Marketing Act, although supporting the continuation of controlled marketing, observed that a single organisation controlled some of the biggest wheat mills and warned against overly-restrictive registration (Ibid.).

During this period, members of the Broederbond[34], a secretive Afrikaner nationalist organisation, became increasingly involved in the Wheat Board as well as the South African Agricultural Union. The Wheat Board became no longer just a tool for economic 'rationalisation' but also a tool for the protection of white (largely Afrikaner) commercial farmers who held a consistent majority on the board as well as having some influence of monopolisation of power along the wheat-to-bread chain.

[34] The Broederbond, formed in 1918, was a tiny Afrikaner nationalist organisation. Under the National Party, the Broederbond ('the Afrikaner 'power elite'), a powerful secret society 'was often considered the key decision-making locus behind National Party strategy and government policy' (Bernstein 2004:496).

In several other organs of the state, members of the Broederbond took up influential positions (O'Meara 1977:156, Butler 1998). Comparing Wilkins and Strydom's 1980 list of known Broederbond members against the annual reports of the Wheat Board, Stanwix (2012:24) observes that in the 1940s, of the fourteen members and six advisors there were at most three Broederbond members at any one time, but by 1980, the number of Broederbond members had increased to over half of all members and advisors.

Beyond the surplus regime: financial and political pressure on the state

The National Party was able to appease its two main constituencies through the powers of the Wheat Board. The interests of white commercial farmers were protected by agricultural subsidies, infrastructure and low interest rates, while white consumers' interests were taken care of by the bread subsidy. The National Party also managed to ensure self-sufficiency in wheat production for over twenty years; from 1960 to 1989 (Stanwix 2012:21). However, the state's industrial-bread-machine was very expensive and, with the effects of the global recession and the OPEC oil crisis of 1972/3, it began to unravel. The year 1973 also marked the end of Friedmann and McMichael's periodisation of the surplus food regime.

After the oil crisis, inflation remained above 10 per cent from 1974 onwards and the rand steadily weakened, increasing the prices of inputs (Stanwix 2012:27). The Land Bank could no longer continue to subsidise farmers' interest rates. Farm debt payments became the single largest cost of production in agriculture. In 1988, farmers' debt totaled R13.6 billion; a figure exceeding agriculture's contribution to GDP that year of R9.7 billion (Deininger and Binswanger 1995:512). Even despite high subsidies, some farms were too indebted to be economically viable. As a few

wheat farmers pointed out, the subsidies and the guaranteed entrepreneurial fee of about 25 per cent during apartheid kept many farmers in business who would otherwise have failed (Farmer interviews, 2012). As is discussed in Chapter 5, wheat farmers in South Africa no longer receive any subsidies.

Inevitably, the National Party also began to face increasing financial pressure from its apartheid policy. The extensive bureaucratic state machinery required to manage both the 'segregation of land ownership' and the 'two-track approach to support services' resulted in 'two agricultures'. South Africa had eleven Departments of Agriculture by 1980 (fourteen by 1984) with duplication over control of marketing (Vink and Kirsten 2000:11). Added to this were its self-sufficiency expenses from state-funded organisations (e.g. Sasol and Eskom), expensive homeland policy, funding the Defense Force in conflicts with neighbouring states, and massive spending on policing to repress the increasingly resistant black majority (Marais 2011).

The state faced a 'security crisis' as growing unrest and 'unlawful strikes' shook South Africa in the 1970s and 1980s (Bernstein 2004). The militant Durban strike actions in 1973, Soweto unrest of June 1976 and the violent uprisings during 1985/6 in the form of anti-election campaigns, mass protest rallies and clashes with police were symptomatic of escalating anger and discontent. As Friedman (1981, presentation**)** pointed out, 'Workers who enjoyed access to political power would not have had to pursue their demands in the workplace. They would instead have used their potential political influence to lobby for change. Because this option was not open to them, they chose to voice their protest in the area in which they did have potential power – the economy'.

Black militant unionism linked up with consumer boycotts and drew on the mobilising support of universities and churches. In the 1970s and 1980s, these boycotts, stay-aways and trade sanctions had begun to affect white business, which had started to support a change in the status quo. The international ideology of neoliberalism had also crept in, and the apartheid state had begun to liberalise the domestic economy in the 1980s (discussed below). Marais (2011) argues that deregulation towards the end of apartheid was an attempt to maintain privilege for white business that could not be guaranteed in the transition to democracy. Indeed, the winner in the post-apartheid continuation of neoliberal policy is white conglomerate capital, especially the financial sector and the mineral-energy complex (Marais 2011).

Financial pressure, internal revolt, regional instability and international criticism were beginning to wear down the apartheid state. By the late 1980s, the National Party and the liberation movement, the African National Congress (ANC), were forced into a stalemate (Marias 2011). Both parties realised that they could not win without the country facing long-term conflict and economic decline that would benefit no-one. In 1990, the ANC was legalised and political negotiations began between the National Party and the ANC. The negotiation process was violent and protracted, with the province of KwaZulu Natal at the brink of a civil war before renegotiation and compromise followed.

The process of deregulation

Beginning in the late 1970s, there was a general retreat from apartheid direct state involvement and a shift towards a more deregulated and liberalised economy[35]. Pressure on South African agriculture for the reversal of racial discrimination and price distortions was mounting, and the push for deregulation was influenced by the Thatcher/Reagan era, marked by international ideological growth of free trade and less government interference. The process of deregulation accelerated in the 1990s in the beginning of the transition period.

In the White Paper on Agricultural Policy tabled in 1984, goals included considering the principles of the free market system 'in pursuit of orderly marketing, self-sufficiency in food, and increasing international trade of agricultural products and regional development; incorporating the promotion of development in Southern Africa (i.e. the former homelands) and the rest of Africa (Vink and Kirsten 2000:12).

The Minister of Agriculture appointed the Kaisser Committee of Enquiry into the Marketing Act which concluded that the Marketing Act 'did not satisfactorily achieve its intended goals and objectives' (Groenewald 2000:395). It was incompatible with a free market approach. This led to: the deregulation of marketing in terms of the Marketing Act in agricultural products such as tobacco, maize, and fruit; the liberalisation of price controls; a change in taxation in agriculture; a shift from some budgetary transfers for commercial agriculture to the Department of Agriculture in the

[35] Vink (1993) argues that as early as the late 1970s the financial sector was extensively liberalised following the publication of the de Kock Commission report. As early as the 1970s, the decline in the foreign exchange value of the Rand and in the increased cost of interest on agriculture loans already began to impact farmers.

homelands; and, in 1991, the scrapping of the Land Acts as an attempt to begin the deracialisation of agriculture (Kirsten et al. 2007:13).

Largely due to growing financial pressure, the National Party, after keeping the bread price constant for twenty years, finally decreased the white bread subsidy in the early 1970s. This led to a shift towards the consumption of brown bread. Brown bread consumption increased from 10 per cent of bread consumed in 1948 to more than 70 per cent in 1981 (SA 1985, in Stanwix 2012:25). The brown bread subsidy was decreased later in 1980. Despite the claim that the cheapest bread in the world was in South Africa,[36] these decreases provoked public discontent.

Despite the bread subsidy decreases, the subsidy still took a large chunk of the fiscus, amounting to 69 per cent of the total subsidy for agriculture in 1980/81 (ZAR162,75 million) (Kirsten et al. 1994). In 1984, the government finally did away with the subsidy for white bread completely. 'A percentage of the revenue earned on white bread was then used to subsidise brown bread, although both became more expensive as the subsidy decreased' (Stanwix 2012:27). A 1985 commission of inquiry recommended the removal of the bread subsidy as part of a shift towards a liberalised and 'de-regulated' agricultural sector (SA 1985, in Stanwix 2012:27).

In 1989, after fifty years of subsidisation, it was finally decided that the bread subsidy would be gradually phased out over a three year period, ending completely in 1991. The justification was threefold: 1 – the subsidy was too expensive, 2 – the subsidy had to be removed in light of the broader liberalising reforms, and 3 – the subsidy benefitted those financially well-off more than it benefitted the poor (SA 1992, in Stanwix 2012:31).

[36] A claim found true by Landbouweekblad, although the comparison countries had high currencies.

Bakeries and wheat mills no longer had to be registered with the Wheat Board and the price controls on all wheat products were removed. 'The producer price of wheat remained fixed by the Wheat Board for another five years; however, after 1991, bread could be milled and baked by anyone and sold at the seller's preferred price' (Stanwix 2012:29). A sales tax was levied on white bread which was mostly consumed by white and coloured consumers, while brown bread remained exempt (Ibid.:31). Between 1985 and 1995 the cost of bread increased significantly.

It was alleged in the press and the House of Assembly that wheat farmers benefitted unfairly from the last few years of high bread prices as a result of the National Party's historically biased policies, however, as Stanwix (2012) points out, the farmers were not the ones making large profits. During the same period of ten years, the wheat prices paid to farmers had only increased by 56 per cent, and in some cases, farmers accepted prices below average import prices. Many farmers were also in significant debt, with agricultural debt increasing almost fivefold between 1980 and 1990. Members of the Wheat Board argued, 'It is time for the accusing finger to be pointed in the right place. Somewhere in the chain from the farm gate to the supermarket shelf someone is making money, but it is definitely not the farmer [who] is involved in a continuous struggle against nature' (SA 1991:10358, in Stanwix 2012:32).

The birth of the agro-trader nexus? (1996- present day)

Some scholars have identified what they argue is a new 'corporate food regime' (McMichael 2003). However, I agree with Friedmann (2016) that there may not be enough of a marked difference in the global power arrangements and the rules for capital accumulation to signal the rise of a new food

regime. In the context of the wheat-to-bread chain, for example, the immense growth of the corporate bread giants mostly took place during the surplus food regime period, when the Wheat Board, through fifty-nine years of heavy state regulation, created an environment that encouraged concentration and monopoly power in agricultural cooperatives, milling, baking and other nodes of the commodity chain. The current dominance of these giants is part of a longer period of capital accumulation that began in South Africa almost a century ago and is deeply connected to global geopolitics and processes of capitalist expansion.

As discussed above, deregulation began as early as the 1980s; however, 1996 marks a significant year for setting in motion the processes that have come to shape the current wheat-to-bread commodity chain which I explore in the Chapters 5 and 6 below.

CHAPTER 5

Corporate concentration and new methods of production

Introduction

This chapter is organised around monopolistic, anticompetitive behaviour and strategies of Schumpeterian innovation by different agriculture and agro-food processing economic actors in the industrial bread commodity chain. The two forms of innovation which I explore consist of 'governance' and 'upgrading' strategies in which producers and corporates exercise their market power and leverage related forms of discursive and industrial power resources in order to better position themselves for capital accumulation in the commodity chain. Monopolistic anti-competitive behaviour is noted in many nodes of the chain, with a focused analysis on the case of the bread cartel.

I link these forms of innovation (the 'creative' in 'creative destruction') and anti-competitive behaviour directly to the implications of their exercise on other economic actors in the chain and the resultant power asymmetries, and to the obverse of innovation which is the 'destruction' in Marx's theorisation of 'creative destruction'. Destruction is conceptualised through global value relations and impacts on the sphere of social reproduction.

In this chapter, I focus on the nodes of commercial wheat production, milling, and baking in the commodity chain. This involves the following economic actors: agro-input corporates (machinery and agro-chemicals); commercial wheat producers; flour millers; and industrial bread bakeries. I also

draw on the institutional power resources that these economic actors leverage with different regulatory actors, specifically state departments and international financial institutions.

I begin by looking at corporate concentration in the wheat-to-bread commodity chain, and forms of *anticompetitive behaviour* with a focus on the price-fixing of industrial bread in South Africa. The Schumpeterian innovation that I explore is *new methods of production.* Under *new methods of production*, I analyse the mechanisation of agriculture and, related to it, the zero tillage scenario that has increased the use of agro-chemicals.

Oligopolistic market power in the wheat-to-bread commodity chain

Globally, agro-food commodity chains tend towards high degrees of vertical and horizontal consolidation resulting in a concentration of market power in particular nodes and among particular capital actors. Horizontal concentration occurs when a small number of firms dominate any given node in a commodity chain, while vertical concentration occurs when the same few firms dominate more than one node of the commodity chain (Murphy 2006). The wheat-to-bread commodity chain for industrial bread in South Africa follows this tendency with intense vertical and horizontal concentration both upstream and downstream[37]. It begins with inputs into agriculture, namely wheat seed, fertiliser, farm equipment, fuel, herbicides and pesticides, and, in some advanced cases, agro-tech. Other inputs which are not purchased from corporates are land, labour and production finance. The production node of wheat production is where wheat grain crops are sown, nurtured and harvested. Next, the harvested wheat is stored in silos and then transported to mills. Transport

[37] Upstream in the commodity chain are the inputs into the node of agriculture which include seed, land, chemicals, machinery and fuel. Downstream in the commodity chain are the storage, processing and distribution of commodities which, in the case of bread, include storage, milling, baking and retail.

and logistics are components throughout the chain. The milled wheat (flour) is then transported to bakeries where it is the main ingredient in baked and packaged industrial bread. Lastly, it is transported to retailers and sold to customers. The concentration in this chain is illustrated in Diagram 3, and detailed in the list below.

Concentration in the wheat-to-bread commodity chain in South Africa[38]

2 wheat seed corporates

Sensako (Pty) Ltd and DuPont Pioneer control 100% of local commercial wheat cultivar seed sales. Calculation excludes producers' saved seed which can be planted over a few generations.

3 farm equipment suppliers

Deere & Co, CNH and AGCO supply 49 per cent of farm equipment globally. Locally, Afgri is the main John Deere supplier, supplying 30 per cent of tractors in South Africa.

4 fertiliser corporates

Omnia, Sasol, Yara and Profert control 94 per cent of local fertiliser sales.

4 herbicide/pesticide biotech corporates

ChemChina-Syngenta (merger finalised in 2017), Bayer-Monsanto (merger finalised in 2018), DuPont-Dow (merger finalised in 2017) and BASF control 75 per cent of global supply.

3800 to 4000 commercial wheat producers

These wheat producers supply roughly 45 per cent of national demand.

3 agribusiness corporates in storage

Senwes, Noordwes (NWK) and Afgri control 70 per cent of the total storage capacity for grain nationwide.

4 global wheat trading giants

Archer Daniels Midland, Bunge, Cargill and Louis Dreyfus control 75 to 90 per cent of all commercially traded grain globally. This is significant because the price of locally produced wheat is linked to global prices on the Chicago Board of Trade. The same agribusiness corporates that dominate storage (above) are prominent brokers on SAFEX.

4 milling corporates

Pioneer Foods, Premier Foods, Tiger Foods Pride Milling and Foodcorp control 98 per cent of milled wheat sales in South Africa.

4 industrial bread bakery corporates

Vertical consolidation with the four milling corporates above respectively: Pioneer Foods, Premier Foods, Tiger Brands and Foodcorp control 50 to 60 per cent of domestic bread market.

4 food retail corporates

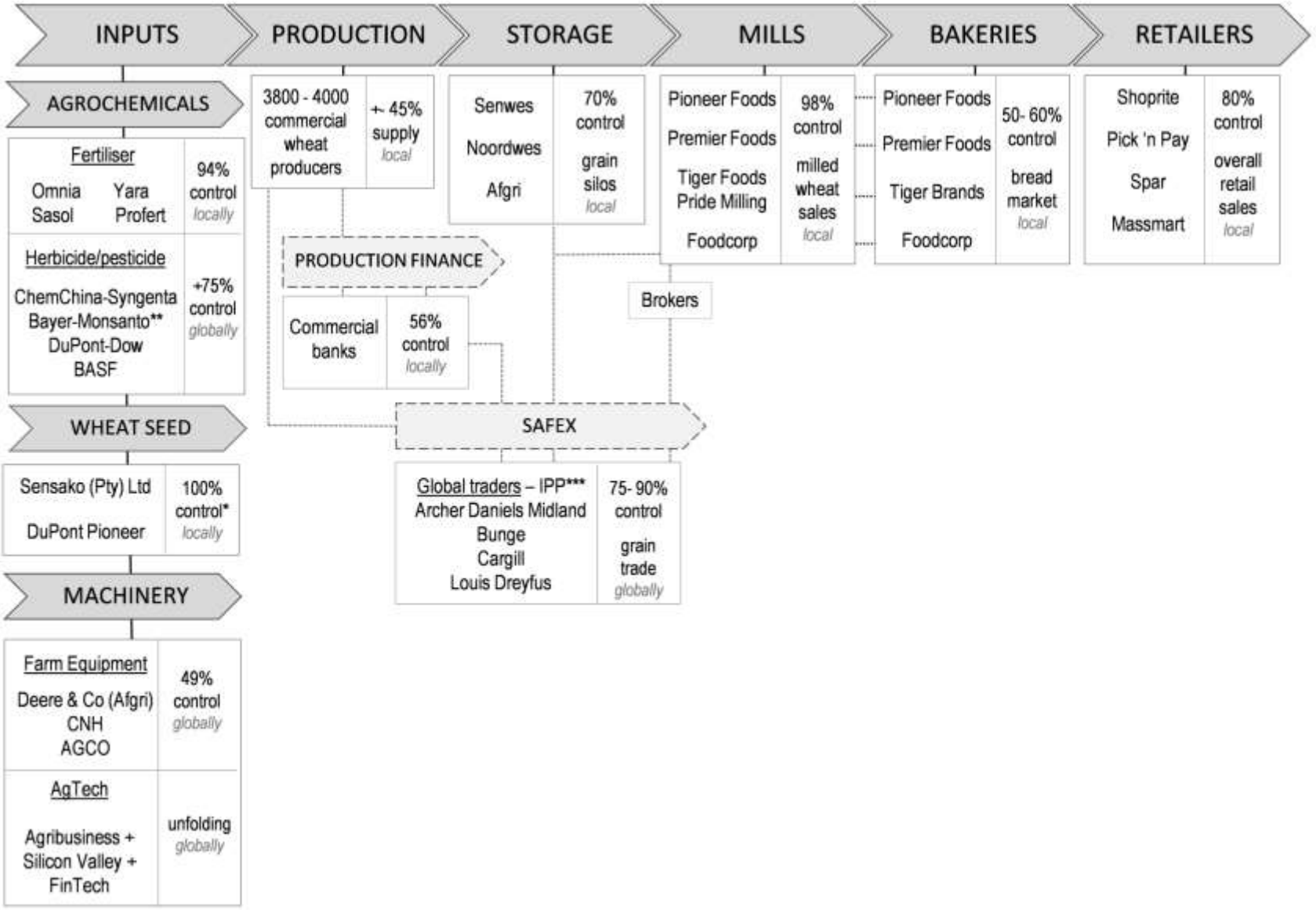
Shoprite, Pick 'n Pay, Spar and Massmart account for 80 per cent of all local retail sales.

[38] Data from Greenberg 2017, BCG-AgFunder 2016, ACBio 2014, ACBio 2015, Frost and Sullivan 2008, Lianos and Katalevsky 2017, PWC 2012.

This account of ownership in the wheat-to-bread chain demonstrates its global scale, despite it being a production chain for a highly localised low-end industrial food product, and the high levels of vertical and horizontal concentration in almost every node of the chain. Every node (except wheat farming) is dominated by four or fewer corporates. In wheat farming, small-scale producers lie outside the system. When one node in a food commodity chain becomes concentrated, the other nodes both upstream and downstream tend to follow (Murphy 2006). In some cases this is because consolidated capital actors tend to organise the flow of production and goods in a more economically efficient manner by opting for consolidated suppliers who can meet their requirements for economies of scale, as is the case with the retail of bread in South Africa. The large retailers who dominate the retail mode typically sell bread (and other processed foods) that are manufactured and supplied on a national scale.

Both spatial dynamics and levels of concentration have an impact on the relations of power in the commodity chain. As Murphy (2006) points out, while consolidation in the commodity chain serves the goal of economic efficiency, this is often at the expense of local patterns of ownership, job creation, and a balanced distribution of value capture in the chain. In the wheat-to-bread commodity chain, oligopolistic power lies in almost every node but there are power asymmetries between different capital actors. Although wheat producers are consolidated in South Africa, the power imbalance in the wheat-to-bread chain tends to benefit the capital actors both upstream and downstream while wheat producers are squeezed as price-takers (demonstrated below). To a large extent small scale producers, millers and bread manufacturers lie outside of this system.

Diagram 3: Concentration in the wheat-to-bread commodity chain in South Africa



Source: own compilation, data extracted from Lianos and Katalevsky 2017, Greenberg 2017, BGG-AgFunder 2016, ACBio 2015, ACBio 2014, PWC 2012, Frost & Sullivan 2008.

A visual illustration of the vertical and horizontal corporate concentration is shown in Diagram 3 which reviews ownership in the wheat-to-bread commodity chain for industrial bread. This pattern is inherent in a global capitalist economy in which agriculture constitutes 65 per cent of all trade (McMichael 2000). Yet McMichael (2000) also cautions scholars not to over-emphasise the degree to which the food system is globalised, since local food production and manufacture account for around 90 per cent of local food consumption (measured on a global scale). Indeed, it is the case that all of the industrial bread in South Africa is manufactured and consumed locally.

However, to halt analysis at this point would be to omit the global spatial flows and dynamics of this chain. As is diagrammatically shown above, South African food is highly globalised. Almost all of the manufactured inputs into the agriculture node of the chain are either imported (farm equipment, agrotech, herbicides, pesticides, fuel), or produced from imported material (fertiliser), or bred locally by transnational corporates (seed). Further, over 50 per cent of the wheat which feeds into this chain is imported, as is the complex machinery in the large bakeries and mills. At the level of finance, the linkages and flows also extend beyond the local, with the domestic price of wheat linked to global market (import parity) prices and the actions of global trading giants, and the shareholder companies of many corporates in the chain are located in the global north.

While the TNCs in this chain are clearly in a position in which they have significant oligopolistic and market power resources, they are also able to use their immense market power to leverage institutional power and, correspondingly, forms of discursive power on a global scale (Quark 2014). Discursive power is frequently deployed by agribusiness TNCs through the projection of moral leadership and legitimate consent-building narratives of sustainability, 'feeding the world' and biodiversity in order to present their market objectives as aligning with the developmentalist

objectives of states, global institutions and NGOs. Drawing on discursive power and direct lobbying, a key example of TNCs leveraging institutional power to appeal to states and international organisations, is on the enforcement of Intellectual Property Rights (IPRs). Monsanto (now Bayer-Monsanto), for example, has secured surplus through state-enforced IPRs on biotech involving key elements of life: DNA and seed. Through lobbying, they have also achieved revisions on world food safety standards that support their genetically-engineered foods, and bans on Monsanto's products have been lifted due to the ruling of the World Trade Organisation (WTO) (McMichael 2000; Bakker and Gill 2003).

Concentration also lends itself to what Clelland (2014:87) terms 'degrees of monopoly': 'The control of any mechanisms that can expand a participant's share of a surplus in variance from a fully competitive market'. Collusion and state protection are central, but so too are advantages of 'scale, productivity, barriers to entry, product innovation and/or design, IPRs, advertising and marketing' and other 'real life actions that capitalists take to secure an advantage. These processes are mechanisms for establishing control over mark-ups in sales prices' (Ibid:87). The competition between capitals in the power-struggle for degrees of monopoly is intrinsic to capitalism. Bernstein (2013) argues that rather than being unique to contemporary neoliberal-era agriculture, the tendencies towards corporate concentration, global divisions of labour, global inequality and increasing international trade are ongoing as part of the reproduction of the capitalist order, but intensifying, as I explore below.

At its most extreme, corporate concentration and – correspondingly – degrees of monopoly and oligopolistic power result in anti-competitive practices, including price-fixing, anti-competitive mergers and acquisitions and predatory pricing. In market-fundamentalist economic theory, the

functioning of the 'free' market relies on fair competition between capitals which is purportedly achievable without institutional or political interference in the economy. However, despite premising competition as the foundation of a functional free market, rather than breaking up pre-existing monopolies that were nurtured until the 1980s, the neoliberal era has been characterised by increasing monopolisation which poses a threat to competition. The global seed/biotech industry is a typical example of this tendency. In 2017 alone, there were two major mergers between four seed giants[39], bringing 75 per cent of the global seed market under the control of five TNCs. Now, with the Monsanto-Bayer merger successfully completed in 2018, four TNCs control the global seed market. This excludes dozens of smaller acquisitions by these seed giants over the last few years.

The key neoliberal institution responsible for handling monopolisation, mergers and other potentially anti-competitive practices is antitrust law. Antitrust law is intended to ensure that 'free' markets are subject to rules around competition, since the self-interested behaviour of non-compliant capitals, through anti-competitive monopolising, collusion, aggressive acquisitions and mergers, risks the basis upon which the market economy is theoretically built. Given that intensifying degrees of monopoly are inherent to capitalism, the purpose of antitrust regulatory bodies then, is as Lewis (2012:11) concludes, 'saving capitalism from capitalists'.

There is a distinction between antitrust law and competition policy. Regulators who focus solely on antitrust law tend to be orthodox free market adherents who see the role of the law as opening the structure of the market to all competitors, with limited room for changing the structure of ownership (Lewis 2012). In cases such as those of the 2017 seed giant mergers, the antitrust legal processes of approval hinge solely on economic objectives such as efficiency, with little regard for

[39] ChemChina and Syngenta have merged, and DuPont and Dow have merged.

the jobs that will be shed, the increased unevenness in North/South and regional growth and other subsequent negative socio-economic impacts (Murphy 2006).

Competition policy regulators depart from this slightly in that they recognise not only the market failure of concentration and abuse of market power, but also the consequent information asymmetry and coordination failures that emerge in these contexts. Further, there are a range of government imperatives that lean on competition policy, meaning that market-based outcomes are not always the only priority (Lewis 2012). In the case of South Africa, for example, issues of racial redress and redistribution have been raised and pinned on the regulatory body, the Competition Commission and the Tribunal (see below). In practice, however, the Competition Commission has been conservative in its approach, in line with its narrow scope, aligning it more closely with antitrust law than the tenets of broader competition policy.

Post-apartheid, there was international pressure, driven by the World Bank and the International Monetary Fund, for the South African government to further liberalise and privatise. During this process, the Competition Commission (in line with the Competition Act 1998) was created and mandated, as a state authority, to investigate and curb anti-competitive business practices and mergers. Such anti-competitive business behaviour includes restrictive horizontal and vertical practices involving illegal arrangements between competitors, suppliers and producers, and the illegal use of dominant market power by large corporates (Competition Commission 1998). On discovery of these practices, it is within the powers of the Competition Commission to issue companies with administrative penalty fines and to enforce behavioural changes and, on occasion, structural changes relating to the market (Rambaruth, interview 2012).

With privatisation, it was expected that the market would enter and mediate competition, pricing through supply and demand, and information exchange. However, the existing oligopolies retained high levels of market power. Shan Rambaruth (2012), the then Commissioner of the Competition Commission, explained: *'The old business relationships and 'old boys club' remained intact in agriculture and the food-processing sector which was characterised by rife and cultural anti-competitive behaviour'*. Many of these corporate actors came to occupy these oligopolistic positions in the economy by successfully leveraging different forms of associational and institutional power resources in order to ensure that they benefitted from apartheid state subsidies, protection and state-facilitated market access and became deeply embedded within business culture in South Africa.

In trying to understand the role of the state and antitrust law in this context of monopolisation, Jessop (2016:2545) assesses:

> *'Laws, judicial decisions, legal innovations, and legal practices… must have some significant, albeit necessarily partial, correspondence to real material interdependencies in the actually existing economy and/or in relations between economic and extra-economic activities… This requires attention to the various mechanisms that operate to select and retain some economic and legal imaginaries, some sets of economic interests, some crisis diagnoses, and some policy paradigms rather than others'*.

Significant here is the way in which the strategy of employing antitrust law appeals to some sets of economic interests in terms of trying to achieve what Jessop (2016:2545) terms 'colliberation', that is 'the continuing trial-and-error task of governing this changing parallelogram of forces through diverse strategies and mechanisms'. Competition policy is part of a 'repertoire of resources' that the state is drawing on to deal with the enduring dominance of white-owned oligopolies which impede

the economic interests of emerging black-owned businesses. Indeed, the Competition Commission has been popular amongst owners of black businesses who see the Commission's institutional role as removing the barriers for them to enter the highly concentrated sectors in the South African economy, which tend to be dominated by large white-owned corporates that were supported under apartheid (Rambaruth, interview 2012).

Further understanding the state's attempt to achieve 'colliberation' through competition policy lies in consumer interests and a crisis diagnosis in this regard. In light of the historically-formed, concentrated and anti-competitive nature of food and agro-processing commodity chains in South Africa, and the fact that it is the poorest households who spend a high percentage of their income on food, the Competition Commission strategically chose to prioritise investigations into different nodes of agro-food chains (Roberts, interview 2012). In these investigations, the commission has found high levels of concentration and various forms of anti-competitive behaviour in the bread, flour, cooking oil, poultry and dairy chains.

In the wheat-to-bread commodity chain alone, numerous anti-competitive cases have been investigated, including seed, fertilizer, baking, milling, grain storage, grain trading and retail. A merger between Pannar Seed and international seed giant Pioneer Hi-Bred (now DuPont Pioneer) was prohibited by the commission but was appealed, while collusion was discovered in the fertiliser market, with fertilisers being the single largest input cost in agricultural production (Competition Commission 2007, 2008).

The Competition Commission also investigated anti-competitive grain storage behaviour involving nineteen grain storage companies, six of which were fined, and a grain trading cartel case involving

Rand Merchant Bank and NWK Limited (Competition Commission 2007). The Competition Commission is currently investigating the retail node. More food is sold to South Africans (just over 50 per cent) through commercial supermarket chain stores than any other country in the world (Reardon et al. 2003). This gives the four retail chains who dominate food retail extraordinary market power to determine prices. Both milling and baking were investigated, and found guilty of collusion.

In December 2006, the Commission received information from an individual shop owner, Imeraan Mukaddam, who alleged that a bread cartel was active in the Western Cape province of South Africa. Subsequently, in 2007, the Competition Commission opened three cases relating to price-fixing and collusion in baking and milling by a 'bread cartel' involving Pioneer Foods (Sasko and Duens Bakeries), Premier Foods (Blue Ribbon Bakery), Tiger Brands (Albany Bakeries), Tiger Foods Pride Milling and Foodcorp (Sunbake Bakeries) (Competition Commission 2007). Initially, the investigation focused on the Western Cape, but it was subsequently escalated to a national scale.

Premier, based on the decision of its then CEO, decided to become a whistle-blower in the case and applied for leniency in terms of the Commission's Corporate Leniency Policy (CLP). It was found that the bread and milling cartel did indeed operate in parts of South Africa and Premier admitted to its involvement (Hoffman, interview 2012). A further leniency application was filed by Tiger Brands, which admitted to its involvement. Subsequently, Foodcorp also admitted to its involvement in the cartel and settled the bread case with the Commission. Pioneer Foods was the only company of the big four which denied participation in price-fixing.

After contested proceedings on 3 February 2010, the Tribunal ruled that Pioneer Foods, despite its denial, had engaged in fixing the price of bread products in the Western Cape province and nationally. The Tribunal imposed a fine of ZAR196 million on Pioneer Foods, which was the maximum penalty it was entitled to issue. This was calculated as a 9.5 per cent penalty on Pioneer Foods' Western Cape turnover for Sasko (their bread brand) in 2006 (ZAR46 million) and a 10 per cent penalty on Sasko's turnover excluding the Western Cape in 2006 (ZAR149,7 million). Tiger Brands agreed to a penalty of almost ZAR99 million (5.7 per cent of its turnover from its bread operations in 2006), and Foodcorp later agreed to pay an administrative penalty of ZAR45,5 million (Competition Commission 2008).

The Competition Commission's investigations into the bread and milling industries found that the 'four major firms dominating the milling of wheat and maize and the production of bread and maize meal were colluding through regular meetings and contact from at least 1994 up to 2007' (Mncube 2013:642). The collusive practices of the cartel were extensive and went beyond only price-fixing. The following is an example of the decisions made by Premier Foods, Pioneer Foods and Tiger Brands at just one of their informal meetings in December 2006:

> *"(1) All three firms would increase the discounted price of toaster bread on February 5, 2007 to realise 4.25 rand per loaf including tax;*
>
> *(2) All three firms would increase the price of the standard loaf of bread by 35 cents per loaf from December 18, 2006;*
>
> *(3) The dates by which the bread price increases were to be implemented would be staggered so as not to be implemented on the same date;*

(4) Discounts given by all three firms to agents in the Paarl area would be capped at 90 cents and 75 cents for agents in the Cape Peninsula;

(5) None of the firms would supply new distributors;

(6) None of the firms would supply each other's former employees; and

(7) None of the firms would make bread deliveries on December 25 and 26, 2006."

(Mncube 2013:642)

These collusive actions are a clear demonstration of the oligopolistic power that the bread giants were able to mobilise in relation to their dominance in the market. The power to set prices and their advantage of scale meant that collusion was possible in specific localities and through specific distribution channels, as well as on a national scale. The advantage of scale also meant that the cartel could artificially create a bread shortage by not delivering bread on certain days. Given that pre-existing barriers to entry are so high, and only four giants supply most of the industrial bread in the country, the threat of competition from smaller bakeries was (and still remains) marginal.

Rakhudu and Kalicharan (2008:5) point out that 'the cartel investigation illustrates that, effectively, despite the deregulation of the wheat commodity chains, the sector is now privately regulated by the major processing firms (in their own interests), and this regulation has replaced the apartheid state's regulation'. Under liberalisation and the opening up of markets, it was expected that increased competition in the free market would lower the cost of consumer goods to the benefit of the poor. Instead, price-fixing cartels have maintained prices above the competitive level and reduced potential competition and supply by creating high barriers to entry, thus forcing out any smaller producers (Ibid.).

Although all of the companies received penalties, some of these penalties were less than the initial amounts recommended by the Commission and consumers never reached full compensation for being overcharged for bread for years. Further, questions still remain regarding how much the companies profiteered from collusion over the past few years at the expense of poor consumers for whom bread is a staple food.

Challenging oligopolistic power through class action: a labour and consumer coalition

To challenge the bread cartel, labour and organised consumers, represented by the Children's Resource Trust Centre (CRC), Black Sash, COSATU, the National Consumer Forum (NCF) and five individual bread consumers, filed a class action lawsuit in the Western Cape against the three companies involved in the bread cartel in November 2010. Through class action, they sought damages for bread consumers in light of the violation of the constitutional right to food and nutrition. Drawing on a combination of institutional, societal coalitive and associational power resources, the labour-consumer coalition sought to challenge the oligopolistic market power of the bread cartel. The ramifications of the class action went far beyond holding the bread cartel to account for the losses of its illegal activity, since it is this case that set the basis for all future class action lawsuits in South Africa.

The legal basis for class action in South Africa was laid out in Section 38 of the Constitution of South Africa which came into full effect as the supreme law in 1997. In 1998, the Law Review Commission served a draft bill to government to regulate class action and make it law as a matter of urgency. However, despite this urgent appeal by the Law Review Commission, the government did not develop procedures and pass the requisite legislation for class action. When the labour-consumer

coalition filed their class action lawsuit against the cartel, the legislative procedures for class action in South Africa did not exist, even though the Constitution laid out the basis for the possibility of class action.

While state no longer plays a direct role in mediating the market, it still maintains limited influence through its exercise of institutional regulatory power. A range of policy instruments and state institutions have emerged in the state's attempt to counter previous imbalances and inequalities in the market, high levels of poverty, 'price asymmetries', and unfair competition in the free market. Some of these policy instruments and institutions fit neatly within a neoliberal mould (e.g. the Competition Act and its enforcers- the Commission and Tribunal) while others fit within the ideological approach of a more developmental or welfare state (for example the social grants system, land restitution).

Although the court made the decision to deny the provisional class action on the basis that the legislative procedures were not developed, the plaintiffs successfully appealed the judgement in May 2011 at the Supreme Court of Appeal[40]. On the basis of this ruling, the procedural requirements for general class actions have now been legislated. The bread case set the basis for all future class action in South Africa, not only in respect of violation or threats of violation of constitutional rights, but also in a general sense, which opens up the opportunity for a wide range of class action lawsuits (Abrahams, interview, 2012).

[40] See Trustees for the time being of Children's Resource Centre Trust and Others v Pioneer Food (Pty) Ltd and Others (050/2012) [2012] ZASCA 182; 2013 (2) SA 213 (SCA); 2013 (3) BCLR 279 (SCA); [2013] 1 All SA 648 (SCA) (29 November 2012).

Indeed, the institutional power resources of consumers and small-scale producers to hold companies accountable through legal means has undoubtedly increased through their ability to act using the Constitution, the Bill of Rights, the Office of the Public Protector, the Consumer Protection Act (CPA) and other consumer protection mechanisms, together with lawyers willing to act on a contingency basis in class actions (Hoffman, interview 2012). Further, the legislated procedures for class action now enable one to bring a class action lawsuit forward on behalf of others, even if one has not been personally affected (Abrahams, interview 2012). This means that public interest litigators can initiate class actions on behalf of groups of people who may not have known that class action was an option or may not have had the resources to initiate a class action.

A key class action case for which the bread case paved the way is the upcoming Tiger Brands listeriosis case, which incidentally involves one of the same corporate giants that was involved in bread price-fixing. The worst listeriosis outbreak in the history of the world, which has claimed 183 lives in South Africa, has been traced back to two Tiger Brands food manufacturing plants in South Africa, where, among other products, Enterprise Polony[41] and Rainbow Chicken were found to be contaminated. Since Tiger Brands products have been revealed as the source, the company shares have slipped, it has lost millions of rands' worth of sales, and it is facing a pending class action lawsuit. For poor people in South Africa, polony is one of the few affordable ways to access meat.

This incident raises questions about health inspections and the safety of the food that consumers, and especially poor consumers, can access[42]. Murdoch, Marsden and Banks (2000) point out that food quality is directly linked to the issue of power in food commodity chains. This is demonstrated

[41] Polony is a heavily processed cheap sausage containing ground cubes of pork fat, among other ingredients.
[42] As was also found in this study, government inspections of bread and food factories are weak, or non-existent, and while retailer inspections are stricter, it took over a year for them to identify the origin of the listeriosis outbreak.

in the pending listeriosis class action lawsuit in which consumers will mobilise their institutional power resources to make claims against Tiger Brands on the basis of health and food safety. It will be the first class action lawsuit of its kind in South Africa.

While the legal avenue now exists for general class action, there are limits to legal routes of seeking redress for the unscrupulous actions of large corporates. To a large extent, this comes down to a question of resources. As Hoffman (interview, 2012) states, *'It has always been an unequal playing field. The little man is unequally resourced'*. The strength of consumers, workers and economic actors to leverage institutional power resources through law and litigation is very unequal. Economic actors are able to afford expensive legal representation and protracted legal battles, whereas labour and consumers are often unable to do so and tend to rely on pro-bono representation. One of the lawyers, who represented Pioneer during the class action, Schalk Burger (interview, 2012) stated:

> *'Class action won't make a difference in an economy where monopolies always do better. Class Action plays a bigger role. It is a nuisance to business but it won't take them out of business. There will be many settlements. This will generate more litigation. Whether or not that is good for developing countries remains unanswered.'*

This sobering statement reminds us that competition policy and class action are not designed to address the underlying structures which enable the emergence and reproduction of oligopolistic and other forms of market power. While labour and consumers may gain concessions through leveraging their institutional and associational power in class action lawsuits, the asymmetries in power resources between capital, labour and consumers will remain, albeit contested and malleable. Burger (interview, 2012) also raises the issue of the cost of litigation for the state and the extent to which litigation can severely clog up the already cumbersome legal system.

There is also a challenge with certification and the question of who receives the damages for consumers, since the principle is that the people who suffered must be compensated (Shone, interview, 2012). A second challenge relates to the degree to which the initial procedures at the Competition Commission and Tribunal can limit the potential for a class action. If complainants have not been actively involved in every step of the investigation even at the Competition Commission, then the *'hearing may prejudice claimants because they are then restricted to the narrow interpretation of anti-competitive practices defined or discovered by the Competition Commission for that particular case'* (Abrahams, interview, 2012).

When the bread cartel was found guilty of price-fixing and collusion, unions and their federations, especially COSATU, and consumer organisations including the NCF assumed the role of the voice of the consumer and were outraged on behalf of poor South Africans. In this case, an existing and powerful mass-based organisation represented the voice of consumers as a mass constituency. Yet the interests of workers and consumers are not always aligned when it comes to competition, and are often in direct conflict. While COSATU supported the fining of the bread cartel in the name of competition and consumer protection, it fought against the entrance of Walmart into South Africa because it has visible negative impacts on South African workers due to the influx of cheap Chinese imports. NCF, on the other hand, supported the entrance of Walmart with the assumption that *'competition would lead to lower prices, more innovation and better services'* (Bolani, interview 2012). As Kenny (interview 2012) points out, *'The point of Walmart was that consumers wanted cheaper products which have to be accompanied by a decline in the power of wages. It is reverse Fordism in the sense that cheaper products are then required precisely because wages are declining'*. Ultimately, it is both workers and poor consumers who are squeezed in commodity chains.

The centrality of state welfare in purchasing food, and specifically bread, creates a significant link between the bread value chain, public money and rising bread prices. Poor households spend a large percentage of their household income on food, and much of this household income originates from government social grants. Referring to the price-fixing of bread by the bread cartel, Nkosikhulule Nyembezi (interview, 2012), former spokesperson for Black Sash, explained, *'Public money is directly involved in the increase in bread prices because it is government who provides social grants to people in communities and these grants are mostly used to buy food. An increase in food prices reduces the effectiveness of these transfers'*. When food prices increase, there is less on the table for poor households, but also less to spend on other basic needs such as education, healthcare, shelter and electricity.

Further, as a convenience food, bread is a central component of the diet of school going children which is, in part, supported by state welfare: *'At another level, money coming from government is fed into school feeding schemes which often run on bread and peanut butter for children'* (Nyembezi interview, 2012). Both price (decreasing the amount available to children), and nutrition are concerns in this instance. Solomon (interview, 2012) from the Children's Resource Centre emphasised the right to food as essential for children who are unable to catch up if they are deprived of sufficient nutritious food. Insufficient healthy food impacts on their ability to learn and has long-term effects, including physical and mental stunting. The social function and importance of bread as a staple convenience food and its connection to state welfare for poorer consumers sheds stark light on the issue of compromised nutrition and price-fixing in bread production.

Yet, with plenty of state welfare being spent on bread, it would be amiss not to point out that the state also makes a tremendous amount of income for the fiscus by charging 14 per cent VAT on the

bread of choice of the majority of poor consumers: that is, white 'commodity loaves'. This makes the state the single actor that makes the most money in the wheat to (white) bread value chain and raises questions about the efficacy of state transfers when VAT is charged on staple foods. This has not gone uncontested, with the South African National Consumers Union (SANCU) having lobbied for an extended period of time for VAT exemptions on white bread as a staple food. However, according to Moolman (interview, 2012), *'The treasury calculated that it amounts to billions of rands, so they are tight fisted'*. Of further concern is the fact that since there is no VAT on brown bread, brown loaves should be about 14 per cent cheaper than white loaves, but this is not always the case, and, as Moolman (interview, 2012) points out, *'No one controls it'*, which raises questions around the point in the production network at which value is being captured.

The mechanisation and digitisation of agriculture: innovation in commercial wheat agriculture

For Schumpeter (1942) incessant innovation renders irrelevant previous forms of production, investment and skill that were once ground-breaking, which in turn leads to the devastation of previous forms of manufacture, investment and entire industries. New methods of production are, to relate back to Marx (1867), ways in which capitals innovate and adopt technologically-advanced means of production that enable these capitals to generate an above-average rate of productivity and profitability. In global commercial agriculture for grain, innovation stems from the invention of new machinery and technologies that shape and transform the methods of production: that is, methods of preparing the soil, and planting, nourishing, protecting and harvesting grain crops. I explore mechanisation and more recently, digitisation and the escalating reliance on agro-chemicals in the South African bread commodity chain and the impact of these on labour and households.

Much of the innovation in commercial agriculture comes from corporate-agribusiness further upstream in the commodity chain which provides agro-inputs such as fertilisers, herbicides, pesticides, seeds and machinery. The introduction of new methods of production through these inputs into agriculture transforms the processes of producing food through commercial agriculture. In Schumpeterian terms, the 'leaders' of this innovation are the entrepreneurs in input corporate-agribusinesses as well as, to a lesser extent, the large-scale commercial producers who are the early adopters of these technologies. The 'followers' are those who adopt these technologies thereafter in order to compete with the early adopters, while those who do not and, in most cases, are unable to adopt these new forms of production eventually cannot compete on a commercial scale. The pressure to adopt new technologies in large-scale commercial grain agriculture is intense because of the remarkable extent to which these technologies increase productivity.[43]

In agriculture, mechanisation is the process of using progressively more advanced agricultural machinery in order to increase productivity. The process of mechanising agriculture has been continuing for centuries, with new innovations transforming old technologies and processes of farming, for example the progression from hand planting, to using a hoe to break up the soil, to using a donkey-drawn plough. More recently digitisation is transforming the new methods of production in commercial agriculture. Digitisation is the process of incorporating digital forms of technology into agricultural machinery and the processes of planting, maintaining and harvesting crops (explained further below).

[43] In the case of wheat agriculture, productivity refers to yield (the amount of grain per tonne that can be produced per hectare of a planted crop) and the ability to plant and harvest increasing numbers of hectares of wheat.

Within the wheat-to-bread commodity chain in South Africa, wheat producers reported being squeezed both as 'price takers' by powerful agri-input capital upstream, as well as at the point of sale where powerful agro-food capital (specifically millers) were not paying them sufficiently for the quality of their wheat. These relations of power between producer capital and agri-input capital have been shifting through the process of mechanisation, from using the steel plough, to combine harvesters using minimum tillage methods of growing, and now, to precision farming.

Wheat producers who were interviewed explained that their increased input costs were as a result of the progression from monoculture crops, relying on a diesel-heavy ploughing method that was damaging the soil, to the crop rotation system of minimum tillage, accompanied by the heavy use of fertilisers and chemicals around 1993. Wheat producer Richard Grobler (interview, 2012) described his experience of this process:

> *'Before there were ploughs to plant a new surface. This messed up the soil constitution. So we moved to chisel ploughs that grip deeply to scratch in the ground. You can get quite aggressive clods. There would be up to seven tractors running. Diesel was cheap then. The progression had to happen. With minimal tillage the seed and fertiliser are attached. The press then pushes it in. This came about also because of the advent of chemical weed control. In the old days guys had to chuck weeds underneath. Now there is Roundup. We are hooked on chemicals and the bill has gone up tremendously. The progression made us so dependent on chemicals and fertilisers because we had to stop using so much diesel. Input costs are a huge issue. We are very mechanised. The combines are over 2 million rand. The costs of inputs are a double-edged sword because we are increasingly relying on them given the chosen minimum tillage scenario.'*
>
> (Grobler, interview 2012)

From this description, it is clear that the new method of production with regards to machinery has been accompanied by a reliance on agro-chemicals and increased costs. South African commercial wheat producers are becoming more dependent on agribusiness-corporates upstream in order to sustain productivity and profitability to compete with other wheat producers around the world. The new methods of mechanisation and digitisation therefore signal increasing oligopolistic power of agribusiness-corporates over the agriculture node of production in the commodity chain.

While minimum tillage combines are advanced and expensive, incessant innovation has already shifted methods of production to the next frontier. Arguably, the latest and most pivotal innovation in modern global agriculture is precision farming in which mechanisation and digitisation merge[44]. In wheat production 'precision farming' can be described as:

> *'A single person driving a huge $400,000[45] combine burning 200 gallons of fuel daily, guided by computers and GPS satellite navigation, (who) can cover 20 acres an hour, and harvest 8,000 to 10,000 bushels of wheat in a single day'* (Parenti 2011).

The innovation in this new method of production is the use of digital software which includes advanced satellite imagery, drones, GPS (Global Positioning Systems) navigation and intelligent sensors. A commercial wheat producer can use this system to measure the exact nutrient content and water in the ground over his/her entire farmland, as well as offer recommendations on exactly how much fertiliser and irrigation to use, accompanied by an estimation of future wheat yields. In

[44] Combines used for minimum tillage crop rotation also incorporate digital software, including computer screens inside the harvesters that guide the process of harvesting. However precision farming makes use of very advanced software, including drones that are not connected to a harvesting machine.
[45] This is the equivalent of 4.7 million South African Rand or €275,000 at an exchange rate calculation of US $1 being equal to 11.77 South African Rand and €1 being equal to 14.57 South African Rand.

the process of growing wheat, precision farming targets weeds for crop-spraying, instead of using a blanket system for spraying[46]. Although this technology is very costly, it decreases the quantities required, and thereby the costs of agro-input chemicals, including fertilisers, pesticides and herbicides. Further, it offers a significant increase in yield. South African farmer Jozua du Plessis exclusively uses John Deere precision farming equipment for crops including wheat and non-GM (genetically modified) maize, and has reported an extraordinary 40 per cent increase in yield, without heavy reliance on herbicides and pesticides (Uys 2017).

That agrifood corporates do not have homogenous interests (Friedmann 1993) is becoming more apparent as new methods of production emerge. This new method of production could represent the beginnings of a potential shift in the balance of corporate power between input agribusiness-corporates in the favour of farm machinery monopolies such as John Deere, away from the dominance of agro-chemical monopolies. Both the agro-chemical and seed monopolies (e.g. DuPont Pioneer, Monsanto, Cargill) and the agri-machine monopolies such as John Deere, are based in developed countries, mostly in the US. John Deere is the globally dominant transnational corporation (TNC) for the manufacture of mechanised and digitised agri-inputs[47]. It has been listed on the New York Stock Exchange for twenty-three years and currently totals profits of US$1,523.9 million (Fortune 500 2018). The major John Deere factories are all situated in the US, followed by smaller factories in Europe (Germany, Netherlands and France). In Schumpeterian developmentalist terms, then, the entrepreneurs who are the engine of the economy and are able to drive development are based in already-developed countries.

[46] John Deere, the dominant corporate in farming machinery, also recently purchased a Silicon Valley company called Blue River Technology for $305 million. Blue River technology is now incorporating advanced machine learning, which allows computers to learn using previous data, into weed-targeting crop-spraying equipment (Lev-Ram 2017).

[47] Almost all of the commercial wheat producers whom I interviewed were using John Deere tractors and combines to grow wheat.

Although it could decrease reliance on agro-chemical companies, this shift towards precision farming agriculture does not necessarily mean a decreased reliance on agri-input corporates more broadly. Controversially, in the US, John Deere governs the commodity chain through leveraging political power via the US state. John Deere is protected by the Digital Millennium Copyright Act (a 1998 piece of US property rights law) which, in application, prevents producers from modifying the software on their John Deere tractors, and therefore prevents them from undertaking their own repairs (Reilly 2017). This governance strategy creates a monopoly that increases the reliance of agricultural producers on the corporate.

This section, detailing the stages of new methods of production in commercial wheat agriculture in South Africa, has shown that through introducing new methods of production, agri-input corporates are playing an increasingly powerful role in determining the trajectory of wheat production. Below, I explain the impact of this on competition between wheat producers and the consolidation of wheat farms.

Competition and consolidation: commercial wheat producers

South African commercial wheat producers are in a highly competitive environment which is shaped by price in relation to productivity. Since South Africa is a net importer of wheat, the wheat price that South African commercial farmers receive is close to the international price for wheat listed on the Chicago Board of Trade. If a commercial farmer does not realise enough productivity – that is yield per square hectare – relative to the international price, then they have potentially made a loss for that year's harvest (see Chapter 6 on the role of financiers and future derivatives in hedging this

risk). Further, the international exchange on which South African wheat is sold places South African wheat producers in competition with wheat producers in other countries where wheat production is often subsidised (see below).

Commercial producers farming smaller tracts of land (albeit still large-scale), are less likely to afford the new methods of production that large scale famers who have access to finance and newer forms of mechanisation can afford. As wheat producer Fredrik Snyman (interview, 2012) explained: *'There is new technology evolving year on year. It is available but it is pricey and again this links to economies of scale. Not all farmers will be able to achieve that'*. Due to both the capital-intensive nature of wheat agriculture and the need to mechanise continually to remain at the forefront, many wheat producers in South Africa have either gone into debt and left farming, or have shifted production to livestock or other crops, such as maize which is not subject to international pricing movements.

Wheat farmers alternate planting wheat with planting other crops on a year-to-year basis (crop rotation) to keep the soil fertile.[48] Farmers who are reducing the hectares of wheat that they plant in their crop rotation cycle are increasing production in livestock, soy, sunflower, GM maize (which can also be exported as animal feed) and other crops. These enterprises are considered to be lower risk (especially in terms of weather) and more profitable than wheat. NAMC (2009) points out that the process of substituting one farming enterprise for another is difficult because new enterprises require high levels of specific knowledge and investment, and structural changes accompanying the

[48] The average wheat farms comprise of 51% wheat, 40% artificial pastures and 11% fallow in the Swartland area of the Western Cape; 55% maize, 20% wheat, 15% sunflower seed, and 10% pastures and fallow lands in North-western Free State; while in the Eastern Free State farms are highly diversified with wheat comprising about 28% of the average area cultivated (but contributing to 18% of the gross farm income) followed by 18% maize, 21% other cash crop enterprises, 3% sheep, 10% beef, 10% dairy and 20% other enterprises (NAMC 2009). In all three areas GrainSA (2008) notes that reduction in wheat (and even maize) production will likely be turned to pastures and livestock (mostly beef). Farmer 5's (2012) yearly records indicate that in 1972/3 they only grew wheat, but by 2005 wheat disappeared, and was only reintroduced temporarily in 2010 for the purpose of crop rotation. Many farmers now plant wheat every sixth or seventh year only.

process may take several years. The process is often accompanied by suppressed profits, bankruptcies and labour layoffs as the farmer makes the gradual shift.

Andreas Potgieter (interview, 2012) explained the consequence of the loss of wheat producers in a context of capital intensive production: '*It is important to sustain the current guys to keep them there. If they go away you are rarely going to replace them. The cheapest John Deere machine is R2.5 million and you have to replace the machinery. [...] You can't just come in and do it right. You either have to have huge financial backing or you know it so well that the odds are slim'*. Not only is the number of wheat producers in South Africa decreasing, but the remaining wheat farms are increasingly consolidated and the industry is increasingly difficult to enter due to the capital-intensive requirements of new methods of production.

Despite the increase in demand for wheat products locally, wheat farming in South Africa is on the decline. The hectares of wheat that are planted are decreasing while fewer farms are planting wheat because it is high risk and no longer as profitable as other agricultural enterprises. This process has been accompanied by the concentration of land ownership of wheat farms, resulting in a few dominant large-scale farms that are mostly reliant on agro-chemicals and increasingly mechanised.

Continuous mechanisation has had a direct effect on the market power of different horizontally-organised commercial wheat producers in the commodity chain in South Africa. Horizontal integration has occurred, with larger technologically-advanced farms absorbing smaller, more labour-intensive farms. In 1950, the number of wheat farming units peaked at over 120,000 but by 1988, they had already dropped to about 68,000, while the total farmland area planted to wheat remained constant (NDA 1992). By 2013, there were only 3,800 to 4,000 wheat farms remaining (DoAFF

2013a; NDA 2008). Although the total farmland area planted to wheat has also dropped, the remaining 3,800 to 4,000 farms are still producing almost half of South Africa's wheat. This trend of concentration in wheat farming began during the period of the surplus food regime (see Chapter 4). However, without the paternal state support that white-owned commercial wheat producers used to have, and with exposure to international competition, concentration has accelerated in recent years.

There is differentiation within the sector between small-, medium- and large-scale commercial wheat farms in terms of ownership, the value of turnover, and levels of debt. This differentiation reflects the growing trend of inequality *within* commercial agriculture generally. An estimated 51 per cent of farms earn a gross income of below ZAR300,000 per year; 673 enterprises earn over ZAR10 million per year; and eight agribusiness companies have a turnover of over ZAR1 billion per year (Hall 2009). Farmers with the lowest levels of turnover also hold the highest levels of debt.

Destruction: displacement of labour

Innovation through new methods of production has reorganised the power asymmetries between capitals within the wheat-to-bread commodity chain. Significantly, these new methods of production are not only central in (re)organising capital-labour relations in the commodity chain, but are constituted by capital-labour relations. In the case of wheat agriculture, wheat producers made explicit the link between changes in the power of labour and mechanisation, not only as an outcome of mechanisation, but as a central driver behind it. Alongside the trends of mechanisation, digitisation and consolidation is a decrease in the size of the labour force on farms, and the nature of remaining employment on these farms.

In an interview at one of the smaller commercial wheat farms, the wheat producer, Andreas Potgieter (interview, 2012) indicated that he employs more people per hectare because of the smaller size of his less technologically-developed farm: *'The wheat value chain is highly mechanised. They are changing every bit of machinery and so on, but this is not good for a country of big farming because the big guys are swallowing the smaller ones. It puts a third of the workforce out of work. I employ more people per hectare than others'*. The more the concentration of wheat farms, the less employment there is on those farms, and the more new methods of production are progressing[49].

Wheat producers on large commercial wheat farms are increasingly mechanising wheat production to the extent that some 'advanced' wheat producers are almost entirely able to harvest their crops themselves using new methods of production. This was linked to labour unionisation and elaborated by Grobler (interview, 2012): '*Usually grain farming has funny hours; it is a family operation and it is very difficult to fit in with unionised labour; now you just see 'wit boer en groot machine'*[50]*. It is mechanising to the point of him [the farmer] driving it all and the other guys are support staff; part-time or retired drivers. As you mechanise there is less labour opportunity'*.

Several wheat producers whom I interviewed elaborated on the reasons producers were mechanising. Most of the explanations centred less on the issue of competition, although this remained an important factor, and more on concerns with the power of labour. Specifically, wheat producers were reacting to labour legislation that is aimed at protecting the working conditions and

[49] Since most wheat producers were making use of crop rotation methods of production, the wheat planting cycle often alternates with other crops such as maize, clovers (legumous crops that control grass problems), soy, canola and sugar bean in order to keep the soil fertile. Many farmers also add rotational grazing to the cycle, for example cattle can go on after a maize crop (Hardie, interview, 2012). This means that although the labour force used in wheat farming reduces with mechanisation, individual farms still require farm workers more generally, for example for labour-intensive livestock farming.

[50] Afrikaans to English translation: 'white farmer and big machine'.

work security of farm workers; the possibility of labour disruptions and unrest; and the 'political cost' of labour.

Adriaan Hardie (interview, 2012) spoke about the labour legislation in relation to mechanisation: *'The labour legislation is not very employer friendly. It discourages you from employing more people and it is encouraging farmers to invest in more machinery. You get two or three guys and a huge machine rather than twenty people on tractors'*. Labour legislation was seen as a challenge, particularly since South African wheat producers compete with wheat producers in other parts of the developing world where, supposedly, cheap labour is the norm.

For commercial wheat producers, the 'political problem' that labour presented related to both anti-white farmer sentiment[51] and violent labour unrest[52], including the concern that their dry wheat crops could be set alight before they were harvested. One wheat producer pointed towards the political risk that he felt labour issues posed for white wheat producers:

> *'Farmers are thinking of cutting risk as far as labour is concerned. Labour is now a political cost and risk. You may become a political target. One machine can replace forty to eighty workers because of labour inconsistency. [White] farmers can't take the political risk of being seen as anti-anything. There is an extra bad image of farmers. Ministers have reinforced that for the past two decades. This image has put the*

[51] At the time of the interviews, an apartheid-era resistance song referring to fighting white power or domination, 'Dubula iBunu' ('Shoot the Boer') had resurfaced in rallies of an opposition political party, the Economic Freedom Fighters (EFF), causing concern among white producers. Currently, the leading party, the African National Congress (ANC) has taken the decision to look into processes for the expropriation of privately owned land for redistribution without compensation, the potential for which, even at the time of the interviews, was also a primary concern for white producers.

[52] This was at a time where, in the Western Cape province of South Africa, un-unionised casual/seasonal farm workers who worked on grape vineyards for wine and table grapes were protesting about their working conditions – primarily, the poverty wages that they received.

spotlight on. I can't see why it will change now. Politics trumps what is actually necessary to make an industry viable.'

(Potgieter, interview, 2012)

This sentiment was further echoed by Deon Roos (interview, 2012) who linked it to the international trend of moving away from labour-intensive to capital-intensive methods of production:

'Labour is now a problem. The more dependent you are on labour, the more problems you are going to have. The farmers will get machines to do things and workers will lose out. Already there are one million workers off farms in the last fifteen years. But the farms are getting bigger. Small farms are not economical, they get bought. Big farms don't increase their workforce because they can buy expensive harvesting machines. This is an international trend. There is less labour hired by all businesses and it has been replaced by technology and equipment'.

A further sign of consolidation is the use by producers of, not only employer service companies, but also fund management companies. Employer service companies such as SEESA provide labour services to producers. On their website this is described: 'SEESA labour's legal advisors specialise in labour law, protecting your interests as a business owner or employer', including handling retrenchments, legal representation, labour documentation and compliance and disciplinary hearings[53]. Employers pay a monthly retainer fee which gives them access to 'labour lawyers on call, ready to assist you on your premises… to ensure your operations run problem free every day.'

[53] See http://www.seesa.co.za/services/labour-law/

Another example that takes the service a step further than HR functions is a 'fund management' company called Farmsecure Holdings (Pty) Ltd.[54], described as an 'innovative participator throughout the agricultural value chain whose agricultural operations are optimised from 'farm to shelf'[55]. As Grobler (interview, 2012) explained, 'Big farmers pay a management fee to Farmsecure and Farmsecure hires the farm, all the workers and the equipment', effectively as a third party. This suggests a strategy of vertical consolidation by these 'fund management' companies which increases their oligopolistic market power and structural power resources.

It is clear from these interviews that at the centre of the decisions for commercial wheat producers to mechanise and outsource further are the goals of, firstly, reducing the number of workers required in their operations, in order to avoid having to comply with labour legislation (particularly hire-and-fire and overtime, since workers in wheat farming are often fairly skilled and seem to be paid above the minimum wage, according to both unionists and wheat producers), and secondly, the desire to reduce the perceived political risks associated with labour. In this process, local unemployment increases, contributing to what Marx (1996) referred to as the 'reserve army of labour'. With new methods of production driven by agribusiness-corporates, the labour power that was on the wheat farms in South Africa shifts to more skilled labour power elaborate in high-tech factories for digitised machines, which are located in developed countries. This process echoes the broader processes of expansion in commercial agriculture globally, in which capital-labour relations are being re-organised through new methods of production, with increasing market power and consolidation.

[54] Farmsecure Holdings (Pty) Ltd. falls under the Farmsecure Group which is a multi-billion South African Rand Group of businesses operating in Sub-Saharan Africa, whose net profit in 2011 was ZAR100 million.
[55] See http://www.saagri.co.za/farmsecure/?cat=6638

Innovation and corporate concentration in agro-chemicals and seed

Input agribusiness-corporates in seed and agro-chemicals play a central role in the Schumpeterian machine of incessant innovation in commercial agriculture. Innovation in agro-chemicals is linked to the relatively new methods of wheat agriculture in South Africa that use minimum tillage and a crop rotation strategy. This method required the advent of chemical weed control which makes it easier to dispose of weeds, rather than plough them into the ground as with the older methods of production (Grobler, interview, 2012).

Included in the innovations in agri-inputs are genetically modified (GM), genetically engineered plants seed, genetically engineered plants, insecticides, and glyphosate-based herbicides (GBH)[56] that work in tandem with the bio-technology in GM seed to deter or kill pests and weeds that threaten commercial crops, including grains. The global adoption of these biotech crops has been extensive and rapid, making them the fastest adopted crop technology in the history of modern agriculture (ISAAA 2016).

The agro-chemical and seed industry is characterised by high levels of corporate concentration. Three corporates- Monsanto, DuPont Pioneer, and Syngenta- control 55 per cent of the global seed market, while Syngenta, Bayer Corp Science, and BASF control 51 per cent of the global agro-chemicals market (ETC Group 2015, in ACBio 2017:4). Monsanto and Bayer merged in 2018, while Syngenta and ChinaChem, another giant in the industry, merged in 2017, and DuPont merged with Dow Chemical in 2017. The fertiliser industry is dominated by four corporates: Sasol, Nitro, Yara and Omnia. Almost all of the agri-input companies are global multinationals headquartered in the

[56] Glyphosate is the active ingredient in most herbicides, and particularly Monsanto's widely used *Roundup*.

US or Europe, which means that most of the inputs into wheat agriculture in South Africa are imported and therefore prices are subject to global changes in the market and a sensitive currency.

When asked about the main challenges that come with commercial wheat farming in South Africa, wheat producers spoke about the high cost of imported inputs, most of which are supplied by powerful and 'manipulative' agri-input corporates upstream. They argued that these input costs make wheat producers 'price takers'. One of the smaller wheat producers said:

> *'Most economists will tell you that it is merciless because there are no margins for error. It is the same risks as most businesses and an additional risk of weather. We are price takers, not price makers. We are totally at the mercy of the market. Inputs are mostly imported. They are rand and currency sensitive. Fertiliser can increase 40 per cent in one year and this happens regularly. Much of it is determined by the Rand weakening and policy uncertainty. In an industry like agriculture they [farmers] don't want subsidies. The input costs need to be taken away if any emerging[57] farmer is to make it. The costs are higher than for any Australian or US farmer. In every sense, we pay more except on labour. To an extent that is our only price advantage and that will probably be taken away.'*
>
> (Potgieter, interview 2012).

Grobler (interview, 2012) said that he felt as if he was working for the fertiliser, seed and chemical companies. He stated further, *'when you have a good year then the following year all those prices go up. They look at what happened and adjust prices.'* There was a general sense of mistrust among wheat producers around the price-setting behaviour of agro-input corporates which they linked to the potential for these corporates to manipulate the market because of their corporate dominance. It is clear that

[57] 'Emerging farmers' are new commercial black farmers who began farming post-apartheid after the ANC came into power as the ruling party (post-1994).

concentrated global corporates are able to extract value from local agriculture operations by building reliance on their new methods of production.

This market power is embedded within broader institutions, both political and cultural, which validate the application of Intellectual Property Rights (IPRs) (Levy 2008). In this instance, agro-input corporates exercise legal/regulatory power to secure their ability to extract value continually from the use of their innovations in global agriculture through IPRs over the ways in which they have changed the DNA of seeds. For example, Monsanto holds patents that legally prevent a producer from saving seed from GM crops and replanting that seed in an attempt to avoid buying seeds from Monsanto for each generation s/he plants. Monsanto has won in court against farmers who have replanted second-generation GM seeds without paying a fee to Monsanto. One such case is that of Monsanto winning against an Indiana farmer who replanted GM soy seeds for eight generations (Liptak 2013).

One wheat producer (Grobler, interview, 2012) expressed his concern on this issue: *'It's the IPR stranglehold. The technology doesn't worry me as much as the monopoly. The only guys with money for the technology are the big guys and we are in a commercial zone.'* Indeed, the dominance of a few agri-input corporates over the global seed supply is extensive and indicates a tendency towards monopolisation and corporate power over agriculture, as well as a reduction in biodiversity[58].

[58] In 2016, 185.1 million hectares of biotech crops were planted globally, with 54 per cent of these crops planted in nineteen developing countries (ISAAA 2016). This indicates a trend towards the global mono-cropping of particular foods such as maize which could lead to a loss in varieties of maize that are important for biodiversity and could have contained unique traits, for example, for dealing with climate change-induced drought.

Agro-chemicals and GM in relation to wheat and bread

For crops such as soy that are susceptible to weeds rather than insects, GM seeds are accompanied by a herbicide made by Monsanto called Roundup Ready that kills weeds[59] but does not harm the genetically-engineered plants. Crops that are more susceptible to pests include maize, although glyphosate-resistant maize seed is available in cases where weeds are also a problem. These GM crops do not have to be sprayed with pesticide because Bt (*Bacillus thuringiensis)* protein is engineered into the actual seed which makes it produce its own insecticide, making it undesirable for insects to consume.

Supported by a food security narrative which is pushed by agro-input corporates and various state departments and NGOs, GM technology and accompanying GHBs are often seen as a natural scientific progression for 'feeding the world' because of the supposed increase in yields that the innovative technology offers.

Monsanto's (2016) 'Sustainability Report' is an example of how, through public relations spins, this food security narrative has now been broadened to issues of sustainability, human rights, development, biodiversity and mitigating climate change, all framed through the UN Sustainable Development Goals which Monsanto purports to address through its innovations in global 'sustainable' agriculture.

The performance of this moral leadership through shaping discourse and narrative enables agro-input corporates to symbolically align their goals with the interests of the general public, and to

[59] Although increasingly, the weeds that glyphosate is intended to kill are emerging as glyphosate-resistant, leading to higher rates and volumes of GBH application on crops for human consumption (Myers et al. 2016).

lobby political institutions to further their corporate dominance. This reflects the exercise of hegemonic power by agro-input corporates, with the interests of the corporate represented as the natural logic of development, and the interests of all (Levy 2008). Closer examination reveals that proponents who tout the food security narrative disregard the fact that enough food is already produced to feed everybody on the planet and people, predominantly in the global south, are food-insecure and hungry is because they are poor and cannot afford sufficient nutritious food and/or have limited access to food. Further, the claim of increased yields solely due to genetic modification remains questionable, even to some South African GM maize producers. While most producers who were interviewed believed that maize yields had increased (indeed, tripled) because of GM, others contended that the yields were increased over the years because of conventional maize breeding[60] rather than any GM traits (Hardie, interview, 2012).

Wheat is a self-pollinating seed that is more susceptible to early weed-competition, disease and viruses than it is to insects. Although GM wheat is not yet commercially available on the market[61], there are a number of ways in which GM crops and *Roundup Ready* or other GHBs are significant in commercial wheat farming and in industrial bread. First, many wheat producers in South Africa and around the world spray their crops with GHBs. Second, hidden in every loaf of industrial bread in South Africa is GM soy and glyphosates. Third, GM maize crops are the primary crop replacing wheat, resulting in South African millers importing more wheat from the international market, which is subject to limited health inspections.

[60] Conventional plant breeding is a process whereby, for example in the case of wheat, plant scientists select wheat plants with the best traits (for example, high protein content in the grain, high yield, or drought resistant characteristics) and grow them to seed, thereafter cross-breeding them with other wheat plants with desirable traits.
[61] Monsanto's field tests for GM wheat have been conducted, and are continuing, in the UK and the USA.

It is common for wheat producers, following the label guidelines on Monsanto's *Roundup Ready* (or other GBHs) to use these herbicides either before planting feed wheat crops in order to prepare the land and/or pre-harvest in order to kill the weeds growing in-between the wheat plants (van Rooyen 2013). For example, Free State grain producer Danie Slabbert uses 'Roundup [to kill] off any remaining weeds in the wheat, which allows for easier harvesting'[62] (Coleman 2017). This is known as glyphosate desiccation or burn-down treatment.

During a visit to one of the large Premier wheat mills, I observed that wheat seeds are crushed before the bran (outer shell) is removed, meaning that any glyphosate residue that might remain on the bran would end up in the flour. This was confirmed in a follow-up interview discussion with the manager at this mill (Marais, interview 2012). Further, the bran which is then sifted out is used as animal feed, raising concerns about livestock toxicity. One of the managers at a relatively new, smaller mill said that they use a healthier but more expensive technique for separating the bran from the endosperm and germ (the components milled for flour):

> *'We are bringing a new way of milling of wheat compared to current industry. That is our comparative advantage nationally. It is a different way of milling in the sense that you first take the bran off which contains a lot of pesticides and herbicides that get into the wheat flour, and then you do the milling process. That way you get rid of many toxins that would go into the system.'* (Van Dyk, interview, 2012).

The equipment that they are importing for this new milling method is from a US-based company called Satake, which promises a healthier method of milling for the end-consumer. However, the

[62] This is a no-till crop rotation farming system which is an alternative to ploughing since ploughing destroys the composition of soil and leaves the land lying fallow until recovery. The progression to crop rotation by grain producers has resulted in heavy reliance of chemicals, but the alternative of ploughing was also destructive for the environment. Herein lies the dilemma of large-scale, highly competitive industrial agriculture.

industrial bread loaf made by the bread giants uses the economically-efficient but likely harmful way of milling wheat, allowing toxins such as glyphosate to enter flour for human consumption. Further, laboratory tests revealed that all industrial bread in South Africa contains GM soy[63], despite a lack of labelling of basic ingredients, let alone GM ingredients (ACBio 2014). Studies have shown that glyphosate is prevalent in global soybean supply because GM soy is sprayed with *Roundup* (Myers et al. 2016).

Since GHBs[64] are so widely used in global food production for industrial purposes, grave concern about the negative effects of this chemical, and other herbicide and pesticide toxins, on human, animal and environmental health have been raised based on the findings of scientific studies which have been published in peer-reviewed journals (see for example, Schinasi and Leon 2014; Ye et al. 2013; Mesnage et al. 2015; Majewski et al. 2014; Cattani et al. 2014; and see Myers et al. 2016 for a scientific consensus statement[65]). These studies evidence the link between glyphosates and soil damage; contaminated soil, air and water; toxicity and eye-damage in aquatic fish; livestock toxicity; and cancer[66], damage to chromosomes and DNA, kidney failure and respiratory disorders.

[63] Ninety per cent of soy grown in South Africa is GM, of which ninety-three per cent is for feedlots.
[64] Some South African wheat producers use herbicides that are not glyphosate-based, including Syngenta's Gramoxone, which is a trade name for paraquat (Kriel 2017). However these alternatives to GBHs are still highly toxic, if not more toxic. Paraquat, for example, is considered to be *'the most highly acutely toxic herbicide to be marketed over the last 60 years'* (Watts 2011:1) and consequently, it has been banned or disallowed in thirty-two countries.
[65] Drawing on dozens of peer-reviewed scientific studies, a group of scientists (Myers et al. 2016:1) issued a consensus statement which concluded: "(1) GBHs [glyphosate-based herbicides] are the most heavily applied herbicide in the world and usage continues to rise; (2) Worldwide, GBHs often contaminate drinking water sources, precipitation, and air, especially in agricultural regions; (3) The half-life of glyphosate in water and soil is longer than previously recognized; (4) Glyphosate and its metabolites are widely present in the global soybean supply; (5) Human exposures to GBHs are rising; (6) Glyphosate is now authoritatively classified as a probable human carcinogen". Further, they state that the studies on what constitutes a tolerable human intake of glyphosate are based on outdated science, and more research needs to be done on glyphosate toxicity in livestock.
[66] The World Health Organisation's (WHO) International Agency for Research on Cancer (IARC) has also officially labelled glyphosate a probable carcinogen, meaning that in all likelihood, it causes cancer in humans as well as damage to human chromosomes and DNA. Their report also concluded that there is convincing laboratory evidence that glyphosate does cause cancer in animals (Guyton et al. 2015).

Further, producers and farm workers are at even more risk to disease from exposure to glyphosates from the application of GBH. This occupational exposure is linked to higher risk of chronic kidney failure, lymphoma, Parkinson's disease and other serious health conditions among farmers and farm workers (Jayasumana et al. 2015; De Roos et al. 2003; Tanner et al. 2009). The land, water and air surrounding agricultural areas where there is GBH application has been found to be particularly contaminated, and in these rural areas, glyphosates are also linked to possible birth defects in humans and animals (Myers et al. 2016).

It is the case, then, for both consumers of industrial bread in South Africa, and for wheat producers and farm workers, that exposure to glyphosates either through ingestion, inhalation or skin contact poses serious health risks. For consumers who rely on bread as a staple food, this risk is exacerbated. The issue is worsened by the fact that the other staple food in South Africa, maize, is 90 per cent GM. Indeed, South Africa is referred to in media as a 'guinea pig nation' because it is possibly the only country in the world where its staple foods are GM. The GM issue has been the centre of much debate with few topics as divisive as the issue of GM food and herbicides in relation to health and safety.

On the one hand, GMO proponents argue that in the absence of choice due to a lack of affordability, GM food is the best solution for poor countries and their consumers, given that the supposed GMO yield increase is said to increase productivity and supply and therefore decrease prices. During an interview at his office in Pretoria, Jannie de Villiers (2012), the CEO of GrainSA, suggested that people in countries where GMOs have been banned can afford not to complain

about food prices, stating, *'The price doesn't even appear in the European document banning GMOs*[67]*. We are in two different worlds. Beggars can't be choosers'*. In this conception, poor consumers prioritise price, which is reduced if the food is GM, and to that end, do not benefit from the 'luxury' of choice regarding food safety or health.

On the other hand, anti-GMO proponents argue that in more nuanced assessments of food security, poverty and health cannot be divided (Mariam Mayette, ACBio, interview 2012). Here, the safety and nutrition of food is seen as integral to food security, and the developmental goal should be for all consumers to be able to afford safe and healthy food regardless of their class status. Further, Karaan (interview, 2012) pointed towards a lack of awareness and education around the dangers of GMOs, particularly among poor consumers. In part, what compounds this situation is the lack of compliance with GMO labelling and the low levels of internet access and data affordability that would enable poor consumers to access more information on GM food and on the production of their store-bought food in general (Mayette, ACBio, interview 2012).

The result is that poor consumers in countries such as South Africa have little choice but to purchase unsafe food, and the workers and producers of this food also face health risks. The negative health consequences from consuming unsafe and innutritious staple foods for sustenance are experienced and embodied at the level of the household. It is at this level where, in poor households, women struggle to provide sufficient nutritious food for the members of the household and to take care of ill people who so desperately require this nutrition.

[67] This example is offset by the fact that there are also many developing countries where the cultivation and/or import of GMOs has been banned, such as Algeria, Ecuador, Peru and Kenya. However, the same argument is applied by GMO proponents of assessing the need for GMOs *within* countries, with wealthier consumers being able to afford non-GMO food, and poorer consumers having little or no 'luxury' of choice but to purchase what they can afford.

These households are directly linked to agro-input corporates in the global north, not only through labour which is reproduced in the household and fed into the commodity chain, but also through consumers who eat the industrial bread which contains glyphosates and GM soy. The general trajectory of modern agriculture hinges on the new innovative methods of production introduced by agro-input oligopolies in developed countries which enable them to extract surplus value from food commodity chains by squeezing the agriculture node. Strategies to govern these chains in order to maintain these power asymmetries and dependencies include the use of corporate dominance, legal power, political power and legitimising narratives. However, as I explore below, the use of GMOs and GBHs has not gone unchallenged by civil society groups and opposition political parties.

Building resistance: power through policy and human rights

Wheat producers derive associational power from their collective organisation into agricultural unions in South Africa. These include AgriSA which is the biggest agricultural union in South Africa; GrainSA which is the largest association of grain farmers; and other provincial agricultural unions including Agri Wes-Cape and Free State Agriculture. Helliker (2013:12) argues that through agricultural unions, producers continue to have access to the 'corridors of power'. This has led to influence on certain decision-making processes and institutional or regulatory power within the state.

However, not all wheat producers share this view, and there seems to be some tension in the industry between very large commercial farm owners and smaller/medium-sized commercial farm owners. Smaller and medium-sized commercial wheat farm owners are generally more negative about the future of agriculture in South Africa and the influence that organised agriculture has on the state, as well as the benefits of labour legislation and the role of the state's programmes of

transformation. There is consensus, however, that having more successful black commercial producers would benefit all producers because the state would listen to them, and as a class of producers they have shared interests regardless of race.

One farm owner who is negative about the power of organised farmers said *'GrainSA is the largest body of grain farmers. The Minister [of Agriculture] has never attended a meeting'* (Roos, interview, 2012). Andreas Potgieter (interview, 2012) furthered: '*The Minister of Agriculture would rather give speeches that tell farmers that they are rotten than build trust and grow the industry as she is supposed to. It is a contradiction. If there are bad apples then get them out but that is a generalisation.'* He continued, *'In terms of say in government, nothing. We have an influence on being heard but very little sway on the state opinion. At least these organisations make our voice heard and they gave a well-researched opinion. But the policy environment is really a struggle. Government doesn't really worry a lot. That is not the right thing to say.'* This medium-scale farmer seemed to feel that he differs from the dominant voices in organised farming that are 'politically correct'.

On the other hand, one wheat producer (Botha, interview, 2012) who was positive about the collective power of organised producers in terms of influence on the state said:

> *'In South Africa if you [as a farmer] don't belong to an agricultural union, you are lost in my opinion. They are doing things for farmers. If you don't belong you don't have a say anymore. They have an influence on DoA [Department of Agriculture]. Small Grain Centre is working so closely with them; research stations, formulating prices, new cultivars, and so on. There is good cooperation. Farmers do not [have power] as such, but GrainSA speaks for them. The previous CEO of the Chamber of Milling is now the CEO of GrainSA. I trust him as a contact person with DoA and he has a good relationship with them.'*

Another farmer echoed the idea that the state is beginning to place more value on producers:

'*DoA is starting to listen to lobby groups. Ten years ago, they thought farmers were expendable. Mbeki thought we could import everything we need. The message is getting through to some of the think tanks.'* (Hardie, interview, 2012).

One of the areas where the influence of agricultural unions was brought into focus was around the issue of approval of pesticides, herbicides and GMOs. Two different narratives emerged around the strength of the state in this instance, and the role of the union in influencing outcomes of applications made by agro-input corporates for new biotech products.

The African Centre for Biosafety (ACBio), a civil society non-profit research centre, plays an active role in contesting and appealing the approval of GM seeds and herbicides and pesticides that are deemed unsafe. The decision to approve these agro-inputs lies with the Department of Agriculture, Forestry and Fisheries (DoAFF or DoA). Below, Mariam Mayette (interview, 2012) from the centre described this process of approval:

> *'DoA is strong and prosperous. The focus is on yield above all else with the logic that if we grow enough we will feed everyone. Our challenges are resource constraints and accessing information. If an individual or company will run a field trial they must apply to the DoA and submit a biosafety dossier of information to the GM registrar. One condition is public notice in one national newspaper and two local newspapers indicating that there will be this trial. If you miss the newspaper then there is no other way of knowing. Once it is submitted, then they assess the documents. It is always the 'non-confidential version' which is much sanitised and you can't do much with it. Much of the information needed for independent scientific assessment*

is missing. The companies send two versions to the department- a confidential and non-confidential version. The DOA is timeous with dealing with requests for the submissions.'

In Mayette's view, the DoA is efficient at processing industry requests for approval, but not all of the information about the trials that are done with these chemicals and seeds is shared with civil society organisations and the public, which adds to the difficulty of disputing applications. On the other hand, one wheat producer described the DoA as weak and inefficient and described GrainSA's role in pushing approvals for herbicides through the system in view of weak state capacity:

'Down to the micro-level of agriculture, any herbicide released must go through government for trials to be researched. Then it gets stuck in government bureaucracy for a decade. Then the registrar is a new guy. He is not qualified. He didn't want to make a decision. So GrainSA goes 'we can help you' but they [government] have no power. GrainSA has to run them through the processes. There is no capacity. This is just a microcosm of the whole thing which goes to the top.' (Potgieter, interview, 2012).

The process described by Potgieter (interview, 2012) illustrates the influence of GrainSA on the outcome of applications made by agro-input corporates regarding the approval of new biotech products for use in South Africa. For wheat producers, access to these new innovative products is necessary to keep them competitive against their counterparts in other wheat-producing countries. In this regard, the agricultural unions use institutional power to lobby and influence the state on behalf of agro-input corporates to help push applications through successfully. In the process that Mayette (interview, 2012) described, a large part of the challenge that civil society organisations face is that the DoA and agro-input corporates do not disclose all of the information regarding the trials

of new biotech products to the public. This level of secrecy makes it more difficult to challenge applications on the basis that the products are unsafe for humans, animals and/or the environment.

A number of civil society organisations have raised the issue of the toxicity of biotech products (GMOs and GBHs), including African Centre for Biosafety, NO GMO SA, March Against Monsanto *SA* and the *South African Food Sovereignty Campaign*. Some opposition political parties have also taken a stand. In their 2014 Elections Manifesto, the Economic Freedom Fighters (EFF) stated that they would ban GMOs and educate the nation about the dangers of GMOs (EFF 2014). The leader of the Inkatha Freedom Party (IFP) and Member of Parliament Prince Mangosuthu Buthelezi has called for government to launch urgent investigations into the cancerous effects of glyphosates in staple foods. In a press statement, Buthelezi (2016) explained:

> *'Few South Africans are untouched by some form of Cancer in their own family. From the human perspective, the journey through Cancer is traumatic, whether or not it is fatal. From a healthcare perspective, our country's economy is just not equipped to cope with the extent of treatment that will be needed ten or even five years from now.'*

After multiple attempts to try to hold government to account, the IFP joined with the South African Traditional Doctors Union to formally request an investigation by the Office of the Public Prosecutor in December 2015, with a follow-up in February 2016. After receiving no response, with support from the Cancer Association of South Africa (CANSA), they approached the Chairperson and Commissioners of the South African Human Rights Commission (SAHRC) in September 2016 for an urgent investigation, the call for which has also remained unanswered.

Despite the work of civil society organisations and opposition parties, the issue of the toxicity of biotech foods has not gained widespread traction in the public. Most of the contestation appears to remain either at the micro-level of new biotech product approvals or at the level of formal requests to state and human rights bodies rather than a point of mobilisation among consumers and producers. This links to the challenges presented by the 'feeding the world' narrative and accompanying hegemonic power exercised by these corporates. In many cases the demands made by activists around issues relating to health, hunger, environmental degradation and climate change are co-opted by these corporates, and incorporated into 'green' narratives as a means to defuse resistance and the potential for alternatives, which are then disseminated by agro-input corporate PR departments and uncritically championed within traditional institutions (Friedmann 2005).

Conclusion: degrees of monopoly, collusion and new methods of production

Schumpeterian innovations of *new methods of production* in the wheat industry have been driven globally by powerful agro-input corporates based in developed countries. The mechanisation and digitisation of agriculture and, related to it, the zero tillage scenario that has increased the use of agro-chemicals have reshaped the industry. Consequent increases in productivity need to be accompanied by scale in commercial wheat farming for 'followers' who wish to compete. In South Africa, this competition is global since millers import wheat from multiple countries where state-subsidised precision farming is often the norm. Between capitals, these innovations mark a further shift towards increasing corporate dominance and power in the agricultural node, while production capital becomes more reliant and dependant on these innovations for its own ability to accumulate capital.

In the GCC/GVC paradigm, the strategies of wheat producers who increase the scale, mechanisation and biotech/chemical-reliance of their farming operations constitute 'process upgrading', in which they are making use of new methods of production in order to advance their position in the commodity chain and increase the value that they are able to create or capture. Alongside this creative process upgrading is 'destruction' which plays out in terms of the impact of these strategies on labour and households.

The process upgrading strategy of mechanisation and digitisation not only impacts labour and producers, but is driven by capital-labour relations. In order to reduce their on-farm workforce, wheat producers mechanise further, resulting in a loss of jobs in wheat farming in South Africa, a larger army of reserve labour and further consolidation of wheat farming. This upgrading strategy reproduces unequal global divisions of labour, with an increase in more highly-skilled jobs in the factories of the US and Europe, and a decrease in low-skilled jobs in the wheat farms of South Africa.

To conclude, this chapter shows how the power resources of wheat producers and consumers have been systematically weakened by the power of global corporations and local organised industry bodies which are leveraging on associational, institutional and market power resources. What this suggests is that the old framing of producers and consumers as powerful (see Chapter 4) no longer holds. Rather, large corporates are benefitting, and are successfully defending their interests in regulatory spaces such as the state and global institutions. These strategies are legitimised through discursive power.

CHAPTER 6

New Sources of Supply and Financialisation

Introduction

The form of Schumpeterian innovation that I explore in this chapter is *new sources of supply*. Here, I look at the importing of wheat by millers for the manufacture of industrial bread. I focus on the Cultivar List which enables collectively-organised millers to secure sources of supply that are advantageous to their capital accumulation strategies. I then link these new sources of supply to the implications of their exercise on other capitals in the commodity chain and the resultant global value relations and impacts on the sphere of social reproduction.

Next I look at the strategies of financial actors in the wheat-to-bread commodity chain and how they impact on other units of capital and, in turn, generate downward pressure on workers and consumers. I focus on wheat derivatives trading (trading capital) in relation to the transport differential, commercial producers, millers and agribusiness; and wheat price volatility. I also explore the role that financial institutions, such as national banks, play in financing wheat production.

Market and associational power of milling giants: new sources of supply and private production standards

There is an increase in consumer demand for bread in South Africa, yet the number of wheat hectares planted in South Africa is decreasing. In 2012, the number of hectares of wheat planted was

61 per cent less than the number of hectares planted in 1996 (DoAFF 2013b). Wheat production declined by 24 per cent between 2003 and 2012 while, during the same period, the local demand for wheat increased by 17 per cent, widening the gap between local supply and demand even further (DoAFF 2013a).

South Africa is now a net importer of wheat. During the marketing year 2015/6, South Africa imported an estimated 55 per cent of the wheat needed to meet demand for human consumption (DoAFF 2016:4). Imports are set to increase to about 60 per cent in the 2017/18 marketing year due to the drought in the Western Cape province[68] of South Africa, which is the most severe drought the region has experienced in over a century[69]. The drought has caused an estimated 40 per cent decrease in the latest wheat harvest in the province (SABC 2017). To compensate for the decrease in local supply, millers import large quantities of wheat. In 2016/17, the main countries from which South African millers imported were, in order of most to least number of tons of wheat, the US, Argentina, Australia, Canada, Czech Republic, Germany, Latvia, Ukraine, Poland, Romania and Russia.[70]

Subsidies to South African producers were withdrawn in 1996 when South Africa implemented the Growth, Employment and Redistributions strategy (GEAR). Under pressure from the World Trade Organisation (WTO) and the International Monetary Fund (IMF) South Africa, along with many other developing countries, deregulated its economy in order to participate in the global 'free trade'

[68] The Eastern Free State was formerly the bread-basket for wheat in South Africa. However now the Free State province only produces 20 per cent of the wheat produced in South Africa, while 46 per cent of the wheat produced is grown in the Western Cape province, especially the Swartland and the Douglas area, and 15 per cent is grown in the Northern Cape province (DoAFF 2013a).
[69] This has led to the state decreasing the tariff for the import of wheat in September 2017 by 60 per cent from ZAR947.20 per ton to ZAR379.34 per ton.
[70] At the end of 2016, the new Economic Partnership Agreement (EPA) between the European Union (EU) and South Africa came into effect, allowing for duty-free imports of 300,000 tons of wheat from European countries in 2017.

economy. This deregulation decimated many industries and jobs, including the clothing sector, which could not compete with imports from China. In the farming industry, many producers were unable to adapt and went into debt. The commercial agriculture industry in South Africa is now one of the least subsidised agriculture industries in the world (see Chapter 4).

However, many of the wheat producers in other countries with whom South African wheat producers compete, are heavily subsidised, including producers in the US, Canada and Germany. The US spends US$25 billion on farm subsidies, most of which go to crops such as wheat and corn (Edwards 2016). In 2004, wheat received a 14.6 per cent share of these subsidies. Even with the impending subsidy cuts under the Trump administration, US subsidies to farmers will remain comparatively high. 'Canada spends between US$6 and $8 billion on farm subsidies, including US$368 million in annual tax breaks, US$121 million for farm fuel purchases, US$84 million per year in sales tax relief for farm machinery and parts, as well as US$163 million for pesticide, seed and fertilizer' (Warick 2017). In Germany, there are federal subsidies in food and agriculture which are expected to grow to €1.5 billion in 2018 (Federal Ministry of Finance 2017). German producers also receive a tax benefit of €450 million for agricultural diesel and a tax benefit for tractors of €260 million.

Since South Africa is now a net importer of wheat, producers receive prices close to the import-parity price[71] for wheat, which means that in terms of price, they are in direct competition with the subsidised producers in countries from whom we import wheat. The issue of competing with subsidised wheat producers and the need for tariffs came up repeatedly: *'We are competing against*

[71] Import Parity Price is a price based on the cost of imported goods.

subsidised produce from overseas. To be on a level playing field there must be a penalty for guys importing US/EU subsidised products.' (Hardie, interview, 2012).

One smaller-scale wheat producer who was struggling to keep his farm going explained the challenge of competition for smaller-scale wheat producers and emerging producers:

> *'There is a total crisis in wheat. About seven or eight years ago it wasn't profitable at all. You won't get it to be profitable unless the margins are high. There has been extra good weather with good rains that are like irrigation and a high international wheat price. These two rarely go together. It is unusual because you usually have drought and low wheat prices and then you have to pay in. The risk and possible returns are so low. Farming is more of a mindset than about making lots of money; your scale of production has to be very high, at least three times, to cut the risks and costs of machinery, labour and so on. We get the import-based value. We pay the import-parity price. One gets very little leg-up from government in a sense to make this viable. Empowerment projects go down. You only get one chance. The costs are so high that many of the empowerment guys don't survive. I got this farm from my dad. You put all your money in it and then you can lose it all in one year.'* (Potgieter, interview, 2012).

However, while the lack of subsidies, competition with subsidised foreign producers and the issue of scale were raised in terms of the import of wheat and the wheat price, wheat producers primarily have issues with the behaviour of the milling giants whom, they feel, are 'playing games' by 'manipulating' the prices so that South African farmers do not benefit from global increases in the price of wheat, and that too large a cut of value in the commodity chain was going to millers.

The low wheat prices paid to wheat producers and the uneven distribution of value in the commodity chain are illustrative of the way in which asymmetries in power resources in the structural, institutional and associational spheres benefit oligopolistic corporate actors to the detriment of actors in the node of agricultural production. The following quotes illustrate this power asymmetry. One wheat producer linked the low prices that producers receive for wheat to corporate concentration: '*On the price side we are manipulated horribly by bakers, millers and big corporates who definitely play games. Worldwide there is a spike in the price but they manipulate it and we don't get the benefit of it. Bugger being beholden to only four companies.'* (Snyman, interview, 2012). Jan Coetzer (interview, 2012) expanded that since millers and buyers (bakers) are one company now, wheat producers do not get what the product is worth and *'it is a risk to produce wheat valued at 18 per cent when the miller and baker get 82 per cent. We have nature to contend with. We need import tariffs to protect the domestic market'*.

Focusing on the position of wheat producers in the commodity chain, Jacques Kruger (interview, 2012) said that the state gets more of the final loaf of bread than the farmer, and that big corporates further up the chain hold a lot more influence than farmers, despite their collective organisation; *'The value of wheat in the bread is less than the value of [Value-Added Tax] VAT in the bread. Less than 14 per cent goes to farmers, so farmers' influence is low. There are thousands of farmers, and organisations like GrainSA give farmers a bit of power, but not like a company like Premier.'* The associational power that farmers are able to derive through collective organisation (such as GrainSA) does afford producers some institutional leverage. However their structural position in the commodity chain, with concentrated corporate capital actors both upstream and downstream, places them in a position where they are price-takers.

The market power of millers is further illustrated by the way in which they are able to not only control private wheat production standards, but to link this control to new sources of supply that

facilitate the appropriation of further value. When mobilised to this end, oligopolistic and associational sources of power enable corporates the ability to determine standards on a private basis without having to rely on industrial protection afforded by regulatory institutions (Murphy 2006), which can then be mobilised and transformed into increased rent-taking. This is linked to wheat producer Coetzer's (interview, 2012) point above that millers pay wheat producers inadequately for the quality of their wheat, demonstrating that while this exchange is beneficial for both millers and wheat producers, it remains a power relation in that millers benefit disproportionately because of their market and associational power resources. The way in which millers mobilise this power is explained below.

The 'cultivar list' is a list published annually by the DoAFF as a production guideline and determined and issued solely by the National Chamber of Milling (NCM), which is a trade association that represents the interests of the flour and milling industry in South Africa. The NCM issues this 'cultivar list', which lists the grades of wheat that South African millers are prepared to buy from South African wheat farmers. These cultivars are high in quality[72]. High quality wheat generally means low yields, while low quality wheat offers producers higher yields.

The cultivar list restricts South African wheat producers, forcing them to grow only high-quality cultivars. Millers will not buy any wheat from South African producers that is not on their cultivar list. However, millers will then import low-quality wheat (grades 2 and 3) from Argentina, Brazil and other countries, which they blend with high quality South African wheat on the basis that there is a

[72] South African wheat is considered first grade, alongside other good quality wheat such as Canadian Hard Red wheat. Wheat grain is graded according to starch quantity (mass) and protein quantity. The Western Cape is also one of the few areas in the world where wheat does not have to go through a mechanical drier that negatively impacts on its quality because it can be sundried. The dryness of wheat is important because when there is moisture in the wheat grain, enzymes break the carbohydrates into sugar and the seed wants to grow again, decreasing the milling and baking quality of that grain.

negative correlation between protein (high in South African wheat) and production, and the blend of imported and local wheat gives the 'right' consistency for a loaf of bread (Kruger, interview, 2012)[73]. In other words, millers are able to purchase relatively cheap, high-quality and low-yield wheat from South African producers, which they mix with cheap, low-quality high-yield wheat imported from producers in other countries. This disadvantages South African wheat producers in two ways. First, given that high quality wheat is low in yield, farmers harvest low *quantities* of wheat per hectare. Second, given that they are paid similarly for this wheat as for lower quality wheat from overseas, they feel they are not fairly rewarded for the *quality* of their wheat.

In line with the Cultivars List, seed companies do not breed low-quality cultivars to suit conditions in South Africa because there is no local demand for that seed. According to one seed breeder, *'Farmers feel that the standards are too high because they cannot grow lower quality wheat with a higher yield and better profit… With the demise of the Wheat Board millers brought in a production unfriendly grading system that is farmer unfriendly. It is the strictest grading system'* (Boschoff, interview, 2012). Boschoff (interview, 2012) reminds us of the contextual and historically formed conditions under which millers are able to mobilise market and associational power resources in order to control production standards in ways that enable them to appropriate further value. In 1996 as part of the drive to liberalise the economy, to a large extent due to the mobilisation of institutional power by capital, the state removed marketing boards that had, for 59 years, not only determined the quality standards for wheat, but also controlled the distribution of value capture in the wheat-to-bread commodity chain (see Chapter 4). This is but one concrete example of how the role that the state played in liberalizing the

[73] However, the argument that a mixture of high and low quality wheat gives bread the right consistency is contested. One seed breeder pointed out that *'in the past there was a view that we need quality wheat for better bread, but when production is this low you'd need to import wheat of a higher quality anyway'* (Boschoff, interview, 2012). Some argue that millers mix high with low quality wheat to give bread a longer shelf-life (Marais, interview, 2012).

economy further benefitted concentrated corporate capital, in this case at the expense of agricultural producers in the wheat-to-bread commodity chain.

Due to miller-determined constraints in the market, wheat producers are forced to follow the 'suggestions' on the cultivar list (Kruger, interview, 2012). If one were to grow low-quality wheat not listed on the cultivar list, one would only be able to sell it cheaply as animal feed. Highlighting this power asymmetry, the Johannesburg Stock Exchange (JSE) Commodity Derivatives Director Chris Sturges (interview, 2012) said, *'Millers are in a good position. These are cultivars that millers agreed to and South African wheat farmers can't compete in the international market. Argentina dumps low quality wheat'*. Further, he said, *'Buyers are not rewarding [South African] farmers for their quality. There are government subsidies in other countries'*. This view was echoed by many farmers. One farmer contended that milling is '*a dark industry'* and that *'while millers insist on a strict system for good quality bread wheat in South Africa, they then import low price substitute wheat from elsewhere to blend in'* (Hardie, interview, 2012). Snyman (interview, 2012) continued, *'The bakers and millers bring in really lousy wheat. We are forced to plant certain cultivars. They are not high yield cultivars*[74]*'*. Kruger (interview, 2012) pointed out the lack of reward wheat producers receive for quality wheat; *'Ours is the best quality in the world and we don't get the money for it'*.

The 'cultivar list' controlled by the millers was not established without contestation. As Coetzer (interview, 2012) pointed out *'We said it was unfair but in the end Grain South Africa encouraged farmers to not give up their quality.'* One of the wheat producers noted, in confidence, his wariness of Jannie De Villers, the CEO of GrainSA in this regard, because De Villiers used to be the CEO of the Chamber of Milling, and this producer felt this was a conflict of interest. Nonetheless, the decision to allow the cultivar list stuck, and there remains a sense of pride amongst farmers about the high quality of

[74] Higher yield wheat cultivars are available. For example the Tugela cultivar is about one third higher in yield than other common cultivars in South Africa, but it was removed from the cultivar list by millers (Kruger, interview, 2012).

their wheat, despite the fact that they do not get rewarded adequately for it and their yields are low due to high levels of protein in the wheat: *'The reality is that the industry worked hard to get the quality where it is and we are not prepared to let it go.'* (Snyman, interview, 2012).

While millers are evidently benefiting from a system that affords them cheap local high-quality wheat and cheap subsidised imported low-quality wheat, they are also beginning to import some high-quality wheat because South African wheat producers are reducing their wheat production. There are a number of reasons for this reduction, including the fact that South African wheat producers are not paid sufficiently for the quality of their wheat; they have to contend with low yields to adhere to the cultivar list; their agro-inputs are expensive (see Chapter 5); and the transport differential works against them (see below)[75].

These outcomes culminate in the shrinking of the South African wheat industry, which, while not the intention of millers, are to an extent a consequence of the ways in which they have exercised their market and associational power. A further outcome of the private control in production standards, the shrinking in wheat production, and, as is discussed below, the privatisation of seed research, is a crisis in wheat seed breeding in South Africa. These processes highlight contradictions within this capitalist system. Because of the way in which millers seek out further value capture, and the role of the state in facilitating market participation in previously state-controlled spheres, the wheat industry is shrinking. The shrinking of the wheat industry in turn negatively affects millers who will have to import more wheat at a higher, and highly volatile, cost. For the state, whose

[75] Drought is not necessarily a reason for the decline in number hectares of wheat planted, although it does mean a decrease in yield. Although drought has had a severe effect on the industry over the last year, wheat farmers in the Western Cape actually planted more wheat than usual last year. Since the top soil in the Western Cape is only 100 to 150mm deep, wheat producers are unable to shift production to maize, which is an option for producers in the Free State province of South Africa where the topsoil is 1 to 1.5m deep.

traditional role has been to ensure a level of food security for poor people in South Africa, the shrinking of the wheat industry, which is central for bread as a staple food, may have serious social consequences.

Privatisation of seed research and the wheat seed crisis

The wheat seed crisis in South Africa stems from two main issues: first, and more broadly, the privatisation of seed breeding and research, and second, the shrinking wheat industry in South Africa and related issues of profitability. In the South African wheat industry, there are only two seed companies, both foreign-owned, supplying wheat seed to commercial wheat producers. Sensako mostly supplies wheat seed to producers in the Western Cape while Panaar Seed, which has now merged with DuPont Pioneer, supplies half of the wheat seed in South Africa.

While these seed TNCs are foreign-owned, seed breeding takes place at a highly localised level due to constraining ecological differences between different areas not only globally, but also within South Africa. For the development of area-appropriate wheat cultivars, seeds need to be bred for specific local conditions, including weather patterns, rainfall and the likelihood of insect or fungal threats. Cultivars bred for the Free State, for example, will differ from those that are bred for the Western Cape, or anywhere else in the world. In South Africa wheat seeds also need to be bred in line with the millers' cultivar list specifications. Consistent, ongoing and well-researched seed breeding is essential to the wheat industry in South Africa. Apart from breeding cultivars with better

yields, seed breeding contributes to the maintenance of cultivars over the long-term that are less affected by the weather, fungus and sickness, and less affected by climate change.[76]

The concentration of the wheat seed companies is perceived by most producers as positive in the absence of substantial assistance on seed breeding research and development from the state and academic institutions in South Africa. *'Wheat seed breeding is high risk and not that profitable. In the US, most wheat breeding is done by universities'* (Boschoff, interview, 2012). To this end, the reduction in public agricultural research post-1994, as part of the process of liberalisation of the economy, has legitimised, and to some extent even necessitated, the concentration of wheat seed corporates. Wheat producers and seed breeders claim that if research is to be done almost entirely by the seed companies, many small seed companies would battle to produce good cultivars because research and trials are so expensive. *'It makes sense to have smaller seed companies if we had a highly organised efficient DoA to do basic research on plant breeding, but we don't. Thank goodness for Monsanto. Who would do the work otherwise?'* (Hardie, interview 2012). Many wheat producers said that even if this concentration means prices for wheat seed are higher it is still an advantage because the investment in research then leads to better cultivars with higher yields, which leads to improved profits[77].

In light of these arguments for concentration in privatised seed breeding, wheat producers were relatively unconcerned about the 2012 merger between Panaar Seed (formerly South Africa's only local seed company, producing half of the wheat seed in South Africa) and DuPont Pioneer, a seed giant based in the US, because it opens up the possibility that they will benefit from improved cultivars with higher yields and improved pest resistance. One wheat producer, Snyman (interview,

[76] Seed breeding by seed companies in South Africa, for example, has made wheat mostly resistant to stripe rust and other diseases (Boschoff, interview 2012).
[77] Wheat farmers contribute a statutory fee of ZAR9 a ton to the Winter Cereals Trust which finances research into the development of cultivars. In 2006, this amounted to ZAR24 million. Seed companies are the beneficiaries of the trust.

2012) argued; *'If you look at seed companies, they keep much information private and to themselves, but in a merger, barriers to that information are broken and there is an opportunity for better hybrids and higher yields. This is positive for the producer.'* In the process of reducing public agricultural research, and the subsequent role played by private seed companies in furthering this research, the important resource of knowledge on wheat seed breeding in South Africa is predominantly locked in the private sphere, where it is not shared publicly, and is only shared privately in the case of a merger.

Wheat producers said that the wheat industry is shrinking and seed research and development is an extreme cost, so it is not financially viable for many small companies to invest in long-term seed breeding and they would struggle to provide seed for the whole economy, in the process duplicating human resources and trials (Snyman, interview, 2012; Grobler, interview, 2012; Klaasen, interview, 2012). Although big companies are less flexible and more expensive, they have more money for trials and therefore produce higher yields[78] (Boschoff, interview 2012). For wheat producers, short term interest in seed cultivars centres on the extent to which they can offer higher yields within the restrictions of the millers' cultivar list, the chances of which are much higher if larger concentrated seed companies with sufficient resources are researching and breeding these cultivars. However, wheat producers are in a contradictory position because their long-term interests are unlikely to be realised in a highly concentrated seed market, given the possibility this raises of ongoing increases in the price of wheat seed with little to no competition between seed companies.

The issue of the profitability of wheat seed breeding companies in South Africa is twofold: first, local wheat production is decreasing, so the market for wheat seed is limited (while research and seed breeding remain costly), and second, many wheat producers save seed since wheat is a self-

[78] The yield is the amount of seed per tonne that can be produced per hectare of a planted crop.

pollinating crop, which means that less wheat seed is sold by the companies who are breeding the cultivars[79].

There was an overall concern about the shrinking, and indeed 'death' of the wheat seed breeding industry in South Africa because seed companies are not selling enough kilograms of seed to remain economically viable (Botha, interview, 2012). This was reiterated by Grobler (interview, 2012) who said:

> *'The seed production and breeding companies have climbed out quite quickly. The plant breeding industry has basically died. If wheat farmers do not club together to keep the wheat breeding guys here we will have a huge problem. There is a definite move from maize to bread products by consumers. We need better (wheat) cultivars'.*

According to one wheat seed breeder at one of the big seed companies, they *'must convince farmers to buy seed so that money can be invested into research and development to maintain the crop for proper cultivars. When farmers brown-bag there is no ways companies will develop and put millions into it.'* (Boschoff, interview, 2012). 'Brown-bagging' is a term for keeping back seed from a crop, cleaning it and then planting it the following year. Amongst wheat farmers, this seems to be common practice with up to 60 per cent of planted seed originating from brown-bagging (Boschoff, interview, 2012). Wheat is a self-pollinating, self-planting crop with a long lifecycle, which means that producers can save seed: *'wheat is self-*

[79] The case of Monsanto in wheat seed illustrates the issue of profitability in the South African wheat seed market. Monsanto bought the wheat component of Sensako in 2004, but pulled out of the business when they realised that the wheat seed market was not large enough for it to be sufficiently profitable.

planting so you don't have to buy seeds. It takes twelve years to develop a cultivar and then ten bags can last ten years' (Ibid.). The price of bought seed is increasing, and brown-bagging saves producers money[80].

Yet, while it can save wheat producers money over the short-term, it can be risky for the harvest of the respective wheat crop. One wheat producer noted, *'Many costs are fixed, such as fertiliser, diesel, labour and so on, so people try to save on seed. But the cost of seed (for wheat) is relatively low and the risks of brown-bagging are high.'* (Hardie, interview, 2002). Crops planted from brown-bagged seed that has not been cleaned and stored carefully can run the risk of seed-borne diseases. The recent updates in the Plant Improvement Act (PIA) and the Plant Breeders Rights Act (PBRA) places even stricter prohibitions on seed sharing. Through these Acts, seed companies have leveraged their institutional power to push for stricter controls in order to protect their IPRs, which acts to the disadvantage of producers in agriculture, and in particular, small farmers.

Yet in the case of wheat seed, brown-bagging and seed sharing does pose a dilemma for seed companies in the context of precarious and shrinking wheat production in South Africa, which is linked to way in which millers and other agro-input companies are exercising their market power. Given that the industry receives little assistance from the state in this regard (although the state has tried to revive the heavily-indebted Agricultural Research Centre[81]), wheat seed breeding is almost entirely privatised. However, if it is not profitable enough, given that the development of new wheat cultivars by seed companies is an expensive and lengthy process, there will be a shortage of new

[80] Maize seed was used as an example where, since you cannot brown-bag maize because it is a hybrid and 'the yield would be disadvantaged if seed was kept back' (Boschoff, interview, 2012).

[81] The Agricultural Research Council (ARC, established in 1990) is the South Africa's state agricultural scientific research institute running programmes that include Smallholder Farmer Agricultural Development (SFAD) which includes wheat production courses, producer-friendly production guidelines, planting calendars, demonstration trials and so on. However ARC is severely underfunded, and despite being given a government grant of R866 million in 2013/14, a 16 per cent increase on the previous year, ARC's Shadrack Moepuli says that a parliamentary grant of R1.5 billion as a conservative estimate for what the ARC requires to fulfil its mandate (Wild 2014).

cultivars. Without new cultivars that offer increased yields, it is likely that even more wheat producers will leave the industry for more profitable crops or alternative avenues of capital accumulation.

The Schumpeterian innovation of new sources of supply forms the basis of one of the governance strategies of millers who import wheat, while at the same time securing local good quality wheat at a low rate through a strict gradation system. This has had an impact on both the local wheat industry, in terms of a decrease in wheat production, and an impact on the wheat seed breeding industry which is at risk of weakening further as wheat production shrinks. A shrinking local wheat industry leaves consumers in South Africa more exposed to the volatility of wheat prices as net importers. This, in turn, has an impact on the price that consumers have to pay for bread. Lastly, the problems that the wheat seed breeding industry faces as a direct result of a decrease in local wheat production coupled with weak state support, means that the industry overall is at risk. Further still, since bread is a staple food in South Africa, national food sovereignty is at risk.

Enter finance capital: market power through commodifying risk

In this section, I focus on financialisation in relation to derivatives. I look at the commodification of risk in pricing and in the market, as represented by derivatives trading including hedging and speculation, and the emergent 'faultiness' in this trading system which benefits millers in certain areas and is causing a decrease and/or squeeze in the local production of wheat. Further, the complexity of knowledge needed to navigate the trading system tends to benefit larger, more informed actors, and/or those who are willing or able to operate through brokers in order to participate in this frontier of capital accumulation.

The post-war era of the welfare state offered heavy industrial and national protection, fixed exchange rates and numerous other controls. In this context, 'risk about price changes in the future was to some degree socialised' (Bryan and Rafferty 2006:7). With the removal of fixed exchange rates and the collapse of Bretton Woods, new risks arose in the world of finance, such as floating exchange rates and interest rates that presented an opportunity for capital accumulation (Bryan et al. 2009). The strengthened finance sector that emerged during this period became, and is central to, the functioning of the global market. Rather than simply dominating other capitals and operating in a sphere separate to the 'real' economy, it is transforming the organisation of economic activity and social relations (Bryan and Rafferty 2006; McIlroy 2011).

Financialisation can be defined as: 'The increasing importance of financial markets, financial motives, financial institutions, and financial elites in the operation of the economy and its governing institutions, both at the national and international levels' (Epstein 2005, in Clapp 2014:3). Financialisation is a development within capitalism 'rather than a distortion of capitalist production' (Bryan et al. 2009: 460). Derivatives are such a central component of this process of financialisation that they are now the largest economic activity in the world with a daily turnover of US$1.9 trillion (Ibid.).

In the 1980s, financial derivatives began to grow in order to deal with uncertainty. At their core, derivatives are a mechanism that links prices in the future (unknown and risky) to assets in the present (Bryan and Rafferty 2006). Derivatives are paper contracts whose value is based on the value of the underlying asset, so while derivatives are capital, they do not involve ownership of assets. Since derivatives continue to be developed for a vast array of underlying assets, they provide

integration of capital in the sense that they can convert between and be compared to different assets, without the constraints of either time or space. Now, it is not just 'firms' that compete. The assets ('bits of capital') of these firms are in competition as price relations with the assets of other firms, and they are comparable, tradable assets, judged on performance (Bryan and Rafferty 2006:9).

Newman (2009) in her case study on the coffee commodity chain, explains that derivative prices are increasingly influencing and determining the price on physical markets. While price discovery is, in theory, based on supply and demand, derivatives are, themselves, a form of calculation that, in turn, 'intensifies competition between capitals with direct implications for the intensification of labour in production' (Bryan et al. 2009:461). Ironically, despite their intended role in stabilising the market, commodity derivatives are often destabilising, in part because of the degree of speculation that is central to their functioning (Girardi 2012).

As demonstrated in Chapter 4, the wheat-to-bread commodity chain was heavily regulated for fifty-nine years by the Wheat Board, under the Marketing Act. Wheat producers sold their wheat to the Wheat Board at a set price, and the Wheat Board then sold wheat to millers at a set price. The state played a central role not only in facilitating and regulating the cash market for wheat, but also in actively creating this market by encouraging local demand. Through heavy state subsidies throughout the production of wheat to bread, including on the final price of bread, the state cultivated the demand for 'cheap' national bread and paved the way for bread to become a staple food in South Africa.

One outcome of this exercise in state regulatory power was national self-sufficiency in wheat production. Indeed, in some years, farmers even produced a surplus of wheat that the Wheat Board

then sold (dumped) on the Chicago Board of Trade, often at a reduced price (Moolman, interview, 2012). Self-sufficiency was a central component of the apartheid nationalistic ideology. By providing wheat producers with price certainty, and thereby drastically reducing their price risk, the then-Department of Agriculture ensured that farmers would plant enough wheat to meet the demand of the whole country.

Under this regulated exchange, farmers were guaranteed a set price for their wheat, which was generated off their average yield after their input costs, and the price risk was absorbed by the state. The profit margin for farmers was a built-in, guaranteed 25 per cent 'entrepreneurial fee' (Roos, interview, 2012). *'If you were an average farmer you were guaranteed to make a good return, but if you were a good farmer with high yields you did extremely well'* (Grobler, interview, 2012). According to Hardie (interview, 2012), this was good for the farmer because *'you weren't subject to the bakeries and the free enterprise system'*.

However, most wheat farmers that were interviewed argued that with price certainty pre-1994, there was no incentive to innovate, and no need to become more efficient in order to compete. *'When the market was regulated, if a farmer had initiative or entrepreneurship, it did not add any value to his harvest'* (Snyman, interview, 2012). They argued further that the negative side of price certainty for wheat was that it kept many 'weak' farmers in production at the expense of the state.

'I am not for regulation; some guys were making noises because the state gave farmers unfair protection. Rather one should look at national protection for the industry than for a single producer' (Snyman, interview, 2012). While some argue that this regulatory system enabled us to build commercial agriculture as it exists in South Africa today, others argue that no regulation would have built a better and more competitive system: *'regulation served its purpose but went beyond a certain point'* (Karaan, interview, 2012).

Respondents had different views on the liberalisation of the South African economy, which were based on their location within the economy and their related broader ideological positioning. Chris Sturges (interview, 2012), the Commodity Derivatives Director at the JSE, noted, *'I promote the free market fully in South Africa. There are a number of visitors who come from all over the world and we are careful to prescribe the need for free market to establish industry'*. On the other hand, those against liberalisation argued that it is having negative effects, especially on the agricultural sector: *'Government don't [sic] understand what they are doing with liberalisation. They are not supporting the agricultural sector and it will be of major consequence 20 years down the line. It is a combination of naïveté and bad decisions'* (Mayette, interview, 2012).

The shift from heavy state regulation to trade liberalisation began in the late 1970s and 80s, but accelerated in 1996. The South African Futures Exchange (SAFEX) was established in 1995 as a pricing mechanism for the neoliberal market. SAFEX provides an electronic trading platform which is linked into a global free market that is based on the principal of supply and demand, with the assumption that the market can play a 'fair' mediating role.

The Agricultural Markets Division of SAFEX opened in 1995 with beef and potato contracts. In 1996, SAFEX introduced white and yellow maize contracts, while the wheat contracts were introduced towards the end of 1997. In 2001, SAFEX was bought by the Johannesburg Stock Exchange (JSE). Wheat is sold and bought on the market through the platform of SAFEX's commodity derivatives section. Commodity derivatives are theoretically 'bilateral contracts based on the value of an underlying asset' (for example, a wheat contract is theoretically based on the value of

the wheat underlying the contract) (Kurten 2003:9). There are two types of derivatives that are often used for the sale and purchase of wheat: forward contracts and futures contracts.

A forward contract is 'an agreement between two parties to exchange a particular quantity of a specified item at a specified price at a specified future date' (Kurten 2003:10). Forward contracts are self-regulated and have a telephonic marketplace. A futures contract is 'a standardised contract between two parties to exchange a standardised quantity of a specified underlying asset on a predetermined future date at a price agreed today, traded on an organised exchange' (Kurten 2003:10). Futures contracts are traded on exchanges that are regulated by a government body and the exchange management, with the marketplace existing as electronic screen dealings or a central exchange floor. Futures contracts are open to anyone who is interested, and there are many buyers and sellers. The exchange is guaranteed by the clearing and settling agent/house, which is usually one of the big commercial banks.

Wheat contracts in the futures market are traded for hedging and speculative purposes. Hedging is the transfer of price risk to attempt to prevent losses, so, for example, wheat farmers can establish prices for the future delivery of a crop of wheat that they have not harvested yet, in order to minimise the risk of adverse price changes on the global market in the future. For this reason, the derivatives market of future contracts *'relies on a high degree of price volatility [price fluctuation], otherwise there would be little interest in trading futures contracts on a product'* (Potgieter, interview, 2012).

Uncertainty about future prices of wheat on the global market pushes farmers to 'lock in' the current price of wheat by selling their wheat through futures contracts (hedging), with deferred delivery. While hedgers (including farmers/producers and financial institutions such as commercial banks that

finance producers) are giving away risk, speculators are taking on risk at a premium. Speculators include high-risk brokers and professional traders. According to Sturges (interview, 2012), *'A healthy derivatives market trades an underlying crop many times […] for example, one wheat crop can be sold and bought eight times over'*. This measure of the robustness of the derivatives market alludes to the liquidity of the market, which is important for its functioning.

Interestingly, none of the producers who were interviewed were in support of the regulation system over liberalisation. The system now is considered to be highly entrepreneurial, and wheat producers are shifting their practices and identities more towards a 'business mindset' (Botha, interview, 2012). One producer (Grobler, interview, 2012) noted:

> *'The deregulation enabled good farmers to expand quickly. At the time it was horrendous because in the first two years deregulation cleaned out many farmers. Many didn't understand the international trading system and some experts came in. We don't know how we paid the bills of 1993 and 1994. 1,200 farmers dropped to 600 in a year. It put a lot of guys under. But others came out good on the other side. It makes you lean and mechanised now.'*

In this excerpt, the notion of a 'good' and successful producer is one who survived the shift to liberalisation through the following characteristics. First, they quickly adapted to the international grain trading system, while those who did not fell by the wayside unless they received expert help. Second, to be a 'good' farmer now requires very lean production and a high level of mechanisation, both of which were interpreted by respondents to be entrepreneurial rather than a matter of access to resources (see Chapter 5, and see below for the link to discursive power). These imperatives for

economic survival and efficiency do not take into account the broader social implications of the subsequent decrease in wheat production in South Africa. Hardie (interview, 2012) stated:

> *'The huge adjustment for farmers over the last ten to twenty years is that margins are lower and many people are not in the position to do it. A family next door were the biggest farmers in the district and pioneered the system of wheat farming in the Free State but they didn't make the adjustments. They stayed with wheat for too long and couldn't go on with that. Many people have gone bankrupt.'*

In the process, the shift to SAFEX caused a number of producers to go into debt, while those who were able to understand, operate on economic scale and take advantage of the futures market stood to benefit from this shift. This echoes the findings of Newman (2009) who observed that in the coffee commodity chain, changes in price risk and uneven access to futures markets by different actors has shifted the structure of these chains, with concentration among large commodity trading companies with new avenues for capital accumulation through finance.

The expanding futures market, central to finance in neoliberalism, thrives on price volatility and risk, and is premised on the idea of 'price risk management' with sellers hedging their risk to speculators who seek to profit from it. This high price volatility in global food markets on which the futures market relies, is linked to extreme weather patterns due to climate change, energy and fuel costs, exchange rates, and socio-political factors in producer countries.

In the case of wheat in South Africa, price risks have shifted from the regulatory state absorbing the risk to the risk being placed squarely on the shoulders of wheat producers and the financial institutions (i.e. commercial banks, brokers or 'agribusiness partnerships', and insurance companies)

that finance them against the tenure of the wheat farmers' assets (in particular, land). The producer and/or financial institution then hedges that risk because there is no price certainty for the final product. Jacques Kruger, a wheat producer, stated that he could make high returns on the futures market one day and then lose half a million rand on the same market the next day (Kruger, interview, 2012). Large grain traders including international commercial banks, local commercial banks and agribusiness corporates such as Senwes often stand to profit from the volatility of prices in the global grain trading market as both hedgers and speculators.

It has become evident that, as with mechanisation, the larger-scale commercial wheat producers have been advantaged, this time in the marketing of wheat. Wheat production is seen as a gamble now: '*the Wheat board set a permanent price – you would know everything beforehand. But now it is a gamble'* (Roos, interview, 2012). For smaller producers, *'SAFEX is not that easy to use. There are costs involved here. ZAR150/tonne is your profit margin on marginal years'* (Potgieter, interview, 2012). However, collectively, smaller producers are at less risk: *'There is a group of farmers that sell together – Western Cape Grain Producers, which is 110 producers. It markets through the year. The higher volumes usually do better on SAFEX. We can do it on a company basis to spread the cost over the whole pool, then the risk is lower than if you are on your own.'* (Potgieter, interview, 2012).

The financialisation of the chain appears to have resulted in the widening of already existing asymmetries between different producers in wheat production and marketing. While smaller commercial producers are able to participate in the exchange through cooperatives and brokers, they are likely to feel the effects of price volatility more intensively than larger producers since their production process is less mechanised, and thereby less competitive. Further, this demonstrates a

shift in the economic organisation of the chain in which finance capital is finding and taking advantage of new avenues for accumulation.

The second impact is as a result of the process of strengthened market power by corporate actors, the rise of finance capital and the squeezing of smaller producers downstream. This follows the broader trajectory of global capitalism, and investigations into other commodity chains reveal similar patterns. There is, for example, a parallel between this process in the wheat-to-bread commodity chain and case studies of global coffee commodity chains (see Russi 2013; Newman 2009). The process of neoliberalisation has further enabled capital accumulation for highly concentrated segments of the market, while at the same time, the consequential price volatility due to speculation affects smaller agriculture producers most, who are usually based in the developing word (Lawrence 2014).

In the case of the wheat-to-bread commodity chain, smaller, commercial wheat producers firstly employ more labour than larger, more mechanised farms, and secondly, are increasingly being absorbed into larger farms, or leaving wheat farming altogether. This has a direct impact on employment levels in wheat farming in South Africa, with jobs being created in other countries from where South Africa imports wheat. There appears to be a trend of imports of wheat coming increasingly from developed countries such as the US and Germany, possibly due to productivity increases due to the rapid uptake of new and innovative methods of production in these countries, including precision farming and agro-tech. It is also in these countries that the TNCs heading up these innovations in farm equipment, biotech and agro-tech are based. Overall, this signals an ongoing pattern of the international division of labour which is reproduced through intensified

competition, stemming from new methods of production and sources of supply. I build on this analysis in relation to capital-labour relations below.

Another example of where finance capital is playing an increasingly central role is weather insurance. The risk of poor weather, which is exacerbated by the current effects of climate change in South Africa, was raised repeatedly by producers. *'The only difference between wheat farming and normal business is that the risk for wheat farming is so high. Sixty per cent of what one might achieve or more relies on the weather'* (Snyman, interview, 2012). Again, there is little security provided here and the risk is decentralised to individual producers. *'Farms have been flooded and no one received anything in terms of relief. Fields also burn in winter'* (Coetzer, interview 2012).

Theoretically the assumption is that in the 'free market' that there is a level playing field for wheat producers worldwide and locally to compete with one another. However, the playing field is considered by South African wheat farmers to be unfair, in terms of both the standardisation of wheat quality (see Cultivar List) and transport to the marketplace. Due to the issues of standardisation of quality (farmers feel that they are not rewarded for their quality) and the transport differential, many farmers feel that it is not viable to plant wheat at the import parity price because the risk is not worth their while (Van Dyk, interview, 2012).

A major point of contention for wheat producers in the Western Cape is that the main SAFEX wheat contract is standardised with Randfontein as the theoretical marketplace. Prices are set at Randfontein, even if wheat is not physically transported and sold at Randfontein. The physical marketplace is at many different points in South Africa, where wheat is bought and sold to be stored

in silos and milled by millers, with three quarters of wheat grown in the Western Cape staying in the Western Cape.

Since Randfontein is the marketplace for the main SAFEX wheat contract, farmers in the Western Cape, where most wheat in South Africa is grown, have to pay a transport differential of ZAR400 per tonne of wheat to theoretically sell their wheat at Randfontein, even though it is usually physically sold to a miller in their immediate area.

Once again, it is the millers who benefit from the transport differential because it means that they can buy wheat cheaper in the Western Cape, mill it and then physically transport it to other parts of the country using the farmer's transport differential money (Grobler, interview, 2012). SAFEX added Paarl as another exchange node to try and address the issue of the transport differential but this was unsuccessful as it affected the liquidity of the main contract based in Randfontein. The transport differential was cited by many wheat producers in the Western Cape as one of the reasons why their crops were not profitable enough, leading them to shift away from wheat production.

Discursive power and culture: mobile businessmen in agriculture

Of the farmers interviewed, most ran large-scale farms. Many of these wheat farms were farmed over a period of up to 130 years by four to five generations of a family, while others were established between the 1960s to late 1970s. Many farmers consider wheat to be an 'old-fashioned' crop; one that their grandfathers grew. One farmer posited that farmers who still grow wheat do it partly to continue tradition across generations; *'If you look at the return on equity, wheat farming has very*

low returns because of the cost of the machines. Most farmers do it because they love it; the machines, the challenge, and three to six generations have done it, so what else would we do?' (Grobler, interview, 2012).

Along similar lines, another farmer (small-scale) added a reflection on the lifestyle and 'mindset' associated with farming; *'In a social sense it used to be a fantastic lifestyle. There is a misconception that there is money in farming. There is not much money to be made considering the risk you take. You could do better with your investment on the stock exchange. Farming is more of a mindset than about making lots of money; your scale of production has to be very high, at least three times larger, to cut the risks and costs of machinery, labour and so on.'* (Potgieter, interview, 2012).

In this excerpt, the notion of a 'good' and successful producer is one who survived the shift to liberalisation through the following characteristics. First, they quickly adapted to the international grain trading system, while those who did not fell by the wayside unless they received expert help. Second, to be a 'good' farmer now requires very lean production and a high level of mechanisation, both of which were interpreted by respondents to be entrepreneurial rather than a matter of access to resources.

Shiva (2004:71) states that farmers in the era of globalisation[82] are losing their identities as producers, in the social, cultural and political sense of the term, in the process of becoming consumers for powerful agro-input corporates, landlords and financiers. In this case study, there is a shift from an identity linked to farming, to an identity linked to business and corporate culture.

[82] It is not clear what is meant by this era of globalisation and when, in Shiva's (2004) periodisation, it began.

Some producers identified themselves as less of a 'boer[83]' and more of a 'businessman in agriculture', as illustrated by the following quote: *'If I introduce myself, I say I am a businessman in agriculture, not a farmer or a boer or something. I'm not that anymore […] my grandfathers farmed on this land, but mine is a business. I can farm anywhere in the world'* (Kruger, interview, 2012). The generational shift in identity amongst many white Afrikaans farmers from identifying themselves as a 'boer' to a 'businessman in agriculture' could indicate a desire to distance themselves from the perceived political risks of being identified as a 'boer' or white farmer in agriculture in post-apartheid South Africa.

Further, the recurring mention of the ability of white farmers to leave South Africa and farm elsewhere in the world indicates a shift away from the more nationalist conception of farming under apartheid along the lines of self-sufficiency, towards a global food production system global food production system post-1994 where economic trading links extend beyond the border of the nation-state. The largest affiliation of farmers in South Africa, AgriSA, has made frequent mention of the numbers of white farmers leaving South Africa for other African countries, such as Mozambique, Zambia and the Congo, where the state offers skilled commercial farmers from South Africa incentives to produce food on a large-scale.

Farmers also reflected on the trend of farmers leaving South Africa to farm elsewhere in relation to politics and the economic climate:

> *'The whole political issue is less of an issue around here because it goes up to fifth generation sometimes. But there is reluctance to invest until the whole thing is clarified. We won't make a huge effort to grow our business. On the whole people [farmers] are fairly negative and insular about how they see growth. People are*

[83] White Afrikaans farmer

> *looking northwards to Zambia and there are huge investment opportunities in Mozambique. There is long term pressure on wheat so we are looking north of here'* (Grobler, interview, 2012).

The mobility of some white commercial farmers points towards a certain level of power that these individual farmers have in a setting where commercial farmers have a globally-transferable skills set, as well as access to finance/capital which is based on both their skills set and the fact that they own the means of production: land and machinery.

Worker power in the wheat-to-bread commodity chain

There is a direct connection between the intensification of financialisation and the expansion of derivatives as grounding to finance over the past two decades, with the informalisation and fragmentation of labour. Bryan and Rafferty (2006:176) explain,

> *'The capitalist faced with intense, generalised competition in money and commodity markets must look to the sphere of production as the site where it is possible to 'get a jump' on competitors […] this is a race for profitability. Labour that cannot deliver globally competitive levels of productivity must compensate, as it were, for its less than frontier productivity by accepting longer hours and lower wages'.*

Financialisation, derivatives especially, place downward pressure on other capital actors and, consequently, on labour. Another fairly well-researched way in which financialisation is impacting directly on labour and households is through the indebtedness of the poor. Labour becomes a further site for accumulation through its consumption of credit, housing loans and other financial products, but unlike capitals on the futures market, it is unable to protect itself from the risk linked to these products (Bryan et al 2009, Newman 2009). It is in this sense that labour in households and

the unemployed become the 'shock absorber of last resort', with the response of the state being a neoliberal focus on financial literacy for individuals (Ibid.:468,471).

Specifically in the wheat-to-bread commodity chain, there are a few other ways in which labour is directly impacted by financialisation of the chain. The first is through volatility of wheat prices and subsequently the price of bread as a staple food. Clear links have been made between volatility on the global commodity market for wheat, and speculative behaviour. Girardi (2012) shows that financial investors, especially index traders, have affected wheat price dynamics in recent years. Algieri (2012) also calculates that while a number of factors contribute to the changes in wheat prices, the three central factors between 1995 and 2012 have been speculation in futures markets, global demand and exchange rates. This suggests that price dynamics are influenced by speculation. Even though speculation is an important component of the system of agricultural derivative markets (necessary because producers and financial actors require liquidity in the market to hedge), it is also a destabilising factor in these markets with knock-on effects that feed directly into households (Algieri 2012). Increasingly, broader speculation in trading on financial markets has absorbed trade activity in food commodities (Windawi 2012:2) which calls into question the sustainability of this largely-unregulated financial market for food security worldwide.

The second impact is as a result of the process of strengthened market power by corporate actors, the rise of finance capital and the squeezing of smaller producers downstream. This follows the broader trajectory of global capitalism, and investigations into other commodity chains reveal similar patterns. There is, for example, a parallel between this process in the wheat-to-bread commodity chain and case studies of global coffee commodity chains (see Russi 2013; Newman 2009). The process of neoliberalisation has further enabled capital accumulation for highly concentrated

segments of the market, while at the same time, the consequential price volatility due to speculation is felt worst by smaller agriculture producers who are usually based in the developing word (Lawrence 2014).

Yet, as these findings demonstrate, the smaller, commercial wheat producers employ more labour than larger, more mechanised farms. The absorption of smaller farms into larger farms (and producers disinvesting from wheat farming altogether) has a direct impact on employment levels in wheat farming in South Africa, with jobs being created in other countries from where South Africa imports wheat. There appears to be a trend of imports of wheat coming increasingly from developed countries such as the US and Germany, possibly due to productivity increases due to the rapid uptake of new and innovative methods of production in these countries, including precision farming and agro-tech. It is also in these countries that the TNCs heading up these innovations in farm equipment, biotech and agro-tech are based. Overall, this signals an ongoing pattern of the international division of labour which is reproduced through intensified competition, stemming from new methods of production and sources of supply.

Conditions of work on wheat farms in South Africa are characterised by low levels of unionisiation; increasing mechanisation and displacement for most workers, with a few workers retaining more highly-skilled jobs such as operating advanced farming equipment; and increasing displacement of labour off farms and into townships (Webster and Nkosi 2013). The Food and Allied Workers Union (FAWU), an affiliate of the South African Federation of Trade Unions (SAFTU), is the largest farm workers' union in South Africa. However, unionisation of farm workers in South Africa is very weak. Only 31,000 of FAWU's 114,000 members are farm workers. This is a fraction of the estimated 650,000 to 850,000 farm workers in South Africa. Of the farm workers that FAWU has

organised, most of them are full-time workers with regular employment, meaning that the most precarious workers are falling outside of the ambit of organisation.

At the time of the fieldwork, none of the wheat farm workers in the Free State are organised by a union (Tsotetsi, interview, 2012). According to a FAWU organiser, the union is struggling to get membership both from farms and from companies: *'Workers don't understand how the union works. We need mechanisms to inform people.'* She furthered, *'We are not a union which is going to leave people without a job; we want some of the black farm workers to own farms. There are not many commercial black farmers in the area […] We are not encouraging farm workers to go on strike*' (Tsotetsi, interview, 2012).

Pointing towards one of the big challenges with organising farm workers, she noted how, in dairy, especially in the Welkom area, there are many foreigners who are difficult to recruit because they are not registered. When they do recruit undocumented foreigners, she says, FAWU assists them to connect with Home Affairs and to get assistance from the ward councilor. She explained, *'After workers become a member of the union […] we organise and introduce ourselves to the employer. Some [employers] start to understand that they have been doing wrong things. We get employee representatives who tell them [the workers] the law and the farmer has to cooperate'* (Tsotetsi, interview 2012).

Speaking about farm workers more generally, she said *'Mostly they are not paid as per the sectoral determination of that sector. Farm workers are not getting payslips or benefits, and if they even take off time to go to the doctor they may be victimized […] Most farmers don't want employees to know their rights. They are using them like nobody's business – not as a human being. They treat them badly. If you say 'I realise I am supposed to be registered' you will be dismissed'* (Tsotetsi, interview 2012). She continued, *'There is violence on farms but when*

you consult the employer they say they were very angry [...] We refer the case to the CCMA/police after hearing both sides' (Tsotetsi, interview 2012).

Another strategy which seems to have been relatively successful was collaboration between Department of Labour (DoL) inspectors and FAWU: *'Government has a right to enter farms with no authorisation as far as I know, but the union officials have to have an appointment. We had collaboration in Bothaville between DoL of Kroonstad and the union on just a few farms. We would inform the employer that the union is coming with DoL. It was successful except for one farmer who was very aggressive and only accepted DoL to do investigations'* (Tsotetsi, interview, 2012).

Farmers also asserted that the union, FAWU, is weak and labour is unorganised. In many cases, farmers said that the union had never visited their farm. However, a few farmers said that they had had inspection visits from DoL: *'DoL visited with a written notification. They don't phone to say they are coming. They just say next week we will pay you a visit and we need to see copies of contracts, attendance registers, UIF and workmans' compensation which is paid yearly. Workers don't want to contribute to UIF so if they change jobs they don't get money'* (Hardie, interview, 2012).

At a higher level COSATU is holding workshops on strategies to overcome their difficulties with organising farm workers; 'COSATU and FAWU are holding workshops around strategies to attract and organise farm workers. We work with 'Women on Farms' (Sikhulu Sonke) and FAWU. We support the union that is in fact doing its work. We are not out there to protect our turf, workers must be protected.' (Louw, interview, 2012). COSATU is also looking at the successful living wage campaign that was held in the 1980s and focusing on efforts around collective bargaining (Louw, interview, 2012).

An issue that was raised by the union was that of evictions off farms. This is a widespread trend. Between 1994 and 2004, 2,351,086 people were displaced and 942,303 people were evicted off farms, mostly children (49 per cent) and women (28 per cent) followed by men (23 per cent) (Yates 2011).

> *'We are trying to stop the thing of putting all the people in the location where there is no infrastructure [to which they get evicted]. Employers are playing with the municipality by taking workers to the municipality and then transporting them to the farm. They will work for five days on the farm from Monday to Friday, then they spend the weekend at the location. The Tenure Act with Land Affairs protects some people who were staying on the farm for more than five years. Then they have the right to stay there. But the Act is not working. If you are evicted, the CCMA has no jurisdiction to help with the case. If you go to the location you don't get to own farms at the end of the day because you were evicted and forced to live in the location, without a job, living in a shack. Even locations with infrastructure are not the first choice'* (Tsotetsi, 2012).

Some farmers painted a different picture, arguing that labour chose to move off their farms:

> *'We have sixty full-time workers. We are very fortunate because we are next to the township so they all stay there. In the past, we had some on the farm. They decided to leave on their own and we helped them to buy stands in the township closer to the schools, medical, shopping with more comfortable facilities. There is a tendency throughout the Free State that black people prefer to stay in the townships. The state invested in housing in the past, so we built houses with a subsidy from district municipality and DoA. Now the houses are bare'* (Botha, interview, 2012).

The 1997 Extension of Security of Tenure Act (ESTA) is intended to protect longer-term resident farm workers against eviction and provides visitation rights, grazing, ploughing and burial rights. However, this law may have unintended consequences for some farm workers. One of the wheat producers, Potgieter (interview, 2012) says that this law is the reason behind a number of evictions, because once employees have lived on a farm for too long, producers become responsible for paying their electricity and providing housing. The strategy of producers is to evict farm workers within the timeframe before ESTA becomes legally enforceable.

While precarious working and living conditions for farm workers in South Africa are not new, the trend towards increasing mechanisation and less reliance on labour on farms is significant. This is a widespread trend in grain production, but technologies also exist for highly-mechanised fruit and vegetable farming. Rural areas are notoriously poor in South Africa, as in most of the global south, and agriculture is a key provider of employment, albeit precarious. The weakening of traditional sources of labour power leaves us with a fundamental question: where, in the context of high unemployment, labour displacement and weak unionisation, will new forms of organisation and resistance emerge?

CHAPTER 7

Conclusion

This thesis set out to answer the question 'what are the power relations in the wheat-to-bread commodity chain in South Africa'? This question is important because hierarchies and balances of power in production and distribution are able to shed light on broader issues relating to global inequality, and specifically for food. Food insecurity is widespread in South Africa, and reflects broader patterns of inequality and poverty in the country. As a staple food, bread is particularly important for poorer households that spend large portions of their household income on food.

Food is essential for survival and it has cultural and symbolical significance as part of daily social life. However, our agricultural production and distribution system is a key site for the outward expansion of capital accumulation and this is manifesting in ways that threaten to disrupt our food security and environment. With production increasingly organised on a global scale and influenced by the actions of finance capital actors, the commodification of food is coming into sharp focus. More than ever before the production of food is subject to the logic and imperatives of transnational corporate and finance capital for which farming is a business and food is a commodity.

Jessop (2010:19) notes that globalisation is a chaotic 'complex, incomplete and incompletable process' and the global economy is incoherent. This makes it difficult to study both conceptually and empirically. My approach for this thesis was to use the production, distribution and consumption of a staple food as a lens through which to further an understanding of power relations in the global economy. While the processes of neoliberalism, accelerated globalisation and

financialisation are well documented (Bryan and Rafferty 2006; Fine and Saad-Filho 2017; Lawrence 2014), what is less clearly understood is the particular nature and effects of these processes on locally based actors including economic actors, consumers and workers.

Through empirical research, this case study of a staple food in South Africa demonstrates the actual effects of neoliberal capitalism and the concrete ways in which (global) power gets (re)produced and (re)made in the wheat-to-bread commodity chain.

Drawing on the work of Korpi (1985), Isaacs (1987), Lukes (1995) and Brookes (2018) I developed a definition of social power as the capacity for actors in enduring interdependent relationships, enabled by their resources, to influence the behaviour and decision-making of other actors through reward, punishment and/or the perception of the potential thereof (see Chapter 2). Not only can this definition account for class struggle and conflict, but also the endurance of ongoing materially interdependent relations and the reproduction of the capitalist system.

My ontological approach was to adopt an intentional mode of explanation for the study of power relations, in which the bases of power (power resources) are the starting point for studying power. In this approach to studying power, actors are social agents (collective or individual) in the categories of workers, economic actors and consumers. In Chapter 2 I developed a conceptual outline of four categories of power resources for each of the aforementioned actors: structural, associational, institutional and societal power resources (Schmalz et al. 2018).

In addition to this conceptualisation of power resources for studying social power, I also added market power to my conceptual framework. The ongoing competition between economic actors and

the processes of incessant innovation, mechanisation, consolidation and collusion have implications for different interdependent actors, including for workers and consumers. The world-systems approach to Global Commodity Chains (GCC) aligns with this power resources approach to studying power within the chain, since both approaches conceive of social power as relational and embedded within the enduring dynamics of the capitalist economic system.

This conceptual framework serves as a useful tool for mapping and categorising the power resources of actors, but its use remains limited as a static typology. Its main value lies in its application for analysing real world observations in the field where the capacity for actors to mobilise power resources and their behavior in relation to other actors continually changes through contestation and compromise, and power resources overlap and intersect in a multiplicity of contextually specific ways.

The historical and contemporary accounts of power in the wheat-to-bread commodity chain in South Africa that have been presented in this thesis show that under both heavy state regulation, and now under a neoliberal system, the concentration of corporate actors has been and continues to be an enduring process which is inherent to capitalist development. The accumulation strategies of heavily concentrated TNCs and locally-based food processors have led to both the consolidation and simultaneous shrinking of the wheat industry in South Africa.

Alongside the consolidation of ownership, the privatisation and commodification of knowledge plays a significant role in shaping power relations in the neoliberal era. Research on wheat seed breeding was historically funded by the state and made publically available. Since the 1990s, the withdrawal of the state and universities from substantially contributing to local wheat seed breeding

research has contributed to a crisis in the local wheat seed industry. It has strengthened the justification for TNC seed mergers and further concentration of oligopolistic market power in seed because only large well-resourced seed companies are able to fund the extensive ongoing research needed to maintain and improve wheat seed that is adaptable to highly localised weather patterns, disease and fungus, and other environmental conditions.

Similarly, while information on wheat production, prices, bread distribution and consumer demand was historically publically available and used by the state to regulate each stage of the commodity chain, the privatisation of this knowledge in the neoliberal era has benefited the bread oligopolies (which were initially nurtured under state regulation). Under the neoliberal economic system this industry information is supposed to be kept secret because sharing of this information between competitors is considered anticompetitive behaviour. After being caught for colluding, the bread giants have become much more secretive.

However these bread oligopolies already benefit from asymmetrical access to information on the industry because of their dominance, and they have the economic resources to privately contract large firms such as PWC to research the market and its competitors in order to strategically leverage market to capture rents and to mobilise societal power resources. Smaller economic actors in bread manufacture do not have access to this information. This lack of knowledge limits their ability to effectively understand and predict the market and to strategise on how to effectively mobilise their power resources accordingly.

Issues with the control of knowledge and ownership technology are furthered when one considers the way in which corporate actors leverage institutional power resources to secure their IPRs.

Examples in this thesis include the approaches taken by agchem and agtech TNCs to enforce their IPRs, and the influence of the seed industry on legislation in South Africa and other countries which prevents farmers from saving and replanting 'copyright-protected' seed (see Chapters 5 and 6). These findings highlight the importance of centralising the issues of consolidation, ownership of technology and control over knowledge in debates on the future of food.

These findings also demonstrate the value of a word-systems approach for studying global power. As argued in Chapter 2, developmentalist approaches to studying global chains/networks of production tend to assume that developing countries can develop if local economic actors and workers use governance and upgrading strategies to strengthen their linkages into the global commodity chain by connecting with larger economic actors (that are mostly based in developed countries in the global north). Although some local economic actors and workers in developing countries may benefit from upgrading and governance, this is not equally true for all workers and economic actors globally.

Rather, as this study suggests, connections to global TNCs and globalised commodity markets for food can deepen inequalities between different groups of workers, economic actors and consumers. Oligopolistic corporate actors (many of which are based in the global north), finance actors and (to a limited extent) larger local producers tend to benefit asymmetrically from the current constellation of power relations in the global commodity chain.

McIlroy (2011:85) argues that 'the kind of globalisation that has taken shape represents part of the programme of neoliberalism aimed at expanding markets and weakening unions. It is an integral aspect of that project of capital accumulation centering on removing barriers to it… it is the product

of explicit or implicit political decisions'. This study reinforces this position. Rather than viewing this trajectory as inevitable, this study shows that within structural constraints identifiable actors have the capacity to act, make decisions and influence other actors based on their power resources. The role of the state is important for facilitating class strategies with important consequences for power in the global economy.

Traditionally the state has been tasked with the role of ensuring a level of food security for poor people in South Africa. The shrinking of a local industry for a staple food, growing national poverty and the current and predicted effects of climate change have serious interlinked social consequences. Globally the dilemma of global food production and food security is one of the most pressing contemporary social issues. How do we provide the population of the world with access to sufficient, nutritious and affordable food that is culturally appropriate and minimises harm to the environment?

The hegemonic discourse adopted and disseminated by many governments, NGOs and corporates is that we should strive to feed the population of the world through productivity-enhancing innovation in technology and bioscience combined with market efficiency in financialised trade and global agricultural production. Despite the widespread legitimation of this discourse, the findings of this study suggest that this account of market-led global development is ingenuous. Rather the nature and effects of these processes on locally based actors, as seen in this research on the economic actors, consumers and workers linked into the wheat-to-bread commodity chain in South Africa, are contradictory and uneven.

These findings present us with a paradox. This period in capitalist agriculture is marked by extraordinary technological advancement and increased productivity, and yet smaller economic actors and workers are left behind. Even consumers find themselves in precarious positions (for example consumers were aggrieved by the price-fixing of the bread cartel and concerns about whether industrial bread is nutritious and safe to eat are prevalent). When one considers the inequality in power resources and the concentration of ownership at the heart of this system, it becomes clear that economic efficiency and technical advancement are too narrow to form the basis of a discussion on alternative food systems.

This ability for wheat farm workers in the commodity chain to mobilise their power resources is weakened through displacement (via mechanisation) and precarity. Similar to what was found in this study, Lloyd and James (2008) have argued that it is challenging, not only for organised labour, but even for employers, to raise wages in nodes in the commodity chain that are under the most pressure from economic actors upstream and downstream. The households into which workers are linked also face uncertainty as food prices increase. Under these circumstances, and in the absence of strong organised labour, the sphere of reproduction where bread is consumed is an area for potential mobilisation.

Yet the findings of this research show that consumer organisation is weak and tends to focus on tangible issues in a relatively narrow sense in relation to food safety, regulation, competition issues and pricing. This results in strategies that are legalistic responses to these issues drawing on the associational and institutional power resources of consumers, and in the case of the class action law suit, on societal power resources. While the rights-based legalistic route for resistance is an important one, it does not fundamentally challenge the structure of the food system.

Friedmann (1993:54) argues that 'food politics have shifted to urban issues, that is, to food rather than agriculture.' She attributes this to the consolidation of agricultural producers, the weakening of worker bargaining power and the strength of agrifood corporations. In addition, Clapp (2014:2) suggests that a 'distancing' has emerged in the global food system which has led to low levels of understanding and education around what is of what is happening in the global food system. The commodification of food through global finance markets obscures and depoliticises the issue which makes it 'difficult to tie the activities of finance actors to the ecological and social consequences' (Clapp 2014:2).

Organisations that do make the links between agricultural production, the global capitalist food system and the environment do not necessarily consider themselves to be 'organising' consumers as such, but claim to speak for poor consumers through a more broad 'politics from below' approach that seeks to establish and grow alternatives in response to a critique of the overall food system. The clearest example of this type of movement in South Africa is the South African Food Sovereignty Campaign which brings together movements, organisations, workers and small farmers to create awareness around the issues in the current capitalist food system, to challenge the corporate control of the system, and ultimately to build democratic alternatives to this system at a grassroots level.

One of the strategies of food sovereignty movements is to push for the localisation of food, which Edelman (2012) and Bernstein (2013) argue would require strong regulatory control in order to achieve. This study reinforces the importance of the role of the state for considering a future alternative food system. Lawrence (2014:425) and Clapp and Helleiner (2010) have highlighted the challenges with regulating financial capital given the role that it is playing in commodifying risk which was formerly done by nation states. This is an area that requires further research.

Bobrow-Strain (2012:9) suggests that 'mass produced white bread has long epitomized our contradictory relationship to industrial food, simultaneously embodying the promise of industrial abundance and the dangerous hubris of science'. The contradictions of capitalist agriculture are embodied in a loaf of industrial bread. It is imbued with visions of innovation, productivity, modernity and abundance, yet hidden within it are processes of exclusion and inequality. Bread also contains powerful symbolic and cultural meanings that extend beyond its role as food, which could create a powerful opportunity for societal mobilisation against this logic.

REFERENCE LIST

Abrahams, P. 1946. *Mine Boy: The First Modern Novel of Black South Africa*. Oxford: Heinemann Educational Publishers.

ActionAid. 2010. *Meals Per Gallon: The Impact of Industrial Biofuels on People and Global Hunger*. ActionAid: London. Retrieved March 14, 2013. (https://www.actionaid.org.uk/sites/default/files/doc_lib/meals_per_gallon_final.pdf).

ACBio. 2014. "GM Contamination, Cartels and Collusion in South Africa's Bread Industry." Briefing report. Johannesburg: African Centre for Biosafety.

ACBio. 2015. "Corporate Concentration and Control in the Grains and Oilseed Value Chain in South Africa: A Case Study of the Bunge/Senwes Joint Venture." Johannesburg: African Centre for Biosafety.

ACBio. 2017. "The Three Agricultural-input Mega-Mergers: Grim Reapers of South Africa's Food and Farming Systems." Johannesburg: African Centre for Biosafety.

Alexander, P., and P. Pfaffe. 2014. "Social Relationships to the Means and Ends of Protest in South Africa's Ongoing Rebellion of the Poor: The Balfour Insurrections." *Social Movement Studies* 13(2):204-221.

Algieri, B. 2014. "A Roller Coaster Ride: an Empirical Investigation of the Main Drivers of the International Wheat Price." *Agricultural Economics* 45(4):459-475.

Anwary, A. 2017. "Feminised Workforce in Transnational Production: Bangladesh Ready-made Garment Industry." *History and Sociology of South Asia*, 11(2):174-191.

Araghi, F. 2003. "Food Regimes and the Production of Value: Some Methodological issues." *The Journal of Peasant Studies* 30(2):41-70.

Araghi, F. 2009. "Accumulation by Displacement: Global Enclosures, Food Crisis, and the Ecological Contradictions of Capitalism", *Review* 32(1):113-146.

Armstrong, E. and M. Bernstein. 2008. "Culture, Power and Institutions: A Multi-Institutional Politics Approach to Social Movements." *Sociological Theory* 26(1):74-99.

Arnold, D. and M. Hess. 2017. "Governmentalizing Gramsci: Topologies of Power and Passive Revolution in Cambodia's Garment Production Network." *Environment and Planning A*, 49(10):2183–2202.

Arrighi, G. and J. Drangel. 1986. "The Stratification of the World-Economy: An Exploration of the Semiperipheral Zone." *Review (Fernand Braudel Center)*, 10(1):9-74.

Arrighi G. 1990. "Marxist Century, American Century: The Making and Remaking of the World Labour Movement." *New Left Review* 1(179):29-63.

Arrighi, G. 1994. *The Long Twentieth Century. Money, Power and the Origins of Our Times*. London: Verso.

Arrighi, G. and J. W. Moore. 2001. "Capitalist Development in World Historical Perspective." Pp. 56-75 in *Phases of Capitalist Development. Booms, Crises and Globalizations*, edited by R. Albritton, M. Itoh, R. Westra and A. Zuege. London: Palgrave.

Babones, S. 2015. "What is World-Systems Analysis? Distinguishing Theory from Perspective." *Thesis Eleven* 127(1):3-20.

Bachrach, P. and M.S. Baratz. 1962. "Two Faces of Power." *American Political Science Review* 56: 947-952.

Bair, J. 2005. "Global Capitalism and Commodity Chains: Looking Back, Going Forward." *Competition and Change* 9(2):153-180.

Bair, J. 2008. "Analyzing Global Economic Organization: Embedded Networks and Global Chains Compared." *Economy and Society* 37(3):339-364.

Bair, J. 2014. "Editor's Introduction: Commodity Chains and the World-System." *American Sociological Association* 20(1):1-10.

Bakker, I., and S. Gill, eds. 2003. *Power, Production and Social Reproduction: Human In/security in the Global Political Economy*. UK: Palgrave Macmillan.

Barrientos, S., G. Gereffi and A. Rossi. 2011. *Economic and Social Upgrading in Global Production Networks: Developing a Framework for Analysis*. Capturing the Gains Working Paper 2013, No. 22. Manchester: The University of Manchester.

Barrientos, S., P. Knorringa, B. Evers, M. Visser and M. Opondo. 2016. "Shifting Regional Dynamics of Global Value Chains: Implications for Economic and Social Upgrading in African Horticulture." *Environment and Planning A* 48(7): 1266-1283.

BCG-AgFunder. 2016. "Lessons from the Frontiers of the AgTech Revolution." Boston Consulting Group/AgFunder Report. Retrieved February 15, 2018 (https://agfunder.com/research/bcg-agfunder-report-2016).

Beinart, W. 2001. *Twentieth-Century South Africa*. Oxford University Press.

Bernstein, H. 1992. "Poverty and the poor." Pp. 13-26 in *Rural Livelihoods: Crises and Responses,* edited by H. Bernstein, B. Crow and H. Johnson. Oxford: Oxford University Press.

Bernstein, H. 1994. "Agrarian Classes in Capitalist Development." in *Capitalism and Development*, edited by L. Sklair. London: Routledge.

Bernstein, H. 2004. "The Boys from Bothaville, or the Rise and Fall of King Maize: a South African Story." *Journal of Agrarian Change* 4(4) 492-508.

Bernstein, H. 2008. "Social Change in the South African Countryside? Land and Production, Poverty and Power." *The Journal of Peasant Studies* 25(4):1-32.

Bernstein, H. 2010. *Class Dynamics of Agrarian Change.* Halifax NS: Fernwood.

Bernstein, H. 2013. "Food Sovereignty: A Skeptical View." Conference Presentation at "Food Sovereignty: A Critical Dialogue," Yale University, September.

Bernstein, H., and L. Campling. 2016. "Review Essay: Commodity Studies and Commodity Fetishism I: Trading Down." *Journal of Agrarian Change* 6(2):239-264.

Bezanson, K. 2006. "The Neo-Liberal State and Social Reproduction: Gender and Household Insecurity in the Late 1990s." Pp. 173-214 in *Social Reproduction: Feminist Political Economy Challenges Neoliberalism*, edited by K. Bezanson and M. Luxton. Kingston, Ontario: McGill-Queen's University Press.

Bezanson, K. and M. Luxton, eds. 2006. *Social Reproduction: Feminist Political Economy Challenges Neoliberalism*. Kingston, Ontario: McGill-Queen's University Press.

Bezanson, K. and M. Luxton. 2006. "Introduction: Social Reproduction and Feminist Political Economy." Pp. 3-10 in *Social Reproduction: Feminist Political Economy Challenges Neoliberalism*, edited by K. Bezanson and M. Luxton. Kingston, Ontario: McGill-Queen's University Press.

Bieler, A. 2018. "Agency and the Power Resources Approach: Asserting the Importance of the Structuring Conditions of the Capitalist Social Relations of Production." *Global Labour Journal* 9(2):243-248.

Blom, N. 2007. "Monsanto Warns it may withdraw from Wheat-Seed Market." *Business Day South Africa* (07/06/2007).

Bobrow-Strain, A. 2012. *White Bread: A Social History of the Store-Bought Loaf*. Boston: Beacon Press.

Brewer, B. 2015. "Global Commodity Chains and the Organizational Grounding of Consumer Cultural Production." *Critical Sociology* 41(4-5):717-734.

Brookes, M. 2018. "Power Resources in Theory and Practice: Where to Go from Here." *Global Labour Journal* 9(2):254-257.

Bryan, D. and M. Rafferty. 2006. *Capitalism with Derivatives: A Political Economy of Financial Derivatives, Capital and Class*. Hampshire and New York: Palgrave Macmillan.

Bryan, D., R. Martin and M. Rafferty. 2009. "Financialisation and Marx: Giving Labour and Capital a Financial Makeover." *Review of Radical Political Economics* 41(4):458-472.

Bryan, D. and M. Rafferty. 2011. "Deriving Capital's (and Labour's) Future." *Socialist Review* 47:198-223.

BTI (Board of Trade and Industries) 1926. "Inquiry into the methods and costs of wheat growing and milling." Pretoria: Board of Trade and Industries.

BTI (Board of Trade and Industries) 1939. "Inquiry into the relationship between the prices of wheat, flour, meal, and bread." Board of Trade and Industries Report No. 255. Pretoria: Board of Trade and Industries.

Budlender, J., M. Leibbrandt and I. Woolard. 2015. "South African Poverty Lines: a Review and Two New Money-Metric Thresholds." A Southern Africa Labour and Development Research Unit Working Paper #151. Cape Town: SALDRU, University of Cape Town.

Bundy, C. 1979. *The Rise and Fall of the South African Peasantry*. University of California Press: Berkeley and Los Angeles.

Burawoy, M. 2013. "Marxism after Polanyi." Pp. 34-52 in *Marxisms in the 21st Century: Crisis, Critique and Struggle*, edited by M. Williams and V. Satgar. Johannesburg: Wits University Press.

Busch, L. and A. Juska. 1997. "Beyond Political Economy: Actor Networks and the Globalization of Agriculture." *Review of International Political Economy* 4(4):688-708.

Buthelezi, P.M. 2016. "Why is South Africa Poisoning its People?" Press Statement, issued November 17, 2016, by Prince Mangosuthu Buthelezi, President of the Inkatha Freedom Party, and traditional Prime Minister to the

Zulu Monarch and Nation. Retrieved November 8, 2017 (http://www.ifp.org.za/newsroom/south-africa-poisoning-people/).

Butler, A. 1998. *Democracy and Apartheid: Political Theory, Comparative Politics and the Modern South African State.* Basingstoke: Macmillan.

Carnegie Commission. 1932. *The Poor White Problem in South Africa: Report of the Carnegie Commission: Joint Findings and Recommendations.* Stellenbosch: Ecclesia.

Carswell, G. and G. De Neve. 2013. "Labouring for Global Markets: Conceptualising labour agency in global production networks." *Geoforum* 44:62-70.

Cattani D., V. L. De Liz Oliveira Cavalli, C. E. Heinz Rieg, J. T. Domingues, T. Dal-Cim, C. I Tasca, F.R. Meno Barreto Silva, and A. Zamoner. 2014. "Mechanisms underlying the Neurotoxicity Induced by Glyphosate-based Herbicide in Immature Rat Hippocampus: Involvement of Glutamate Excitotoxicity." *Toxicology* (320):34-45.

Chun, J. 2009. *Organizing at the Margins: The Symbolic Politics of Labour in South Korea and the United States.* Ithaca, NY: Cornell University Press.

Clapp, J. and E. Helleiner. 2010. "Troubled futures? The Global Food Crisis and the Politics of Agricultural Derivatives Regulation." *Review of International Political Economy* 19(2):181-207.

Clapp, J. 2014. "Financialisation, Distance and Global Food Politics." *The Journal of Peasant Studies* 41(5):797-814.

Clelland, D. 2014. "The Core of the Apple: Dark Value and Degrees of Monopoly in Global Commodity Chains." *American Sociological Association* 20(1):82-111.

Cock, J., K. Fakier, K. Joynt and R. Roman. 2008. "Connecting Bread, Land and Peace." *The South African Labour Bulletin* 32(3)

Coe, N., P. Dicken and M. Hess. 2008. "Global Production Networks: Realizing the Potential." *Journal of Economic Geography* 8:271-295.

Coe, N., P. Dicken, M. Hess and H.W. Yeung. 2010. "Making Connections: Global Production Networks and World City Networks." *Global Networks* 10(1):138-149.

Coe, N. and M. Hess. 2013. "Global Production Networks, Labor and Development." *Geoforum* 44:4-9.

Coleman, A. 2017. "Using No-Till Practices for Long-Term Sustainability." Farmer's Weekly Online. Retrieved February 23, 2018 (https://www.farmersweekly.co.za/crops/field-crops/using-no-till-practices-long-term-sustainability/)

Collins, J. 2013. "A Feminist Approach to Overcoming the Closed Boxes of the Commodity Chain." Pp. 27-37 in *Gendered Commodity Chains: Seeing Women's Work and Households in Global Production* edited by W. Dunaway. Stanford, CA: Stanford University Press.

Competition Commission of South Africa. 1998. *The Competition Act: An Introduction*. Pretoria: Competition Commission SA.

Competition Commission of South Africa. 2007. *Competition Commission South Africa Annual Report 2006/2007*. Pretoria: Competition Commission SA.

Competition Commission. 2008. *Competition Commission South Africa Annual Report 2007/2008*. Pretoria: Competition Commission SA.

Compton, J., S. Wiggins and S. Keats. 2009. *Impact of the Global Food Crisis on the Poor: What is the Evidence?* London: Overseas Development Institute.

Compton, J., S. Wiggins and S. Keats. 2010. "Impact of the Global Food Crisis on the Poor: what is the Evidence?" *Overseas Development Institute*. Retrieved November 13, 2017 (https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/6371.pdf).

Crotty, J. 2000. "Slow Growth, Destructive Competition, and Low Road Labor Relations: A Keynes-Marx-Schumpeter Analysis of Neoliberal Globalization." Working Paper Series No. 6, Political Economy Research Institute, University of Massachusetts, Amherst.

Crotty, J. 2009. "Structural Causes of the Global Financial Crisis: a Critical Assessment of the 'New Financial Architecture'." *Cambridge Journal of Economi*cs 33(4, 1 July 2009):563-580.

Dahl, R. 1957. "The Concept of Power." *Behavioral Science* 2:201-215.

Dallas, M., S. Ponte and T. J. Sturgeon. 2017. "A Typology of Power in Global Value Chains." Working Paper in Business and Politics No. 92, Copenhagen Business School, Frederiksberg.

Davis, E. 1931. "Some Aspects of the Marketing of Farm Products in South Africa". *1983 SAJE*. 51(2):167-187.

Davis, D., R. Kaplinsky and M. Morris. 2018. "Rents, Power and Governance in Global Value Chains." *Journal of World-Systems Research* 24(1):43-71.

Deininger, K. and H. P. Binswanger. 1995. "Rent Seeking and the Development of Large-Scale Agriculture in Kenya, South Africa, and Zimbabwe" *Economic Development and Cultural Change* 43(3):493-522.

De Roos A.J., S. H. Zahm, K. P. Cantor, D. Weisenburger, F. Holmes, L. Burmeister and A. Blair. 2003. "Integrative Assessment of Multiple Pesticides as Risk Factors for Non-Hodgkin's Lymphoma Among Men." *Occupational and Environmental Medicine* 60(9, e11)

Derudder, B. and F. Witlox. 2010. "World Cities and Global Commodity Chains: an Introduction." *Global Networks* 10(1):1-11.

DoAFF. 2013a. *Wheat Market Value Chain Profile.* Pretoria: Department of Agriculture, Forestry and Fisheries.

DoAFF. 2013b. *Abstract of Agricultural Statistics*. Pretoria: Department of Agriculture, Forestry and Fisheries.

DoAFF. 2014. 'The South African Grain Markets Quarterly Early Warning Report 01 of 2014', Pretoria

DoAFF. 2016. "A Profile of the South African Wheat Market Value Chain." Report by the Department of Agriculture, Forestry and Fisheries. Retrieved November 8, 2017 (http://www.nda.agric.za/doaDev/sideMenu/Marketing/Annual%20Publications/Commodity%20Profiles/field%20crops/Wheat%20Market%20Value%20Chain%20Profile%20%202016.pdf).

Ducastel, A., and W. Anseeuw. 2015. "Agriculture as an Asset Class: Financialisation of the (South) African Farming Sector." Conference presentation at "Rural Transformations and Food Systems: The BRICS and agrarian change in the global South," Cape Town, April.

Dunaway, W. and D. A. Clelland. 1995. "Review of 'Commodity Chains and Global Capitalism' by G. Gereffi and M. Korzeniewicz (eds)." *Journal of World-Systems Research* 1(1):415-422.

Dunaway, W. 2001. "The Double Register of History: Situating the Forgotten Woman and Her Household in Capitalist Commodity Chains." *Journal of World-Systems Research* VII(I/Spring):2-29.

Dunaway, W., ed. 2013. *Gendered Commodity Chains: Seeing Women's Work and Households in Global Production*. Stanford, CA: Stanford University Press.

Dunaway, W. 2014. "Bringing Commodity Chain Analysis Back to its World-Systems Roots: Rediscovering Women's Work and Households." *American Sociological Association* 20(1):64-81.

Edelman, M. 2013. "Food Sovereignty: Forgotten Genealogies and Future Regulatory Challenges." Presentation at "Food Sovereignty: A Critical Dialogue," Yale University, September.

Edwards, C. 2016. "Agricultural Subsidies." Downsizing the Federal Government. Retrieved February 21, 2018 (https://www.downsizinggovernment.org/agriculture/subsidies).

EFF. 2014. "Now is the Time for Economic Freedom!" Election Manifesto produced by the Economic Freedom Fighters. Retrieved November 8, 2017 (https://www.sajr.co.za/docs/default-source/pdf/2014/eff-elections-manifesto---sajr.pdf?sfvrsn=2).

Epstein, G. 2005. "Introduction: Financialization and the world economy." Pp 3–16 in *Financialization and the World Economy* edited by G. Epstein. Cheltenham: Edwar Elgar.

ETC Group. 2005. "Global Seed Industry Concentration 2005." *Communiqué* (90): September/October 2005. http://www.etcgroup.org/sites/www.etcgroup.org/files/publication/48/01/seedmasterfin2005.pdf

Federal Ministry of Finance 2017. "26th Subsidy Report." Federal government report on trends in federal financial assistance and tax benefits for the years 2015 to 2018, Berlin. Retrieved February 21, 2018 (http://www.bundesfinanzministerium.de/Content/EN/Standardartikel/Press_Room/Publications/Brochures/2018-01-24-26th-subsidy-report-summary-download.pdf?__blob=publicationFile&v=8).

Ferguson, J. 2006. *Global Shadows: Africa in the Neoliberal World Order*. Durham and London: Duke University Press.

Fernández, V. 2014. "Global Value Chains in Global Political Networks: Tool for Development or Neoliberal Device?" *Review of Radical Political Economics* 47(2):209-230.

Fine, B. and A. Saad-Filho. 2017. "Thirteen Things You Need to Know About Neoliberalism." *Critical Sociology* 43(4-5):685–706.

Finger, L. K. 2018. "Interest Group Influence and the Two Faces of Power." *American Politics Research* :1–35.

Fooks, G. J., A. B. Gilmore, K. E. Smith, J. Collin, C. Holden and K. Lee. 2011. "Corporate Social Responsibility and Access to Policy Elites: An Analysis of Tobacco Industry Documents." *PLoS Medicine* 8(8):1-12.

Fortune 500. 2018. "Company profile: John Deere." Retrieved February 21, 2018 (http://fortune.com/fortune500/deere/).

Fossey, E., C. Harvey, F. McDermott and L. Davidson. 2002. "Understanding and Evaluating Qualitative Research." *Australian & New Zealand Journal of Psychiatry* 36(6):717-732.

Foucault, M. 1980. "Two Lectures." Pp. 78-108 in *Power/Knowledge*, edited by C. Gordon. New York: Pantheon Books.

Friedmann, H. 1987. "International Regimes of Food and Agriculture Since 1870." Pp 258-276 in *Peasants and peasant societies*, edited by T. Shanin. Oxford: Basil Blackwell.

Friedmann, H. 1993. *"The Political Economy of Food: A Global Crisis*." *New Left Review* 197:27-59.

Friedmann, H. 2005. "From Colonialism to Green Capitalism: Social Movements and the Emergence of Food Regimes." Pp 229–267 in *New Directions in the Sociology of Global Development* edited by F.H. Buttel, and P. McMichael. Oxford: Elsevier.

Friedmann, H. 2016. "Commentary: Food Regime Analysis and Agrarian Questions: Widening the Conversation." *The Journal of Peasant Studies* 43(3):671-692.

Friedmann, H. and P. McMichael. 1989. "Agriculture and the State System: the Rise and Fall of National Agricultures, 1870 to the Present." *Sociologia Ruralis* 29(2):93–117.

Friedman, S. 1981. "Political Implications of Industrial Unrest in South Africa." African Studies Seminar Paper 109, presented at University of the Witwatersrand, Johannesburg, September.

Frost & Sullivan. 2008. *South African Markets for Fertiliser Chemicals*. Cape Town: Frost & Sullivan

Fuchs, D. and M. Lederer. 2007. "The Power of Business." *Business and Politics* 9(3):1-17.

Gallas, A. 2016. "There is Power in a Union: A Strategic-Relational Perspective on Power Resources." in *Monetary Macroeconomics, Labour Markets and Development: Festschrift for Hansjörg Herr* edited by A. Truger, F. Hein, M. Heine and F. Hoffer. Marburg: Metropolis.

Gallas, A. 2018. "Class Power and Union Capacities: A Research Note on the Power Resources Approach." *Global Labour Journal* 9(3):348-352.

Gereffi, G. 1994. "The Organisation of Buyer-Driven Commodity Chains: How the US Retailers Shape Overseas Production Networks." Pp. 95-122 in *Commodity Chains and Global Capitalism*, edited by G. Gereffi and M. Korzeniewicz. London: Praeger.

Gereffi, G. 2014. "Global Value Chains in a Post-Washington Consensus World." *Review of International Political Economy* 21(1):9-37.

Gereffi, G. and M. Korzeniewicz, eds. 1994. *Commodity Chains and Global Capitalism*. Westport, Connecticut, London: Praeger.

Gereffi, G., J. Humphrey and T. Sturgeon. 2005. "The Governance of Global Value Chains." *Review of International Political Economy* 12(1):78-104.

Gibbon, P., J. Bair and S. Ponte. 2008. "Governing Global Value Chains: an Introduction." *Economy and Society* 37(3):315-338.

Gibbon, P. and S. Ponte. 2008. "Global Value Chains: From Governance to Governmentality?" *Economy and Society* 37(3):365-392.

Gill, S. 2003. "Social Reproduction of Affluence and Human In/Security." Pp. 190-207 in *Power, Production and Social Reproduction: Human In/security in the Global Political Economy*, edited by I. Bakker and S. Gill. UK: Palgrave Macmillan.

Girardi, D. 2012. "Do Financial Investors Affect the Price of Wheat?" MPRA Paper No. 40285.

Gramsci, A. [1971] 2010. "Selections from the Prison Notebooks of Antonio Gramsci." In *Selections from the Prison Notebooks of Antonio Gramsci*, edited and translated by Q. Hoare and G. Smith. New York: International Publishers.

Greenberg, S. 2010. "Status Report on Land and Agricultural Policy in South Africa 2010", Research Report 40, Institute for Poverty, Land and Agrarian Studies, University of Western Cape, Cape Town

Greenberg, S. 2017. "Corporate power in the agro-food system and the consumer food environment in South Africa." *The Journal of Peasant Studies* 44(2):467-496.

Grimbeek, S., and B. Lekezwa. 2013. "The Emergence of More Vigorous Competition and the Importance of Entry – Comparative Insights from Flour and Poultry." CCRED Working Paper 2013/1. Johannesburg: Centre for Competition Regulation and Economic Development.

Groenewald, J.A. 2000. "The Agricultural Marketing Act: A Post Mortem." *South African Journal of Economics*. 68(3):161-176.

Guyton, K. Z., D. Loomis, Y. Grosse, F. Ghissassi, L. Benbrahim-Tallaa, N. Gooha, C. Scoccianti, H. Mattock and K. Straif. 2015. "Carcinogenicity of Tetrachlorvinphos, Parathion, Malathion, Diazinon, and Glyphosate." *The Lancet Oncology*. 16(5):490-491.

Guzzini, S. 1993. "Structural Power: The Limits of Neorealist Power Analysis." *International Organization* 47(3):443-478.

Hall, R. 2009. "Dynamics in the Commercial Farming Sector." Pp. 121-130 *Another Countryside? Policy Options for Land and Agrarian Reform in South Africa* edited by R. Hall. Institute of Poverty, Land and Agrarian Studies, Cape Town.

Harvey, D. 2011. *The Enigma of Capital: And the Crises of Capitalism*. London: Profile Books.

Helliker, K. 2013. "Reproducing White Commercial Agriculture." Seminar Paper presentation at "Critical Studies Seminar Series," Rhodes University, Grahamstown, February.

Henderson, J., P. Dicken, M. Hess, N. Coe and H. W. Yeung. 2002. Global Production Networks and the Analysis of Economic Development." *Review of International Political Economy* 9(3):436-464.

Henn, M. 2011. "The Speculator's Bread: What is Behind Rising Food Prices?" *European Molecular Biology Organisation Reports* 12(4):296-301.

Hess, M. 2008. "Governance, Value Chains and Networks: an Afterword." *Economy and Society* 37(3):452-459.

Hess, M. and H. W. Yeung. 2006. "Whither Global Production Networks in Economic Geography? Past, Present and Future." *Environment and Planning A*, 38(7):1193–1204.

Hobson, S. 2006. "A Trade and Poverty Case Study: The Effects of Trade Liberalisation on the Wheat flour-Bread Value Chain in South Africa." Report for the Trade and Poverty Project, Southern Africa Labour and Development Research Unit. Cape Town: SALDRU.

Hofman, A. and M. Aalbers. 2017. "Spaces of Lobbying." *Geography Compass* 11(3):1-17.

Hopkins, T. and I. Wallerstein. 1977 "Patterns of Development of the Modern World-System." *Review* 1(2, 1977): 11-45,60.

Hopkins, T. and I. Wallerstein. 1986. "Commodity Chains in the World-Economy Prior to 1800." *Review (Fernand Braudel Center)* 10(1):157-17.

Hughes, A. and S. Reimer. Eds. 2004. *Geographies of Commodity Chains*. London and New York: Routledge.

ISAAA. 2016. "Global Status of Commercialized Biotech/GM Crops." ISAAA Brief No. 52, 2016. ISAAA: Ithaca, NY.

Isaac, J. 1987. "Beyond the Three Faces of Power: A Realist Critique." *Polity* 20(1):4-31.

Jayasumana C, P. Paranagama, S. Agampodi, C. Wijewardane, S. Gunatilake, and S. Siribaddana. 2015. "Drinking Well Water and Occupational Exposure to Herbicides is Associated with Chronic Kidney Disease, in Padavi-Sripura, Sri Lanka." *International Journal of Environmental Health* 14(1):6

Jessop, B. 1990. "Regulation theories in retrospect and prospect." *Economy and Society* 19(2):153-216.

Jessop, B. 2010. "Globalization and the State." Pp. 19- 34 in *Handbook of Employment and Society*, edited by S. McGrath-Champ, A. Herod and A. Rainnie. Cheltenham, UK: Edward Elgar Publishing Ltd.

Jessop, B. 2016. "A cultural political economy of legal regulation of monopoly and competition." *Environment and Planning* 48(12):2541–2546.

Jessop, B. 2018. "The World Market, 'North-South' Relations, and Neoliberalism." *Alternate Routes* 29:207-228.

Joynt, K. 2010. "'We Really Have to Cut Down on Eating': Poverty and Food Prices." *South African Labour Bulletin* 34(2)

Kaplinsky, R. and M. Morris. 2012. *A Handbook for Value Chain Research, International Development Research Center*. Retrieved March 28, 2013 (http://hdl.handle.net/10568/24923).

Kellermann, M. 2005. "Power Resources Theory and Inequality in the Canadian Provinces." presented at the Harvard Comparative Political Economy Workshop, October 7-8, Cambridge

Kenny, B. 2004. "Selling Selves: East Rand Retail Sector Workers Fragmented and Reconfigured." *The Journal of Southern African Studies* 30(3/Sep.):477-498.

Kenny, B. 2014. "Citizen Wal-Mart? South African Food Retailing and Selling Development." *New South African Review* 4:56-73.

Kirsten, J., L. Edwards and N. Vink. 2007. "Distortions to Agricultural Incentives in South Africa." Agricultural Distortions Working Paper 38. World Bank Development Research Group.

Kirsten, J., J. Van Zyl and J. Van Rooyen. 1994 "South African Agriculture in the 1980s" *South African Journal of Economic History* 9(2):19-48.

Kirsten, J., and J. Van Zyl. 1996. "The Contemporary Agricultural Policy Environment: Undoing the Legacy of the Past." in *Agricultural Land Reform in South Africa* edited by J. Van Zyl, J. Kirsten and H.P. Binswanger. Cape Town: Oxford University Press.

Korpi, W. 1985. "Power Resources Approach vs. Action and Conflict: On Causal and Intentional Explanations in the Study of Power." *Sociological Theory* 3(2):31-45.

Kraus, J. 2002. "Capital, power and business associations in the African political economy: a tale of two countries, Ghana and Nigeria." *Journal of Modern African Studies* 40(3):395-436.

Kriel, G. 2017. 'Converting From Traditional to Conservation farming." *Farmers Weekly Online*. Retrieved February 15, 2018 (https://www.farmersweekly.co.za/crops/field-crops/converting-traditional-conservation-farming/).

Kurten, A.A. 2002. *Introduction to Derivatives: A South African Perspective. First Edition*. Johannesburg: Prebon Yamane SA (Pty) Limited.

Lard, S. and K. Dörre. 2014. "The Power Resources Approach: A Tool for Analysis Union Action Assets." *Industrial Relations* 21(3):217-237.

Lawrence, G. 2014. "Financialisation." *The Journal of Peasant Studies*. 41(3):421-444

Lenta, G. 1983. "Reserved Land in South Africa: A Century of Declining Productivity." *Perspectives in Economic History*. 2:12–24.

Lev-Ram, M. 2017. "John Deere Is Paying $305 Million for This Silicon Valley Company." *Fortune online*. Retrieved February 21, 2018 (http://fortune.com/2017/09/06/john-deere-blue-river-acquisition/?iid=recirc_f500profile-zone1).

Levy, D. 2008. "Political Contestation in Global Production Networks." *The Academy of Management Review* 33(4):943-963.

Lewis, D. 2012. *Thieves at the Dinner Table: Enforcing the Competition Act*. Auckland Park: Jacana Media.

Lianos, L. and D. Katalevsky. 2017. "Merger Activity in the Factors of Production Segments of the Food Value Chain: A Critical Assessment of the Bayer/Monsanto Merger." CLES Policy Paper Series 2017/1. London: UCL.

Liptak, A. 2013. "Supreme Court Supports Monsanto in Seed-Replication Case." *New York Times*. Retrieved February 23, 2018 (http://www.nytimes.com/2013/05/14/business/monsanto-victorious-in-genetic-seed-case.html).

Lloyd, C. and S. James. 2008. "Too much pressure? Retailer Power and Occupational Health and Safety in the Food Processing Industry." *Work, Employment and Society* 22(4):713-730.

Ludwig, C. and E. Webster. 2017. "Changing Forms of Power and Municipal Workers' Resistance in Johannesburg." in *Southern Resistance in Critical Perspective: The Politics of Protest in South Africa's Contentious Democracy* edited by M. Paret, C. Runciman and L. Sinwell. Abingdon: Routledge.

Lukes, S. 1974. "Power: A Radical View." *Power: Critical Concepts* 2:233–68.

Lukes, S. 2005. *Power: A Radical View; Second Edition*. Houndmills: Palgrave Macmillan.

Luxton, M. 2006. "Feminist Political Economy in Canada and the Politics of Social Reproduction." Pp. 11-44 in *Social Reproduction: Feminist Political Economy Challenges Neoliberalism*, edited by K. Bezanson and M. Luxton. Kingston, Ontario: McGill-Queen's University Press.

Mahutga, M. 2014. "Global Production Networks and International Inequality: Making a Case for a Meso-Level Turn in Macro-Competitive Sociology." *American Sociological Association* 20(1):11-37.

Majewski, M. S., R. H. Coupe, W.T. Foreman, and P. D. Capel. 2014. "Pesticides in Mississippi Air and Rain: a Comparison between 1995 and 2007." *Environmental Toxicology and Chemistry* 33(6):1283–93.

Malan, M.P.A. 1953. "Fruits of the National Regime." Inligtingsdiens van die Nasionale Party, Johannesburg.

Marais, H. 2011. *South Africa Pushed to the Limit: The Political Economy of Change*. London: Zed Books.

Marcus, T. 1989. *Modernizing Super-Exploitation: Restructuring South African Agriculture*. London: Zed Books.

Marx, K. [1867] 1996. *Das Kapital: A Critique of Political Economy, Volume 1*. Washington: Regnery Publishing.

Mbongwa, M, N. Vink and J. van Zyl. 2000. "The Agrarian Structure and Empowerment: The Legacy. Pp 6–21 in *South African Agriculture at the Crossroads: An Empirical Analysis of Efficiency, Technology and Productivity* edited by Thirtle, Colin, J. van Zyl, and N. Vink. Basingstoke: Macmillan.

Mchiza Z., N. Steyn and J. Hill. 2015. "A Review of Dietary Surveys in the Adult South African Population from 2000 to 2015." *Nutrients* 7:8227–8250.

McGrath-Champ, S., A. Rainnie, G. Pickren and A. Herod. 2015. "Global Destruction Networks, the Labour Process and Employment Relations." *Journal of Industrial Relations* 57(4):624-640.

McIlroy, J. 2011. Britain: How Neoliberalism Cut Unions Down to Size. Pp. 82-104 in *The International Handbook of Labour Unions: Responses to Neoliberalism* edited by G. Gall, A. Wilkinson and R. Hurd. Cheltenham, UK: Edward Elgar Publishing Ltd.

McMichael, P. 1992. "Tensions between national and international control of the world food order: contours of a new food regime." *Sociological Perspectives* 35(2):343-65.

McMichael, P. 2000. "The Power of Food." *Agriculture and Human Values* 17:21-33.

McMichael P. 2003. "Food Security and Social Reproduction: Issues and Contradictions." In *Power, Production and Social Reproduction*, edited by I. Bakker and S. Gill. London: Palgrave Macmillan.

McMichael, P. 2009. "A Food Regime Genealogy." *Journal of Peasant Studies* 36(1):139-169.

Mesnage, R., M. Arno, M. Costanzo, M. Malatesta, G. E. Seralini, and M. N. Antoniou. 2015. "Transcriptome Profile Analysis Reflects Rat Liver and Kidney Damage Following Chronic Ultra-Low Dose Roundup Exposure." *International Journal of Environmental Health* 14:70.

Mintz, S. W. 1986. *Sweetness and Power: The Place of Sugar in Modern History*. New York: Penguin Books.

Mncube, L. 2013. "The South African wheat flour cartel: Overcharges at the Mill." *Journal of Industry Competition and Trade* 14(4):00–00.

Mohamed, S. 2008. "Economic Policy, Globalisation and the Labour Movement: Changes in the Global Economy from the Golden Age to the Neoliberal Era." Global Labour University Working Paper 1, Feb 2008. Johannesburg: University of the Witwatersrand.

Moll, P. 1983. "A History and an Analysis of the Bread Subsidy in South Africa." Cape Town: SALDRU.

Monsanto. 2016. "Growing Better Together." 2016 Sustainability Report produced by Monsanto. Retrieved February 23, 2018 (https://monsanto.com/app/uploads/2017/05/2016-sustainability-report-2.pdf).

Murdoch, J., T. Marsden and J. Banks. 2000. "Quality, Nature and Embeddedness: Some Theoretical Considerations in the Context of the Food Sector." *Economic Geography* 76(2):107-125.

Murphy, S. 2006. "Concentrated Market Power and Agricultural Trade." Ecofair Trade Dialogue Discussion Paper No. 1, August 2006. Heinrich Böll Stiftung, The Green Political Foundation, Germany.

Murphy, S., D. Burch and J. Clapp. 2012. "Cereal Secrets: The World's Largest Grain Traders and Global Agriculture." Oxfam Research Report, Oxfam International, Oxford, UK.

Myers J.P., M.N. Antoniou, B. Blumberg, L. Carroll, T. Colborn, L. G. Everett, M. Hansen, P. J. Landrigan, B. P. Lanphear, R. Mesnage, L. N. Vandenberg, F. S. vom Saal, W. V. Welshons, and C. M. Benbroo. 2016. "Concerns over use of Glyphosate-based Herbicides and Risks Associated with Exposures: a Consensus Statement". *Environmental Health.* 15(19):13-19.

NAMC. 2009. *Report on the Section 7 Committee Evaluating the Deregulation Process: The Wheat-To-Investigation into Bread Value Chain*. Johannesburg: National Agricultural Marketing Council.

NDA. 1985. *Abstract of Agricultural Statistics*. Pretoria: National Department of Agriculture.

NDA. 1992. *Agricultural Census.* Pretoria: National Department of Agriculture.

NDA. 2008. *Abstract of Agricultural Statistics.* Pretoria: National Department of Agriculture.

Neilson, J., B. Pritchard and H. W. Yeung. 2014. "Global Value Chains and Global Production Networks in the Changing International Political Economy: an introduction." *Review of International Political Economy* 21(1):1-8.

Newman, S. 2009. "Financialisation and Changes in the Social Relations along Commodity Chains: the Case of Coffee." *Review of Radical Political Economics* 41(4):539-559.

NP (National Party). 1948. "Die Werker's se Ware Vriend - Die Nasionale Party." National Party pamphlet. Cape Town: University of Cape Town, Government Publications.

O'Meara, D. 1977. "The Afrikaner Broederbond: 1927-1948: Class Vanguard of Afrikaner Nationalism." *Journal of Southern African* Studies 3(2):156-186.

O'Meara, D. 1983. *Volkscapitalisme: Class, Capital and Ideology in the Development of Afrikaner Nationalism, 1934-1948*. Cambridge: Cambridge University Press.

OCED (Organisation for Economic Co-operation and Development). 2006. "Agricultural Policy Reform in South Africa." OECD Policy Brief.

Oxfam. 2014a. *Even it Up: Time to End Extreme Inequality*. Oxford: Oxfam

Oxfam. 2014b. *Hidden Hunger in South Africa: The Faces of Hunger and Malnutrition in a Food-Secure Nation*. Oxford: Oxfam. Retrieved 23 February 2018 (http://www.oxfam.org/en/grow/research/hidden-hunger-south-africa).

Oxfam. 2014c. *Working for the few: Political capture and economic inequality: Oxfam Briefing Paper*. Oxford: Oxfam

Oxfam. 2018. *Reward Work, Not Wealth: Oxfam Briefing Paper Summary*. Oxford: Oxfam

Palpacuer, F. 2008. "Bringing Social Context back in: Governance and Wealth Distribution in Global Commodity Chains." *Economy and Society* 37(3):393-419.

Parenti, C. 2011. "When Food Shortages Mean War." *Salon*. Retrieved February 21, 2018 (https://www.salon.com/2011/07/19/food_shortage_politics/).

Patel, R. 2007. *Stuffed and Starved: Markets, Power and the Hidden Battle for the World's Food System*. London: Portobello Books.

Pedraza-Acosta, I. and J. Mouritsen. 2018. "Dynamisms of financialization: Circuits of power in globalized production networks." *Human Relations* 71(6):845–866.

Phillips, N. 2017. "Power and inequality in the global political economy." *International Affairs* 93(2):429–444.

Piesse, J., T. Doyer, C. Thirtle and N. Vink. 2005. "The changing role of grain cooperatives in the transition to competitive markets in South Africa." *The Journal of Comparative Economics* 33:197-218.

Piven, F. F., and R. A. Cloward. 1979. *Poor people's movements: Why they succeed, how they fail.* New York: Vintage Books.

Polsby, N.W. 1980. *Community Power and Political Theory. A Further Look at Problems of Evidence and Inference.* Second edition. New Haven: Yale University Press.

Porter, M. 1985. *Competitive Advantage: Creating and Sustaining Superior Performance.* New York: The Free Press.

PWC. 2012. South African Retail and Consumer products outlook 2012-2016, Johannesburg: PWC

Quark, A. 2014. "Private Governance, Hegemonic Struggles and Institutional Outcomes: Transnational Cotton Commodity Chain." *American Sociological Association*, 20(1):38-63.

Rainnie, A., A. Herod and S. McGrath-Camp. 2011. "Review and Positions: Global Production Networks and Labour." *Competition and Change* 15(2):115-169.

Raj-Reichert, G. 2012. "Safeguarding Labour in Distant Factories: Health and Safety Governance in an Electronics Global Production Network." *Geoforum* 44(1.2013):23-31.

Rakhudu, M. and A. Kalicharan. 2008. "Bread and Milling Cartel" *Competition News* 28.

Reardon, T., C.P. Timmer, C.B. Barrett and J. Berdegué. 2003. "The rise of Supermarkets in Africa, Asia and Latin America." *American Journal of Agricultural Economics* 85(5):1140-1146.

Reilly, M. 2017. "A Fight Over Tractors in America's Heartland Comes Down to Software." Retrieved February 21, 2018 (https://www.technologyreview.com/s/603953/a-fight-over-tractors-in-americas-heartland-comes-down-to-software/).

Richards, C.S. 1936. "Subsidies, quotas, tariffs, and the excess cost of agriculture in South Africa." *South African Journal of Economics* 3:365-403.

Roscigno, V. 2011. "Power, Revisited." *Social Forces* 90(2):349-374.

Rossi, A. 2013. "Does Economic Upgrading Lead to Social Upgrading in Global Production Networks? Evidence from Morocco." *World Development*. 46: 223-233.

Roy, S. 2017. "Rent and Surplus in the Global Production Network: Identifying 'Value Capture', from the South, Agrarian South." *Journal of Political Economy* 6(1):32–52.

Rubel, W. 2011. *Bread: A global history*. London: Reaktion Books Ltd.

Russi, L. 2013. *Hungry Capital: The Financialisation of Food.* Winchester: Zero Books.

SAAU. 1981. "A Review of the Development of Agricultural Co-operation in the RSA." Pretoria: SAAU (South African Agricultural Union).

SABC 2017. "SA to import about 60% of its wheat." *SABC News Online: 10 December 2017*. Retrieved February 21, 2017. (http://www.sabcnews.com/sabcnews/be-sa-to-import-about-60-of-its-wheat/).

Samuels, L.H. 1947. "Aspects of 'Controlled' Marketing in the Union." *2000 SAJE*. 68(15):47-59.

Sanders, D., L. Reynolds and L. Lake. 2017. "Hunger is Still Killing South Africa's Children." *Mail & Guardian online*. Retrieved February 15, 2018 (https://mg.co.za/article/2017-12-01-00-hunger-is-still-killing-south-africas-children).

Sapa. 2008a. "COSATU March Hits Hard." Retrieved July 24, 2008 (http://news.iafrica.com/sa/425223.htm).

Sapa. 2008b. "COSATU Warns of Food Riots." Retrieved April 14, 2008 (http://www.news24.com/News24/South_Africa/Politics/0,,2-7-12_2305864,00.html)

Schinasi L., and M. E. Leon. 2014. "Non-Hodgkin Lymphoma and Occupational Exposure to Agricultural Pesticide Chemical Groups and Active Ingredients: a Systematic Review and Meta-Analysis." *International Journal of Environmental Research and Public Health* 11(4):4449–52.

Schmalz, S., C. Ludwig and E. Webster. 2018. "The Power Resources Approach: Developments and Challenges." *Global Labour Journal* 9(2):113-134.

Schumpeter, J. [1942] 1975. *Capitalism, Socialism and Democracy*. New York: Harper.

Schumpeter, J. 1954. *History of Economic Analysis*. London: Allen and Unwin.

Scully, B. 2016. "From the Shop Floor to the Kitchen Table: The Shifting Centre of Precarious Workers' Politics in South Africa." *Review of African Political Economy* 43(148): 295-311.

Selwyn, B. 2011. "Beyond Firm-Centrism: Re-Integrating Labour and Capitalism into Global Commodity Chain Analysis." *Journal of Economic Geography* 12(1):205-226.

Selwyn, B. 2013. "Social Upgrading and Labour in Global Production Networks: A Critique and an Alternative Conception." *Competition and Change*, 17(1): 75-90.

Selwyn, B. 2014. "Commodity Chains, creative destruction and global inequality: a class analysis." *Journal of Economic Geography* 15(2):253-274.

Shiva, V. 2004. "The Future of Food: Countering Globalisation and Recolonisation of Indian Agriculture." *Futures.* 36:715-732.

Shiva, V. 2012. *Outsourcing Pollution and Energy-Intensive Production.* California: Post Carbon Institute.

Silver, B. 2003. *Forces of Labour: Workers' Movements and Globalisation Since 1870*. Cambridge: Cambridge University Press.

SA (South Africa). 1946. Report on the Distribution of Food, Sir Henry French, U.S.Afr,. U.G.31.

SA (South Africa). 1948. House of Assembly, Debates, Hansard, Vol. 67.

SA (South Africa). 1953. House of Assembly, Debates, Hansard, Vol. 82.

SA (South Africa). 1985. 'Commission of Inquiry into the Bread Subsidy', Stellenbosch.

SA (South Africa). 1991. House of Assembly, Debates, Hansard, Vol. 41.

SA (South Africa). 1992. "Report of the Committee for the Development of Food and Nutrition Strategy for Southern Africa." Pretoria: Department of Agriculture.

SACB (South African Chamber of Baking). 2005. "Why Bread is Good for Us." Retrieved May 14, 2012 (http://wwww.sacb.co.za/webroot/main/home.html).

Sowers, E., P. Ciccantell and D. Smith. 2014. "Comparing Critical Capitalist Commodity Chains in Early Twenty-First Century: Opportunities for and Constraints on Labour and Political Movements." *American Sociological Association* 20(1):112-139.

Stanwix, B. 2012. "Wheat, Bread and the Role of the State in Twentieth Century South Africa." Masters Research Report submitted to Oxford University.

StatsSA. 2014. *Quarterly Labour Force Survey: Quarter 3, 2014*. Pretoria: Statistics South Africa

StatsSA. 2017. *Poverty Trends in South Africa: An Examination of Absolute Poverty Between 2006 and 2015*. Pretoria: Statistics South Africa.

StatsSA. 2017(b). *Demographic and Health Survey 2016: Key Indicators Report*. Pretoria: Statistics South Africa.

Stultz, N. 1974. *Afrikaner Politics in South Africa: 1934-1948*. Berkely*:* University of California Press.

Sturgeon, T., J. Van Biesebroeck and G. Gereffi. 2008. "Value Chains, Networks and Clusters: Reframing the Global Automotive Industry." *Journal of Economic Geography* 8(3):297-321.

Tanner C. M., G. Webster Ross, S. A. Jewell, R. A. Hauser, J. Jankovic, S. A. Factor, S. Bressman, A. Deligtisch, C. Marras, K. E. Lyons, G. S. Bhudhikanok, D. F. Roucoux, C. Meng, R. D. Abbott, and J. W. Langston. 2009. "Occupation and Risk of Parkinsonism: A Multicenter Case-Control Study." *Archives of Neurology* 66(9):1106-1113.

Taylor, M. 2008. "Power, Conflict and the Production of the Global Economy." Pp. 11-31 in *Global Economy Contested: Power and Conflict across the International Division of Labour,* edited by M. Taylor. London and New York: Routledge.

Thompson, E. P. 1971. "The Moral Economy of the English Crowd in the Eighteenth Century." *Past and Present* 50(1):76-136.

Thye, S. and W. Kalkhoff. 2014. "Theoretical Perspectives on Power and Resource Inequality." Pp. 27-48 in *Handbook of the Social Psychology of Inequality* edited by J. McLeod, E. Lawler and M. Schwalbe. New York: Kluwer-Plenum.

Tinley, J.M. 1940. "Control of Agriculture in South Africa." *South African Journal of Economics* 8(3):243-263.

Tinley, J.M. 1954. *South African Food and Agriculture in World War II*. Stanford, California: Stanford University Press.

Uys, G. 2017. "Precision Farming, New Technology and an Eye for Opportunity." *Farmer's Weekly online*. Retrieved February 21, 2018 (https://www.farmersweekly.co.za/crops/field-crops/precision-farming-new-technology-eye-opportunity/).

Van der Burg, A. 2008. "Squeezed Between Boss and Broker: Who Cares about Casuals?" *South African Labour Bulletin* 32(3):13-14.

Van Rooyen, L. 2013. Managing Successful Crop Rotations." *Farmer's Weekly Online*. Retrieved February 23, 2018 (https://www.farmersweekly.co.za/crops/field-crops/managing-successful-crop-rotations/).

Vink, N. 1993. "Entrepreneurs and the Political Economy of Reform in South African Agriculture." *Agrekon* 32(4):153–166.

Vink, N., and J. Kirsten. 2000. "Deregulation of Agricultural Marketing in South Africa: Lessons Learned." FMF Monograph 25. Sandton: The Free Market Foundation.

Vink, N. 2012. "Long Term Economic Consequences of Agricultural Marketing in South Africa." *South African Journal of Economics*. 80(4):553-566.

Wainwright, H. 2014. 'State of Counterpower: How Understanding Neoliberalism's Cultural Underpinnings can Equip Movements to Overthrow it', in *State of Power 2014: Exposing the Davos Class,* Transnational Institute.

Walker, C. 1991. *Women and Resistance in South Africa: Second Edition*. Cape Town and Johannesburg: David Philip.

Wallerstein, I. 1974. "The Rise and Future Demise of the World Capitalist System: Concepts for Comparative Analysis." *Comparative Studies in Society and History* 16(4):387-415.

Wallerstein, I. 2000. "From Sociology to Historical Social Science: Prospects and Obstacles." *British Journal of Sociology*. 51(1):25–35.

Walsh, A. P. 1971. *The Rise of African Nationalism in South Africa: The African National Congress, 1912-1952*. Berkeley: University of California Press.

Warick, J. 2017. "'It's a strong and vibrant industry right now: $368M farm subsidies unnecessary,' says professor." *CBC News*. Retrieved February 21, 2018 (http://www.cbc.ca/news/canada/saskatoon/farm-subsidies-agriculture-saskatchewan-budget-1.4018441).

Watts, M. 2011. "Paraquat." Report for Pesticide Action Network: Asia and the Pacific (PANAP). Retrieved February 15, 2018 (http://wssroc.agron.ntu.edu.tw/note/Paraquat.pdf).

Weber, M. 1922. *Wirtschaft und Gesellschaft Grundriss der verstehenden Soziologie*. Berkely: University of California Press.

Weber, M. 1947. *The Theory of Social and Economic Organization*. New York: Oxford University Press.

Webster, E., R. Lambert and A. Bezuidenhout. 2008. *Grounding Globalisation: Labour in the Age of Insecurity*. Malden: Blackwell Publishing.

Webster, E. and M. Nkosi. 2013. "You entered through that gate and you will leave through that gate: The Decent Work Deficit amongst Farm Workers." Pp. 73-98 in *The Food Crisis: Implications for Labour* edited by C. Scherrer and D. Saha. Rainer Hampp Verlag: Munchen, Mering.

Webster, E. 2015. "Labour After Globalisation: Old and New Sources of Power." in *Labour and Transnational Action in Times of Crisis* edited by A. Bieler, R. Erne, D. Golden, I. Helle, K. Kjeldstadli, T. Matos and S. Stan. London: Rowman & Littlefield International.

Weil, D. and C. Mallo. 2007. "Regulating Labour Standards via Supply Chains: Combining Public/Private Interventions to Improve Workplace Compliance." *British Journal of Industrial Relations* 45(4):791-814.

Werner, M. 2018. "Geographies of production I: Global production and uneven development." *Progress in Human Geography* 1–11.

WB (Wheat Board), Annual Reports of the Wheat Board (1938, 1941, 1946, 1948, 1959), Rhodes House Archive (610.441s.22), Oxford.

Wild, S. 2014. "Agriculture Research Suffers as Little Funding Cuts Resources." in *Mail and Guardian*. 29 October 2014.

Williams, M. 2013. "Marxism and Democracy: Liberal, Vanguard or Direct?" Pp. 16-33 in *Marxisms in the 21st Century: Crisis, Critique and Struggle* edited by M. Williams and V. Satgar. Johannesburg: Wits University Press.

Wilmarth, A. 2009. "The Dark Side of Universal Banking: Financial Conglomerates and the Origins of the Subprime Financial Crisis." *Connecticut Law Review* 41(4):963-1050.

Windawi, A. J. 2012. "Speculation, Embedding and Food Prices: A Co-integration Analysis." ISERP Working Paper Series, 2012.02. New York: Institute for Social and Economic Research Policy, Columbia University.

Wix, E. 1951. "The cost of living: an enquiry into the cost of essential requirements for African families living in Johannesburg, Pretoria and the Reef towns." Johannesburg: South African Institute of Race Relations.

Woll, C. 2007. "Leading the Dance? Power and Political Resources of Business Lobbyists." *Journal of Public Policy* 27(1):57-78.

Wolpe, H. 1972. "Capitalism and Cheap Labour-Power in South Africa: From Segregation to Apartheid." *Economy and society* 1(4):425-456.

Wood, W. and A. Alexander. 2016. "Regulation in practice: Power, resources and context at the local scale in UK food retailing." *Environment and Planning* 48(9):1848–1863.

Wright, E. O. 2000. "Working-Class Power, Capitalist-Class Interests and Class Compromise." *The American Journal of Sociology* 105(4):957-1002.

Wright, E. O. 2006. "Basic Income as a Socialist Project." *Basic Income Studies* 1(1):1-11.

Wright, E. O. 2009. "Understanding Class. Towards an Integrated Analytical Approach." *New Left Review* 60:101-116.

Yates, T. 2011. "Liberation Betrayed: The case of continued evictions of farm dwellers in the 'new' South Africa." Pp.162–87 in *Reforming Land and Resource Use in South Africa: Impact on Livelihoods* edited by P. Hebinck and C. Shackleton. London: Routledge.

Ye, M., J. Beach, J.W. Martin and A. Senthilselvan. 2013. "Occupational Pesticide Exposures and Respiratory Health". *International Journal of Environmental Research and Public Health* 10(12):6442–6471.

Yeates, N. 2013. "Global Care Chains: Bringing in Transnational Reproductive Labourer Households." Pp. 175-189 in *Gendered Commodity Chains: Seeing Women's Work and Households in Global Production* edited by W. Dunaway. Stanford, CA: Stanford University Press.

INTERVIEWS

* Name has been changed in order to provide confidentiality for the respondent.

Charles Abrahams, Lawyer for class action law suit against bread cartel, interview conducted on 3 December 2012, Bellville, Cape Town

Thami Bolani, Chairperson of National Consumer Forum/Consumer Fair, interview conducted on 18 April 2012, Pretoria

Willem Boschoff, Panaar wheat seed breeder, interview conducted on 8 October 2012, Bainsvlei, Free State

Schalk Burger, Lawyer representing Pioneer, telephonic interview conducted on 29 November 2012

Loffie Brandt, Head: Sales Enablement for AgriBusiness, ABSA, interview conducted on 24 May 2012, Johannesburg

Petrus Botha*, wheat producer, interview conducted on 10 October 2012, Free State

Ben Cousins, Professor and researcher at PLAAS, interview conducted on 20 November 2012, University of the Western Cape, Cape Town

Jannie De Villers, CEO of Grain South Africa (GrainSA), interview conducted on 1 October 2012, Pretoria

Jan Coetzer*, wheat producer, interview conducted on 30 November 2012, Western Cape

Richard Grobler*, wheat producer, interview conducted on 30 November 2012, Western Cape

Adriaan Hardie*, wheat producer, interview conducted on 23 November 2012, Western Cape

Paul Hoffman, Lawyer for class action law suit against bread cartel, interview conducted on 24 November 2012, Windhoek, Cape Town

Gareth Jones, Researcher at African Centre for Biosafety, interview conducted on 5 May 2012, Greenside, Johannesburg

Andre Jooste, Senior Researcher, National Agricultural Marketing Council (NAMC), interview conducted on 29 May 2012, Pretoria

Christo Joubert, Senior Researcher, National Agricultural Marketing Council (NAMC), interview conducted on 29 May 2012, Pretoria

Mohammed Karaan, member of National Planning Commission and Dean of the Faculty of AgriSciences, University of Stellenbosch, interview conducted on 21 November 2012, Stellenbosch, Western Cape

Raphael Karuaihe, Manager at Johannesburg Stock Exchange (JSE), interview conducted on 8 May 2012, Sandton, Johannesburg

Ruan Kemp*, small bakery owner, interview conducted on 29 November 2012, Western Cape

Bridget Kenny, Professor in the Department of Sociology, University of the Witwatersrand, interview conducted on 15 April 2013, Braamfontein, Johannesburg

Francois Klaasen*, wheat producer, telephonic interview conducted on 29 November 2012, Western Cape

Jacques Kruger*, wheat producer, interview conducted on 10 October 2012, Free State

Mike Louw, COSATU Western Cape, telephonic interview conducted on 29 May 2012

Theunis Marais*, Premier bakery and mill manager, interview conducted on 11 October 2012, Free State

Mariam Mayette, African Centre for Biosafety, interview conducted on 4 October 2012, Greenside, Johannesburg

Gerrit Meyer*, Pioneer Sasko Bakery manager, interview conducted on 8 October 2012, Free State

Lillibeth Moolman, South African National Consumers Union (SANCU), interview conducted on 20 April 2012, Pretoria

Tebogo Mothwa, Department of Agriculture, Forestry and Fisheries (DoAFF), interview conducted on 11 October 2012, Bloemfontein, Free State

Nkosi Nyembezi, Black Sash spokesperson, telephonic interview conducted on 24 May 2012

Andreas Potgieter*, wheat producer, interview conducted on 29 November 2012, Western Cape

Chris Shone, Lawyer for class action law suit against bread cartel, interview conducted on 27 November 2012, Cape Town

Shan Rambaruth, (former) Competition Commissioner of the Competition Commission, interview conducted on 4 March 2012, Kensington, Johannesburg

Jeremy Rautenbach*, Manager at Albany Tiger Foods Bakery, interview conducted on 21 November 2012, Western Cape

Deon Roos*, wheat producer, interview conducted on 30 November 2012, Western Cape

Friedrik Snyman*, wheat farmer, interview conducted on 29 November 2012, Western Cape

Abdul Solomon, Food and Allied Workers Union (FAWU), interview conducted on 22 November 2012, Gugulethu, Cape Town

Marcus Solomon, Children's Resource Centre, telephonic interview conducted on 23 May 2012

Chris Sturges, Johannesburg Stock Exchange (JSE) Commodity Derivatives Director, interview conducted on 8 May 2012, Sandton, Johannesburg

Princess Tsotetsi, Food and Allied Workers Union (FAWU) organiser, interview conducted on 9 October 2012, Kroonstad, Free State

Simon Roberts, Chief Economist and Head of Policy and Research Division, Competition Commission, interview conducted on 14 September 2012, Pretoria

Christiaan van Dyk*, Manager at small-medium-sized mill, interview conducted on 12 October 2012, Free State