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Corporate power in the agro-food system and South Africa's consumer food environment

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PLAAS Working Paper 32: Corporate power in the agro-food system and South Africa's consumer food environment

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ABSTRACT

This report maps the extent of corporate power in the South African agro-food system using a value chain approach. It identifies major corporate actors in the various nodes of the agro-food system as of 2014. Some nodes tend to be dominated by corporations, for example input supply, grain storage and handling, and feedlots for commercial livestock. Other nodes have a strong corporate core but there is also a wide periphery, for example agricultural production, food manufacturing, wholesale and retail and consumer food service. The large periphery of marginalised actors in some parts of the system point to possible areas of intervention to boost livelihoods by supporting economic activity in the periphery. Although there are pockets of concentrated power in the system as a whole, there is also some distribution of power across nodes as well as between commodities. Vertical integration is less prevalent than in the past. The report looks at governance in the food system, the expansion of corporate self-regulation, and the implications for food security and nutrition. Corporations have immense power in structuring consumer perceptions on food quality and health, from input into apparently neutral dietary-based guidelines to advertising. Financialisation in the food system, including the institutionalisation of share ownership and the rise of agri-investment companies, and the multi-nationalisation of South African agro-food capital especially into Africa, have implications for the ability of the nation state to regulate activities in the agro-food system.

Keywords: South Africa, agro-food system, corporations, agricultural production, wholesale, retail

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ACRONYMS

ACB	African Centre for Biodiversity
ADSA	Association of Dieticians of South Africa
AFMA	Animal Feed Manufacturers' Association
AoA	Agreement on Agriculture
CFE	consumer food environment
CoE	Centre of Excellence
CoE-FS	Centre of Excellence in Food Security
CSIR	Council for Scientific and Industrial Research
DAFF	Department of Agriculture, Forestry and Fisheries
DoH	Department of Health
DTI	Department of Trade and Industry
GATT	General Agreement on Tariffs and Trade
GEPF	Government Employee Pension Fund
GLC	grain-livestock complex
ILSI	International Life Sciences Institute
ITAC	International Trade Administration Commission of South Africa
JSE	Johannesburg Stock Exchange
MAPA	Marketing of Agricultural Products Act of 1996
MNCs	multinational corporations
NFPMS	National Fresh Produce Markets
NSSA	Nutrition Society of South Africa
NWK	(formerly) Noord-Wes Ko-op
OECD	Organisation for Economic Cooperation and Development
OTK	Oos Transvaal Ko-op
PIC	Public Investment Corporation
REER	real effective exchange rate
SAAFoST	South African Association for Food Science and Technology
SACU	Southern African Customs Union
SGE	Switzerland Global Enterprise
Stats SA	Statistics South Africa
VKB	Vrystaat Ko-op Beperk
W&RSETA	Wholesale and Retail Sector Education and Training Authority
WTO	World Trade Organisation

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1. INTRODUCTION

This report is an investigation into the structure of South African agro-food system, with a particular focus on the role of corporations. It is one of a series of state-of-knowledge reports commissioned for the Centre of Excellence in Food Security (CoE-FS) as part of the Value Chains Programme. The report should be read in conjunction with other research conducted as part of the programme and should be considered as a first phase to consolidate knowledge about specific topics in preparation for prioritisation to develop a research agenda for further work. The aim of the report is to provide an overview of some of the key features of the South African food system, with particular reference to its ability to ensure the food security of poor, vulnerable and marginal populations, and to provide livelihoods. In addition, it seeks to provide a conceptual platform for further research. In this respect this report tries to make initial connections between some of the key concepts that are proving central to the work of the CoE: concepts such as 'food regimes', 'governance', 'agro-food systems', 'corporate power', 'value chains', 'consumer food environments' and 'local food geographies', with the intention to develop a research agenda that can investigate these links in more detail in follow-up work.

There is ample evidence that we are in the era of a corporate-led food regime. That is, corporate interests are dominant, both materially and in the ways in which the food system is understood and discussed. No overall mapping of the South African agro-food system or of corporate power in the system has been conducted to date. While there is some sense of corporate power in retail, in particular, there is no systematic review throughout the system. Bits and pieces of information are scattered about and these have been brought together, expanded on and updated, and initial efforts made to identify and fill gaps.

The report is based on a loose value chain approach to mapping the agro-food system. The mapping starts with a schematic presentation of the overall agro-food system structure and the role of corporations in it. A short overview is followed with more detail on major nodes, including inputs to primary agriculture, logistics, primary agricultural production, food manufacturing, wholesale and retail and food service (prepared food consumed outside the home). At times the mapping is mostly descriptive, but for this first phase the main purpose is to get a picture of the whole system and the many parts to it. This will allow us to prioritise areas for more in-depth research following from this initial scan.

System-wide and commodity-specific value chain governance is considered, looking at shifting forms of governance in South Africa, the greater role played by corporations in governance, and the strong corporate influence in shaping the consumer food environment (CFE). State policy is often absent or piecemeal, and much value chain governance is effectively in private hands. Understanding South Africa's food system therefore requires careful attention to corporate practices, strategies and governance. Powerful corporate players actively shape the availability, affordability and acceptability of foods, and with this the broader CFE. These dynamics are implicated in the nutritional transition to unhealthy diets and subsequently a number of public health concerns. The corporate-dominated agro-food system is, therefore, a key mediator of food security for South Africans.

The CFE essentially deals with the environment in which consumers make their food choices and the factors affecting it. The report goes on to describe and discuss some trends and dynamics of the contemporary food system, including agro-food trade, financialisation and institutionalisation of ownership, and the multinationalisation of South African agro-food capital (referring to capital in its productive form). The paper concludes with some reflections and a further research agenda.

2. THE CHANGING SOUTH AFRICAN AGRO-FOOD SYSTEM

Corporate power has grown in the food system since the breakdown of the Bretton Woods system and, in South Africa, the transition from apartheid. Global value chains have come into their own and there has been a general, if uneven, shift in control of productive processes from manufacturing to retail (Burch and Lawrence, 2009:268). The contemporary agro-food regime is characterised by the international extension and externalisation of manufacturing chains previously internalised within the organisational boundaries of vertically integrated corporations and, to a large extent, within nation states (Raikes, et al., 2000:3–4). World market prices have become decoupled or separated from actual regional production costs, with global political mechanisms at the signing of the General Agreement on Tariffs and Trade (GATT) and then the World Trade Organisation (WTO) shaping prices (McMichael, 2005; Moore, 2010:240). This simultaneously indicates an ongoing role for the state and creates opportunities for concentration of production and centralisation of capital in the agro-food sector.

Technological advances have led to significant changes in production and labour processes. The contemporary food regime incorporates flexible production and international sourcing on a scale not previously encountered, although the grounds were already laid before the 1970s. 'Flexible specialisation' introduced a range of relatively cosmetic adaptations of a mass-produced base product (Piore and Sabel, 1984) which have stimulated wider processes of market segmentation. Flexibility has become more important; the ability to respond quickly to opportunities and adapt activities accordingly. To varying extents, depending on the balance of power and ongoing labour struggles, some of the risk of this new flexibility is transferred to labour. Flexible labour is a global phenomenon, suggesting labour has lost ground in the battle over labour processes under the corporate regime. Flexible labour may benefit a smaller, higher-skilled core workforce, at a national scale, as well as at firm level.

The 'third technological revolution' has seen gains in labour productivity, especially from the introduction of new information and communications technologies (ICTs) rooted in computerisation and information digitisation, and the rise to prominence of network forms of organisation (Castells, 1996). These technologies have revolutionised coordination activities, modifying both inter-firm relations (competition and cooperation) and producer-consumer interfaces. Goods with high informational content may be costly to create, but they can circulate at a near-zero marginal cost. The result is increasing returns to scale (decreasing average cost). The first consequence of growing returns to scale is a tendency towards concentration: the greater the production, the lower the average cost, giving a competitive advantage to the largest structures. The combination of scale and network effects results in the elaboration of business models which emphasise the necessity of being among the first to enter the market (Aglietta and Reberioux, 2005:14–15).

Revolutionary innovations in ICTs affect both finance capital and productive capital. In finance, risk management and new financial instruments based on the commodification of risk have allowed the rapid growth of fictitious capital controlled by financial institutions (Bryan and Rafferty, 2010; Harvey, 2013). In production, ICTs have enabled just-in-time inventory management, flexible and agile supply chains and other production advances, with greater capacity to analyse large datasets (Busch, 2010:343), looking for and interpreting patterns. The enhanced ability to mine and use information facilitates the rise of intellectual property protection as a defining feature of value capture and extraction in the corporate regime (Stephan et al., 2006).

For South Africa, the end of the Bretton Woods system globally generated a domestic monetary crisis, and crisis response congealed into what came to be neo-liberal policies, both nationally and globally. In every country these processes differ, based on unique histories, levels of capitalist development and integration, and existing institutions and relations of power. But

common themes across the board are processes of privatisation, trade liberalisation, state deregulation and corporate self-regulation. These also occurred in South Africa as the agro-food system made the transition from a system built on the basis of tight nation-state control to one where global markets and corporations gained influence (Bernstein, 2013; Greenberg, 2010).

Three notable developments in the South African context were: the signing of the Uruguay Round of GATT which led to the formation of the WTO in 1994 and locked countries into trade agreements with major implications for systems of production and distribution; the dismantling of the statutory regulatory systems governing agricultural and food products and their replacement with a combination of greater market forces and industry self-regulation, culminating in the Marketing of Agricultural Products Act (MAPA) of 1996; and amendments to the Cooperatives Act in 1993, which allowed the cooperative infrastructure to be removed from farmer control, and then corporatised and privatised. Combined, these opened the door to expansion of corporate power in the South African system.

A consequence of the WTO Agreement on Agriculture (AoA) was that South Africa was required to reduce domestic support and open markets to imports in the face of continuing production subsidies in the core capitalist countries. South Africa did reduce its tariff barriers significantly, sometimes even beyond WTO requirements. Between 2000 and 2003 South Africa had an average Producer Subsidy Equivalent¹ of 5%, compared to 31% for Organisation for Economic Cooperation and Development (OECD) countries (OECD, 2006:5). This ultimately increased imports, placing domestic producers under pressure and encouraging expansion and globalisation as ways out of the dilemma. This is what Harvey (2006) refers to as a spatial fix, transferring the problem elsewhere but with greater long-term contradictions brewing. The WTO AoA meant prices were increasingly influenced by world prices, exchange rates and the level of import protection. The latter was to come down as part of the agreement.

In the early 1990s, the government proceeded with the removal of subsidies and liberalisation of markets. First the Board of Tariffs and Trade and then the Kasser Committee of Inquiry into the Marketing Act (1992) criticised the marketing schemes and recommended the removal of statutory interventions. Kasser also argued that the private sector should be responsible for regulating production and price instability (Bayley, 2000:44). Full deregulation was sealed with the passing of the Marketing of Agricultural Products Act in 1996, which saw the closure of the marketing boards and the ending of statutory export monopolies. The Act was based on the Kasser Committee's recommendations. The 1996 Act essentially created a 'free market' for food. Previously the government had an intricate system of control over food prices, including subsidies on bread prices. Food security policy changed in line with the greater emphasis on exports and trade. The self-sufficiency policy was replaced by a policy of food self-reliance, meaning that trade in food would gain greater importance as a mechanism to acquire sufficient food for domestic consumption. The use of trade would be based on considerations of comparative and competitive advantage in the national economy as a whole as it integrated into the global economy.

Amendments to the Cooperatives Act in 1993 permitted the gradual privatisation of the cooperatives. The changes to the Act ensured the cooperatives were able to capture part of the massive assets that had been built up over the years and retain them, first for their members (Amin and Bernstein, 1996) and later for shareholders. By the mid-1990s the cooperatives were handling the vast majority of many of the most important crops and supplying or financing major levels of inputs to farmers (Bayley, 2000; 26). Many of them converted into private companies. For example, wheat producers and millers cooperatively organised into Sasko and

¹ Producer Subsidy Equivalent – the annual monetary transfer to agricultural producers from domestic consumers and taxpayers resulting from agricultural policy, based on a formula that takes into account level of production, domestic producer price, world reference price, direct payments to producers, producer levies and other budget payments to producers.

Bokomo merged under the umbrella of Pioneer Foods, and held one third of the wheat flour market in the late 1990s. Cooperatively organised Cape dairy producers formed a company called Bonnita in 1992, with Premier Foods buying a majority share in 1994. Premier also absorbed Genfood, one of the corporate giants of the past. The cooperatives originally had their own provincial/regional spheres of influence, but with corporatisation and privatisation, mergers and acquisitions led to a few large national (and then Southern African regional and then global) entities. Notable are the former Oos-Transvaal Ko-op (OTK, which became Afgri) and Sentraal Wes Ko-op (Senwes) which came to occupy dominant positions in the agro-food sector in integrated agricultural services (input supply, storage, logistics, finance, technical support) as well as production operations of their own, such as poultry and maize. Other former cooperatives, such as VKB (Vrystaat) and NWK (Noord-Wes) are also multi-billion-rand corporations today.

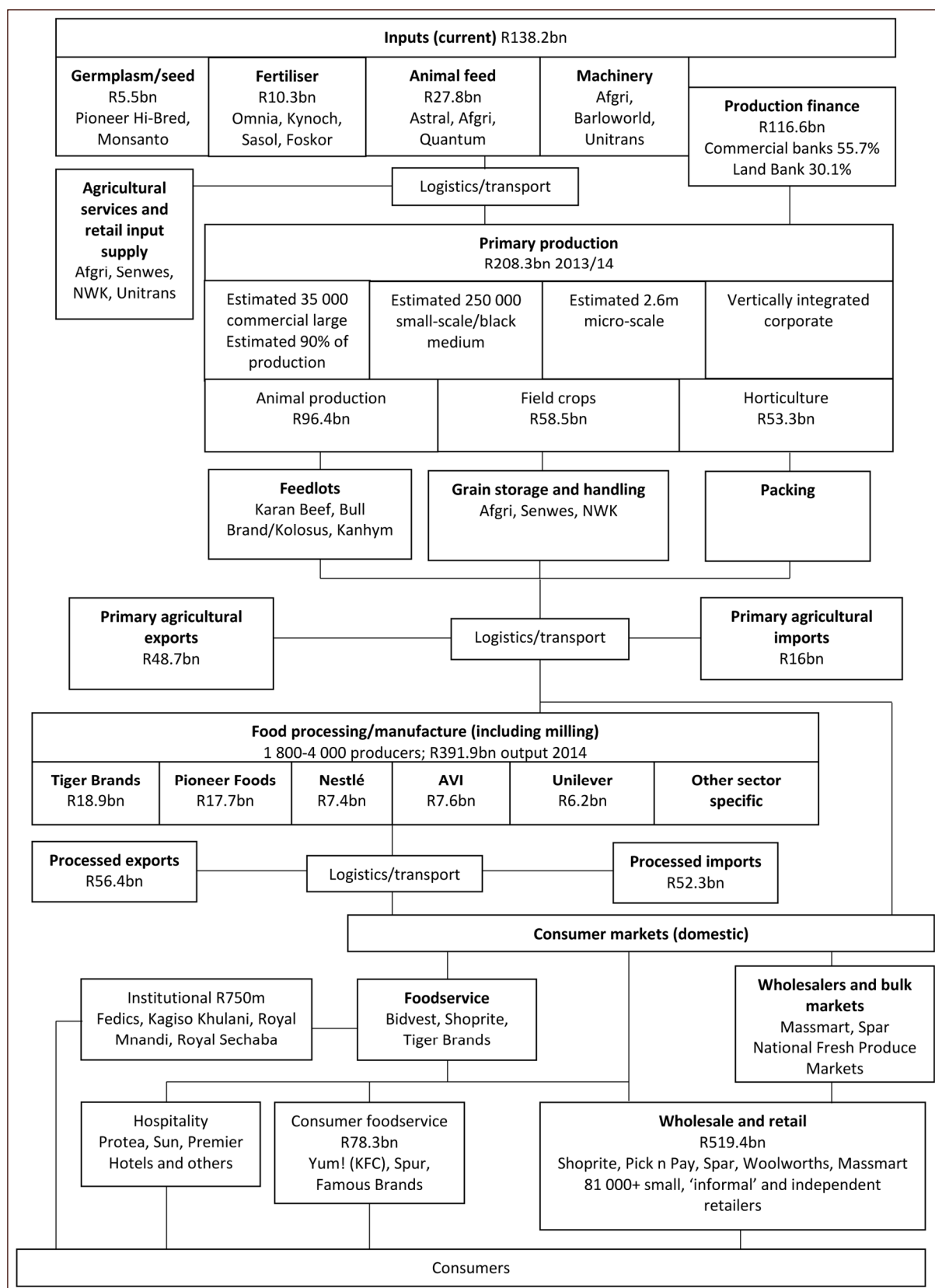
3. MAPPING CORPORATE POWER IN THE CONTEMPORARY SOUTH AFRICAN AGRO-FOOD SYSTEM

This section adopts a loose value chain approach to offer an initial mapping of corporate involvement in the agro-food system. That is, the investigation is structured on the basis of specific nodes of activity through which a commodity passes and value is added, with a focus on companies that operate across multiple commodity chains. *Figure 1* provides a rough diagrammatic overview of the South African agro-food system, highlighting key corporate actors (see *Annexure 1* for sources). *Figure 2* provides a preliminary quantification of the value of different nodes or parts of the agro-food system. The largest node of activity is wholesale and retail, followed by food manufacturing and then primary agricultural production. This is total value rather than value addition, so it is not surprising that downstream nodes are larger than upstream ones. However, it does indicate the relative value under control in each node.

Some nodes tend to be dominated by corporations, for example input supply, grain storage and handling, and feedlots for commercial livestock. Other nodes have a strong corporate core but there is a far wider periphery, for example primary agricultural production, food manufacturing and food wholesale and retail. The latter three are also the largest nodes in the system by value. It is important to note that nodes have their own centres of power and control, and also that the distribution of power and control in the system varies by commodity. There is no simple story of buyer (specifically retail) domination throughout the agro-food system. Seed, fertiliser and machinery, for example, seem to be producer-driven in the sense that production innovations rather than consumer demands drive change, although there will also be some kind of intersection. The relationships between food manufacturers and retailers are also likely to be more complex than simply being buyer driven. Innovation is critical to manufacturing competitiveness, and this means manufacturers may seek to shape demand by creating 'new' products rather than merely responding to demand channelled through retailers.

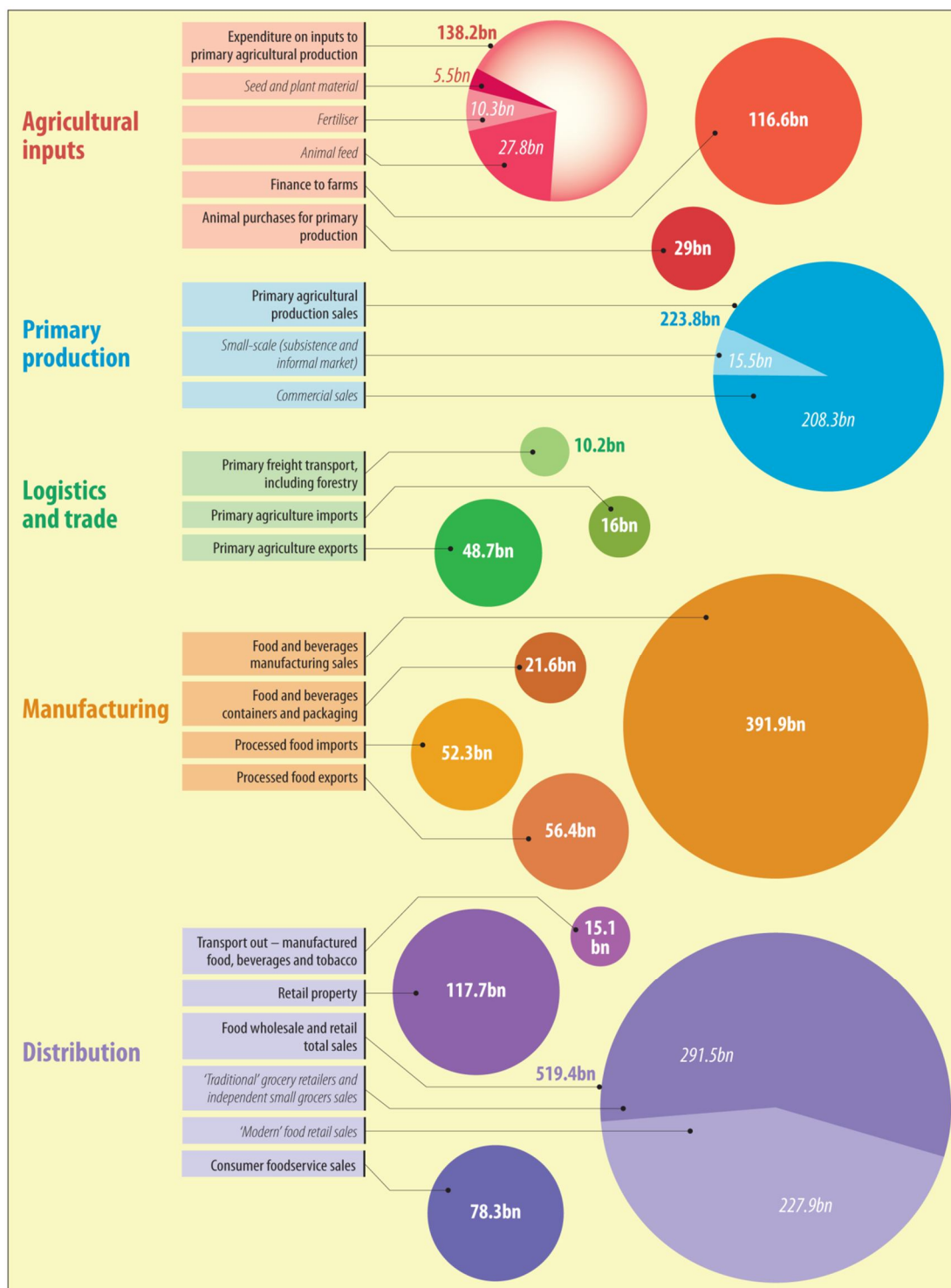
In some parts of the agro-food system there is some vertical integration. Primary agricultural production is the main locus of vertically integrated activities. This takes two distinct forms. One form is the vertical integration in the grain sector of supply of inputs to primary agriculture, agricultural services and grain storage and handling. These activities are dominated by the former grain cooperatives, including Afgri (formerly Oos Transvaal Ko-op – OTK), Senwes, NWK (formerly Noord-Wes Ko-op), VKB (Vrystaat Ko-op Beperk) and some other smaller regional operations. Historically the cooperatives provided these services to their members.

Figure 1: Schematic overview of South African agro-food system structure



Values indicate sales/turnover in 2014.
For full sources, see Annexure 1.

Figure 2: Preliminary quantification of value in selected nodes and activities in the agro-food system, 2014²



For sources, see Annexure 1.
Values are sales/turnover in 2014.

² Thanks to Dudu Coelho for assistance with the infographic.

Privatisation and corporatisation of assets has allowed the former cooperatives to consolidate their strength. The one area where the cooperatives used to play a major role, but where their role has been reduced since corporatisation and deregulation, is in production finance, with the commercial banks taking over the main role. The second form of vertical integration related to the primary production node is in certain industrialised activities, including animal feed/poultry and sugar, both of which are integrated downstream with processing/manufacturing. Generally, however, supplier contracts are favoured over vertical integration. Fishing is another example of vertical integration but is not dealt with systematically in this review. There is also value chain integration, especially between retailers and suppliers, but this is not the same as vertical integration. Vertical integration is about corporate ownership in more than one node in a commodity chain, while value chain integration is about integrating processes throughout a chain but not with direct corporate ownership. This is considered in more detail below when looking at value chain governance.

Inputs to primary production

Agricultural inputs are not well mapped in the South African agro-food system. There is some data from Statistics South Africa (Stats SA) on expenditure, and the Department of Agriculture, Forestry and Fisheries (DAFF) has annual updates on price indices, but not amounts spent. There is some work on corporate power in seed, fertiliser and agrochemicals (ACB, 2009). Research and development, education and training, and technical and management expertise are hidden from outsiders. Further research on these dimensions is required.

Stats SA (2013a) indicates total primary agricultural production expenditure in 2013 at R196.4bn, of which current expenditure constituted around 91% and capital expenditure the remainder. The latter includes purchases of machinery and vehicles, land, buildings etc. DAFF (2015:78) indicates total value of capital assets on commercial farms at R359.1bn in 2014. Total current expenditure on farms in 2013 was R178.5bn, divided into inputs R130.1bn (73%), animals R27.6bn (15%), and salaries and wages R20.7bn (12%). In turn, major input costs were animal feed R26.6bn (20.4% of total); repairs, maintenance and licences R10.2bn (7.7%); fertilisers R10bn (7.6%); and fuel R8.3bn (6.4%) (Stats SA, 2013a:7). The largest price increases for farming requisites over the past five years were for farm feeds and packing material (DAFF, 2015:94).

The different inputs have their own dominant corporations. The commercial animal feed sector tends to be vertically integrated, especially within the large poultry producers. The Animal Feed Manufacturers' Association (AFMA) has 40 distinct full members³. Major members are Meadow Feeds (Astral Foods), Epol and Foodcorp (both RCL Foods), Nutri Feeds (Country Bird), Afgri Animal Feeds, Nova Feeds (Quantum), VKB Agriculture, and De Heus (subsidiary of Dutch multinational). Grain traders are associate members of AFMA and include Cargill, Seaboard, Louis Dreyfus and other multinational operators. Cargill and Louis Dreyfus handle 70% of maize trading in South Africa (ACB, 2013:17).

The main ingredients of animal feed are maize (52%), soya oilcake (14%), wheaten bran and flour (7%), sunflower seed and oilcake (5%), molasses (4%) with another 47 ingredients (AFMA 2015:42–43). Poultry (broilers and layers) is the largest consumer (41%), followed by beef and sheep (29%) then dairy (18%) (AFMA 2015:53). South Africa is a net importer of animal feeds and raw materials, especially soya oilcake (AFMA 2015:32). There is a rise in soya production in South Africa and a corresponding drop in soya oilcake imports, though this remains the most significant import for animal feed. For the poultry companies in particular, feed is a major source of profit and in recent years has even offset losses in poultry production.

³ <http://www.afma.co.za/Membership.htm>

The vertically integrated companies produce feed for their internal operations as well as for sale to others. Animal feed tends to employ far fewer workers than poultry operations. Animal feed accounts for a small share of overall revenue produced by the vertically integrated poultry producers, but animal feed operations account for most of the operating profit.

Mechanisation can be divided into capital expenditure (which incorporates motor vehicles, plant, machinery, tractors and other transport) valued at R11.3bn in 2013; and current expenditure (which includes repairs, maintenance and licences) valued at R10.2bn for all assets in 2013 (Stats SA, 2013). Domestic and multinational corporations (MNCs) operate as agents and after-sales support for mostly imported brands, sometimes with exclusive brand rights in South Africa and regionally. Imported agricultural machinery⁴ was valued at R6.5bn in 2014 (DTI, 2015). The main imported brands are Massey Ferguson, Claas, Bell, John Deere, Dezzi, New Holland and CASE IH. Companies in the market include Afgri, Barloworld Agriculture, Bell Equipment, Deere & Co., Agco, Dipla and Landmech. Afgri is the single largest John Deere franchise in Africa, with 11 centres in South Africa, two in Zimbabwe, one in Zambia, one in Ghana and a John Deere franchise in Australia. It had a 30% South African market share for tractors in 2013 (Afgri, 2013). No publicly available work has been done on this sector yet. Other companies, such as Unitrans (under KAP Industrial) provide on-farm services, which may include leasing of machinery.

As with machinery, a high proportion of fertiliser raw materials and finished products are imported. In the mid-2000s all potash and 40–60% of nitrogen was imported, while domestic production accounted for around 90% of phosphate (ACB, 2009:49). Fertiliser production requires procurement of the raw material inputs with some links to the mining sector, and then blending of bulk and specialist fertilisers. The fertiliser industry was built under state protection prior to the 1980s, with state-owned enterprises Foskor and Sasol dominant. After deregulation the industry was unable to sustain itself, factories were closed and South Africa became a net importer of fertiliser from around 2000 (ACB, 2009). Fertiliser imports in 2000 were valued at R858m, rising rapidly to R7.4bn in 2014 (DTI, 2015). In 2009 the Competition Tribunal found Sasol, Omnia and Yara/Kynoch guilty of cartel conduct in the supply of nitrogenous fertiliser, and Sasol and Foskor guilty of cartel conduct in the supply of phosphoric acid. Sasol had to pay a fine of R250m (Competition Tribunal, 2009). Sasol was also ordered to divest itself of certain assets. Little work has been done since the late 2000s to track changes and consolidation in the industry since then. The main companies are Sasol, Foskor and Omnia. All of them operate as multinationals. For Sasol, a very large petro-chemical company, fertiliser production is a small side business. Kynoch was the fertiliser market leader with an estimated market share of 40% in 1995, but with an unknown share now. Yara owned Kynoch between 2005 and 2009, and the brand was taken off the market. Yara withdrew from the South African market after the Competition Tribunal ruling, and Kynoch is now under the ownership of East African multinational Export Trading Group.

Seed is included in *Figures 1* and *2* mainly because it is an important input where corporate power is very concentrated, especially in grains but also other seed. This is important for specific commodities such as maize, wheat and vegetables. Maize seed constituted 57% of the total seed market in 2014 (see *Annexure 1*). Pioneer Hi Bred/Pannar and Monsanto are the biggest corporations, having acquired the largest domestic companies after deregulation (Monsanto with Sensako and Carnia 1999–2000, and Du Pont Pioneer Hi-Bred with the acquisition of Pannar in 2012). The largest remaining domestic company is Zaad which incorporates Agricol and Klein Karoo Seed, owned by Zeder (see *Figure 5*), while the public (but corporatised) Agricultural Research Council holds significant plant breeders' rights (ACB,

⁴ This includes specifically agricultural machinery, but not agriculture's share of general purpose machinery, e.g. transport, forklifts, graders, etc.

⁵ <http://www.m2.com/m2/web/story.php/1999801D6F12A66C32B9802568560041FEB3>

2009). Pioneer Hi-Bred/Pannar, Klein Karoo and Monsanto owned 62% of registered maize seed varieties in 2013 (ACB, 2013:17).

Farm finance is treated as a separate input – it is not a current input – and was valued at R116.6bn in 2014 (DAFF, 2015:79) of which commercial banks held 56% of the total loan book and the Land Bank 30%. Deregulation saw a sharp shift in the loan book from cooperatives and the Land Bank to the commercial banks. The Land Bank experienced major internal problems in the 1990s and early 2000s but in recent years has steadily recouped its share of the loan book.

Retail input supply and wider agri-services are another poorly documented realm. Agri-services is a very broad term, ranging from insurance to retail input sales to on-farm contracting services, including labour broking. The former cooperatives tend to be dominant in input delivery and agri-services, based on their historical areas of operation. Afgri, Senwes and NWK are dominant, with a number of partnerships and joint ventures between them. A trend is the move towards on-farm contract services, with logistics and agri-services corporations such as Unitrans and Afgri involved in such activities. For example, Unitrans' agricultural sub-division is involved in contracted load and haul services, harvesting, land preparation, bush clearing, infrastructure development and estate ancillary services (KAP Industrial 2014:37).

Logistics

Logistics is a key factor throughout the system. Here the focus is narrowly on the organisation and coordination of the movement of the commodity through the supply chain, with supply chain governance dealt with in more detail later in the report. Supply is structured around nodes with production networks that may consist of thousands of suppliers radiating from them (Sturgeon, 2000). The primary objective is the supply of the right input at the right time in the right quantity for continuous production, with secondary objectives of resource use efficiency, integration of business processes along the supply chain, and cost and efficiency of supply and flow of materials from source to destination. These are related to corporate concentration and the emphasis on meeting returns on investment targets (Aglietta and Reberieux, 2005). Shareholders exert pressure to reduce costs every year and this flows through the supply chain. Logistics functions include supply chain and network design, freight forwarding and clearing, transport, warehouse design and optimisation, warehousing and storage, inventory management, integration services, distribution and fulfilment, and demand management.

Logistics tends to deal with planning and physical movement of products between nodes in commodity chains, but there are also technical coordination and resource flow functions within production units, especially in primary agriculture and food manufacturing. Within the production unit, supply chain management (which shades into line management on the shop floor) refers to coordination of the physical functions of production, incorporating technical knowledge and its application in practical production, including work process and labour organisation, and the coordination and organisational functions to ensure the correct sequencing and flow of throughputs. It links in to broader supply chain management through the input and output interfaces, where it may become part of a longer coordinated chain.

A recent trend is towards integrated supply systems. End-to-end integration of supply chain functions is considered the next major shift required to retain competitiveness (CSIR, 2013:ii). Integrated systems drive down excess buffer stock and associated costs. Revolutionary advances in ICT, as indicated above, have facilitated and enabled real-time sharing of information, flexible specialisation in production, materials and resource planning and flows, and 'customer relationship management' and data mining to predict and shape customer demand (Kaplinsky and Morris, 2001:94–95). South Africa tends to lag behind these developments; in particular South African companies still operate in silos with supply chains

designed for individual companies, rather than throughout the chain. The emphasis is on 'financial functionality' (cost) rather than supply chain integration requirements (CSIR, 2013:18). Information latency (time lags in transmitting supply, demand and financial data between supply chain partners) is a key obstacle to demand-driven supply chains in South Africa (CSIR, 2013:19–20).

Two main areas of logistics are farm to factory (primary freight) and factory to wholesale/retail (secondary freight). These may include cold chains, which benefit from an integrated modular approach so the chain is unbroken. Primary freight (including forestry) was valued at R10.2bn in 2014, while secondary freight (including beverages and tobacco) was valued at R15.1bn (Stats SA 2014, 2014a, 2015a). Further work will need to be commodity specific. For now we are looking broadly at companies with significant agro-food logistics operations across commodities wherever they operate in the system. These include both outsourced operators, like Bidvest or Imperial, and in-house operations, like most of the retailers and manufacturers have. Logistics may be a split responsibility between seller and buyer and this will be subject to contracts and partnerships, as well as struggles for control. Overall there is likely to be some dynamic mix of outsourcing and in-house operations.

In South Africa, rail historically dominated freight and logistics through the state-owned South African Transport Services (later Transnet). After deregulation there was a rapid shift to road transport for flexibility and cost reasons (CSIR, 2013). Transnet still plays a role, but agro-food products are a relatively small component of its total freight. Total freight tonnage in 2012 was 88% by road and just 12% by rail, of which 57% was bulk mining. Thus only around 5% of non-mining freight was by rail in 2012 (CSIR, 2013:40). Major freight products for Transnet are mining, general freight (which includes agriculture amongst many others) and petroleum. General freight accounted for around 35% of total revenue in 2014 (Transnet, 2014:6).

There is a good national road network but decaying provincial infrastructure, including damage from trucks carrying 'rail-friendly' cargo (CSIR, 2013:iii). Efforts are being made to shift freight back to rail. This is more ecologically friendly, but remains inflexible (e.g. containers must be full before they can move) and costly. There are some joint ventures or public-private partnerships (PPPs) between Transnet and some of the main private logistics companies, including Barloworld, Imperial and Unitrans (CSIR, 2013:66) on integrated inter-modality (CSIR 2013:45).

The biggest logistics and transport corporations operating in South Africa are diversified across a number of economic fields, e.g. mining, industrial manufacture and food products. Agriculture and fast-moving consumer goods are a smaller component of the businesses, and the share is difficult to extract from the available information. The largest companies operating in the sector appear to be Bidvest, Imperial and Barloworld, with Unitrans (subsidiary of KAP Industrial) also active on a smaller scale, but more investigation is required to map their activities in the agro-food system specifically. In 2014 Bidvest agro-food turnover was R6.6bn, but this was less than 4% of the corporation's total turnover that year.

Bidvest is by far the largest by market capitalisation but a significant portion of its operations are outside South Africa. Bidvest offers a different example of integration to the standard vertical integration between nodes of production. It is a diversified services corporation that has grown rapidly in the past few years, primarily through acquisitions of independently-owned businesses in many service sectors. As a result it operates in a number of areas with an impact on the agro-food system, including fast-moving consumer goods, freight and logistics, packaging, financial services and foodservice. However, this is not the same as vertically integrated production, where the corporation operates in two or more nodes of a specific commodity chain with supply of products and services flowing within the vertically integrated company for value addition.

Imperial Holdings (2014:56) notes trends in logistics that include a growth in outsourcing of logistics (especially transport, storage, distribution and operations planning); consolidation in the retail supply chain and rationalisation of logistics services provider capacity; and increased engagement by business on their inbound supply chains (transport efficiencies, reduced inventories, integrated planning). Outsourcing of logistics, including planning is fairly common, which is quite surprising given the centrality of control over the supply chain. Companies outsourcing logistics may opt to go with one large operator or may prefer to reduce dependency on a single service provider and distribute the activities amongst a number of smaller suppliers, where the lead firm will have greater control over the process and more flexibility.

On the other hand, several agro-food corporations, especially in manufacturing and distribution, have in-house logistics divisions that perform these functions but may also sell logistics and transport services to other companies. An example is RCL Foods with Vector Logistics, which provides in-house services to Foodcorp, Rainbow and TSB, and also provides primary warehousing and transport, principal secondary distribution (to retailers, wholesalers and general trade) and customer secondary distribution (a full basket of products directly to customer outlets) to many clients, ranging from I&J in fisheries to Pick n Pay in retail, and most of the large consumer food service outlets (RCL Foods, 2014:12–13). Pioneer Foods and AVI also have centralised procurement and logistics. Retailers have their own distribution fleets.

Wholesalers and retailers are at the forefront of supply chain management innovations, copying Walmart's globally successful operations. Walmart's supply chain innovations are based on centralised distribution; tight supply chain management built around new ICTs and computing power; data mining and analysis to forecast demand; and global sourcing and the elimination or redistribution of supply chain functions to transfer less profitable activities to suppliers and to absorb more profitable activities, including direct sourcing where it is profitable/cost saving to do so (Wulfraat, 2011; Mack, 2012). Consumers are recruited as allies to force down prices in the supply chain. Local retailers have adopted these and other global innovations in supply chain management over the past decade. Early adoption of centralised distribution permitted Shoprite to expand market share, and late adoption resulted in Pick n Pay falling behind in the competitive race (Thomas, 2011). This shades into value chain governance, which is dealt with in a bit more detail later.

Primary agricultural production

Commercial agricultural production was valued at R208.3bn in 2013/14. To this we can add an estimated R15.5bn⁶ in subsistence or informal market production that is not taken into account in DAFF statistics (Aliber and Mdoda, 2014). There are three broad areas of primary agricultural production: animal production (46.3% of gross value in 2013/14), field crops (28%) and horticulture (25.6%) (see *Table 2*).

In line with the replication of the US national agricultural model in the era of state-led development, South Africa has a grain-livestock complex (GLC) at the heart of the agro-food system. Poultry (meat and eggs combined) products were valued at R41.8bn in 2014, cattle (meat and milk combined) had a value of R35.4bn and maize had a value of R27.2bn. Combined these constituted R104.4bn or 50% of the total value of commercial primary production in 2014. Beyond this, the GLC extends upstream, where animals purchased and animal feed alone had a combined value of R54.2bn in 2014 (see above); and where maize is the major commercial seed type, the sector uses a large share of fertiliser and machinery, etc. Downstream, the GLC extends into grain storage and handling, processing and further value addition, and also has numerous connections into other agricultural products (e.g. soya and molasses from sugar into animal feed).

⁶ Estimated R13bn in 2010/11, increased by 6% per year for a 2013/14 figure.

Table 2: Primary agricultural production in South Africa, 2013/14*

Sector	Value of production (bn)	% of gross value	Highest value individual products	Value of production (bn)	% of sector
Animal production	R96.4	46.3	Fowls slaughtered	R32.9	34.1
			Cattle and calves slaughtered	R22.7	23.5
			Fresh milk	R12.7	13.2
			Eggs	R8.9	9.2
Field crops	R58.5	28.0	Maize	R27.2	46.5
			Sugar cane	R7.9	13.5
			Wheat	R5.4	9.2
			Soya beans	R5.2	8.9
Horticulture	R53.3	25.6	Deciduous and other fruit	R14.0	26.3
			Vegetables	R11.1	20.8
			Citrus fruit	R9.7	18.2
			Potatoes	R6.3	11.8
Total production	R208.3	100			

Source: DAFF, 2015:75–76
*preliminary

While statistics on subsistence and smallholder agriculture are woefully inadequate, it is estimated that there were around 2.5 million households practising some kind of agriculture in 2013. Roughly 2.3 million of these were black households engaged in subsistence production (i.e. who farm for an extra or main source of food), and 167 000 were smallholder households (i.e. who farm for a main or extra source of income) (Aliber and Mdoda, 2014:1). To this we can add somewhere around 40 000 large-scale commercial producers, according to the 2007 Census of Agriculture (Stats SA, 2010:10). This was the last time a survey on commercial agriculture was conducted and the information is hopelessly out of date. But even if the data is somewhat questionable, it is fairly evident that the numbers of commercial farmers have been declining since deregulation.

There appears to be some concentration in commercial agricultural production. Despite a decline in farmer numbers, the area under production has not shrunk to the same extent, indicating consolidation. Liebenberg (2013:28) indicates just 0.6% of commercial farming units (237 units) accounted for a third of income in 2007. This can be compared with the top 5% of farms accounting for 10% of income in 1993. Also using 2007 Census of Agriculture data, Kirsten (2011) indicated that 57% of commercial farmers had an annual gross income of R500 000 or less, and just 7% of all commercial farm units had a gross income of R5 million or more. Nevertheless, direct corporate ownership of primary production is not pronounced and, where it exists, is decidedly uneven. Corporate power in primary production expresses itself more in supply chain control than in direct production. There are particular locations in the primary production process where corporate producers are dominant, for example in cattle feedlots and poultry production. However, contract or open market arrangements are more common, as these allow for a wider supply base that mitigates the production risk for large buyers. Individual farmers or farmer partnerships may be very powerful in local areas or regions, though they are less so on a national scale, with some exceptions (e.g. ZZZ in vegetables, or wine farmers). More detail can be provided, based on commodity-specific analysis.

Increasing economies of scale are a driving force in commercial agriculture. Deregulation and trade liberalisation have opened the space for global competitors who either have lower cost structures or who can rely on government subsidies to land their products at cheaper costs than local producers. According to Bernstein (2013:26) 'the largest enterprises are generally in areas of high agricultural productivity, and are major field crop producers, irrigated and export-oriented horticulture enterprises or intensive livestock enterprises. Most operate on more than one non-contiguous farm and sometimes on rented land too'. The result is growing differentiation amongst commercial farmers and the deployment of a range of strategies of

diversification and consolidation, including buying or renting more land, diversifying operations on their present property, exploring different markets in search of higher product prices, seeking to enlarge income and cost margins by improving productivity and increasing yields, and movement up the value chain (Genis, 2015). Other trends are towards part-time production, and diversification into other economic activities alongside agricultural production.

A recent trend in commercial agriculture is encroaching financialisation (Ducastel and Anseeuw, 2015), with diverse fund managers shaping farmland and agricultural infrastructure as an investment opportunity. Systems for reducing the risk of commodity volatility include the use of the futures exchange (SAFEX), silo receipts, multi-risk crop insurance, and geographical and asset diversification (Ducastel and Anseeuw, 2015:8).

Aggregation and primary processing are intermediate between primary agricultural production and downstream nodes in chains. This is commodity specific and is best dealt with in commodity analyses. There is concentrated activity specifically in feedlots for cattle, grain storage and handling in grains, and grading and packing in horticulture. These activities are performed on the farm or in the farming area. In livestock, 75% of cattle go through concentrated feedlots before reaching the market. A core of large producers dominate these feedlots, including Karan Beef, Bull Brand/Kolosus, EAC Group and Sparta Beef, which between them had a 54% market share in 2010 (Spies, 2010:82). Kanhym Estates is dominant in pig feedlots. Vertically integrated poultry producers include Astral Foods, Rainbow (RCL Foods), Afgri, Country Bird, Quantum Foods and Sovereign Foods. Vertically integrated industrial poultry production concentrates production in feedlots from the beginning of the process.

In grain storage and handling, 17 large owners held 94% of the silo market, and Senwes, Afgri and NWK had 74% of grain silo capacity in 2011 (DAFF, 2012a). Senwes has around 25% of commercial storage capacity, and handles approximately 20% of the country's grain and oilseeds⁷ and nearly 30% of all grain (Senwes, 2014:7). Afgri had an approximate 25% silo market share at the time of its acquisition by AgriGroupe (Competition Tribunal, 2014:5). No systematic work has been done to date on mapping out preliminary processing and packing in horticulture. Facilities tend to be decentralised under the control of local farmer partnerships, rather than national-scale agribusiness control. There may be some commodity-specific concentration, for example ZZ2 in tomatoes. This requires further investigation.

Food manufacturing

The focus here is specifically on food manufacturing rather than broader agro-processing. DAFF divides agro-processing into 11 sub-divisions⁸. Agro-processing is the largest single manufacturing branch in South Africa, at an average 29% of total manufacturing value from 2006–2010. Food (42%) and beverages (12%) in turn are the two largest sub-divisions within agro-processing (DAFF, 2012:5). By DAFF's figures, food constituted an average of around 12% of the total value of manufacturing in South Africa between 2006 and 2010, showing a slight but not major declining share of total manufacturing since the mid-1980s.

Stats SA valued food and beverages manufacturing sales at R391.9bn in 2014: beverages R107.2bn (27%); 'meat, fish, fruit etc.' R105bn (27%); grain mill products R64.1bn (16.4%); dairy R34bn (8.7%); and other food products R81.6bn (20.8%) (Stats SA, 2015:11). The packaged food market was valued at R172.4bn in 2014 (Euromonitor 2015d). This is about 44% of the total food and beverages market. South Africa had a positive trade balance in processed food in 2014 (see section on trade below).

⁷ <http://www.senwes.co.za/en-ZA/Corporate/>

⁸ Food, beverages, paper and paper products, wood and wood products, textiles, wearing apparel, furniture, tobacco, rubber products, footwear, and leather and leather products.

Table 3: Income in formal food and beverage manufacturing sector by enterprise size, 2011

Enterprise size	Turnover	Share of total income
Large	>R104m	88.3%
Medium	R24m–R104m	7.5%
Small	R12m–R24m	2.3%
Micro	<R12m	1.9%

Source: Stats SA 2011:22

Deregulation in the 1990s led to increasing processing opportunities, especially in baking, dairy, milling and meat production (Mather, 2005:611), but income has remained very concentrated (Table 3). Deregulation has simultaneously led to a decline in employment in agro-processing and food manufacturing. Employment in agro-processing peaked in 1996 and subsequently dropped continuously to 2010, from an annual average of 720 000 (1996–2000) to 594 000 (2006–2010), with employment in food manufacturing dropping from an annual average of 230 000 (1996–2000) to 186 000 (2006–2010), a 19% decline (DAFF, 2012:11–12).

This report focuses on general food manufacturers and excludes beverages and commodity-specific food manufacturers, especially in sugar, dairy and poultry, where large corporations are dominant. These are the subject of commodity-specific analyses. In 2011, sugar, fish and beverages were the most concentrated sectors, followed closely by oils and fats, grain mill products and starches, and bakery products. In all these sectors, the five largest companies had a combined formal market share of 75% or more (Stats SA 2011:23). Commodity-specific companies that we should keep an eye on are Tongaat Hulett, Illovo and RCL/TSB in sugar; Clover, Parmalat, Danone and Dairybelle in dairy; and Astral and RCL/Rainbow with Quantum, Country Bird and Sovereign Foods as smaller entities in poultry. Consolidation in the poultry industry can be anticipated as companies struggle with profitability.

The largest listed general food manufacturers were Tiger Brands, with a market capitalisation of R58.7bn in 2014; Pioneer Foods at R41.3bn; AVI at R28.6bn and RCL Foods at R16bn (Financial Mail, 2015). Alongside these, we can include the two largest non-South African multinationals, Nestlé and Unilever. Both of these have larger operations in South Africa than RCL Foods, which incorporates Foodcorp, a general food manufacturer, along with Rainbow Chicken and TSB in sugar production. Premier Foods is also a smaller general food manufacturer that was acquired by Brait and delisted (see Figure 5). Between them Tiger Brands, Premier Foods and Pioneer Foods accounted for 60% of white maize milling in 2013 (ACB, 2013:17). Top maize brands are White Star super maize meal (Pioneer) with a 25.3% market share in 2012, Ace super maize meal (Tiger Brands) with 22.5%, and Iwisa (Premier Foods) with 13.3% (but 25.5% together with Premier's other brands, Impala and Nyala) (ACB, 2013:37–38). More details on maize will require a dedicated commodity study.

Table 4 shows the companies with the largest market share in general packaged food/food manufacturing. According to Euromonitor, the top five packaged food manufacturers have 34.3% of the packaged food market; however this excludes maize and sugar. There is also some question about how Euromonitor arrived at their statistics. In particular, the figure that Euromonitor gives for Tiger Brands packaged food sales is the same as the figure Tiger Brands gives in its 2014 annual report for total turnover, including all non-food operations and maize products. The company indicates that just 30% of its revenue comes from consumer food products, which significantly reduces Tiger Brand's market share to around 5.2% of the packaged food market. This is about the same size as Pioneer Foods. This seems more realistic when you consider the similar revenues from their respective food businesses in 2014 (Table 4). Regardless of these details, the largest corporations are Tiger Brands, Pioneer Foods, Nestlé, AVI and Unilever.

Table 4: The Big 5 general packaged food manufacturers, 2014

	Tiger Brands	Pioneer Foods	Nestlé	AVI	Unilever
Controlling shareholders	Institutions/PIC 49% foreign	Zeder	Institutions	Institutions	*
Market capitalisation	R57.3bn	R41.6bn		R27.2bn	
Group revenue/turnover	R30.1bn	R17.7bn		R10.3bn	
Group operating profit ⁹	R3.7bn	R1.7bn		R1.7bn	
SA food business revenue**	R18.9bn	R17.7bn	R7.4bn	R7.6bn	R6.2bn
SA food business operating profit**	R2.7bn	R1.6bn		R1.16bn	
Packaged food market share***	17.4% (5.5%)****	5.3%	4.3%	3.7%	3.6%
Employees	16 365 (12 923 permanent 3 442 seasonal)	9 859 (9 724 permanent 135 contract)		10 834 (8 051 permanent 2 783 contract)	3 500

Sources: Annual reports, 2014; market capitalisation – Financial Mail, 2015

*Blank cells indicate information that is not provided in available reports. **Including in-house logistics ***Euromonitor, 2015d – excludes packaged maize and sugar products ****Adjustments to Tiger Brands' market share (discussion in text)

According to the information from annual reports and websites, the top five general food manufacturers in South Africa had food revenues of about R57.8bn in 2014 – only around 14% of the total market, according to figures from Stats SA (2015). This amount includes some logistics performed in-house or even as commercial operations for other clients, as well as some beverages. This seems to be a fairly low market share but we must remember we are excluding commodity-specific lines, especially sugar, dairy, poultry and fishing, which have their own dominant corporations. Retailers have also encroached into the manufacturing space through private labels, although these may still be manufactured by the big corporates (see below). In addition, many of the estimated more than 4 000 food production companies (Madima, 2006) will produce intermediate goods that find a market amongst the big corporations. Madima says the top 10 corporations account for 70% of total turnover, which does not match the figures above. However, this probably refers to turnover of JSE listed companies, since Madima also shows market concentration on the JSE, so this may be his frame of reference.

The low percentage share of the large corporations that we see all about us seems counter-intuitive, and begs the question of who is producing all the rest. But these figures come from the corporations themselves and are matched to official government data on size of the overall sector. The important questions are: How wide is the food manufacturing periphery, and what are some of its key features? Mather (2005) surveyed 30 small and medium food processing companies, but the survey was more about conditions current at the time than about trying to quantify the sector. A key feature was efforts to access retail supply chains.

Key trends and dynamics in food manufacturing include consumer markets under pressure, which are forcing manufacturers to adapt. Markets are smaller and manufacturers are forced to look elsewhere to maintain growth. This leads to multinationalisation (see below) in an effort to secure other spaces for exchange and profit. Supply chain management and demand forecasting are critical issues, as are product and process innovations and the ability to respond rapidly to changing buyer requirements. These are fast-moving consumer goods, and agility and flexibility are required to keep pace. These are means to find advantage in creating and securing new markets. The global trend is towards mega-concentration (e.g. AB InBev's recently accepted offer of around US\$106bn (around R1.4 trillion) to acquire SABMiller, the third largest corporate merger in history; or the failed efforts by Monsanto to acquire rival Syngenta in 2015.

⁹ Operating income and operating profit are used interchangeably – net revenues minus reported operating expenses, cost of goods sold and depreciation <http://www.investopedia.com/ask/answers/101314/what-are-differences-between-operating-profit-and-operating-income.asp>

South African agro-food capital is becoming increasingly woven into this global web and compelled by global conditions. We should anticipate the large-scale external absorption of South African agro-food MNCs as all sectors of the economy consolidate globally.

Wholesale and retail

Wholesale and retail are treated as one, since they both deal with post-manufacturing distribution to end consumers or intermediaries. Hybrid wholesale-retail models are growing more prevalent in the corporate sector. The value of the total food wholesale and retail market was estimated at R519.4bn in 2014 in a report for the United States Department of Agriculture (Ogondo, 2014). 'Traditional' grocery retailers and independent small grocer sales were valued at R291.5bn (56%) and 'modern' food retail sales (mainly supermarkets, but also hypermarkets, convenience stores and discounters) were valued at R227.9bn (44%) (*Figure 2; Annexure 1*). This unexpected finding is discussed further below.

The broad periphery

The broad periphery is defined here in the same way as Euromonitor's 'traditional' markets (small grocers, spaza shops, street traders, etc.), also known generally as the informal sector, though it shades into the formal sector, especially with the small grocers. Ogondo (2014) indicates a 56% share of the total food market, a larger share than 'modern' retailers. It is difficult to compare this directly with Euromonitor data we have at hand, because the latter splits retail into a number of categories – grocery retailers and mixed retailers are most relevant for food – without distinguishing between food and non-food products as discussed below. Euromonitor data (2015) says 46% of the grocery retail market is through traditional grocery retailers (R216.8bn), but that doesn't include mixed retailers. For mixed retailers, no 'traditional' share is indicated but there are many hybrid forms, including warehouse clubs and mass merchandisers that blur the boundaries (Euromonitor, 2015a).

Whichever way we look at it, even a 46% market share is very significant and warrants further attention. At the moment, this sector is treated as secondary and often considered a backward system in need of modernisation. But even in the face of a rampant corporate retail sector this diversity of distribution remains a central feature of the agro-food system. The idea that the informal or small could be similar, or even larger, in monetary terms than the formal is very significant because it suggests that, while corporate retailers have concentrated market power, exercised in ways that go beyond just direct market share, there is also a wide base of economic activity beyond the corporations. Retailers are aware of this periphery and have moved aggressively into this space in the past two decades. Massmart, for example, has explicitly identified small independent retailers as a competitive threat (Massmart, 2014:17).

Euromonitor (2015) indicates more than 81 000 outlets outside the 'modern' (mainly supermarket) sector. Outlets include formal and informal channels for the 'retail' distribution of food to consumers. Earlier studies estimated 400 000 hawkers/spaza shops in the mid-2000s (Ligthelm, 2006), which obviously can't refer to the same categories because it is five times the amount estimated by Euromonitor above. This would place the number of street traders and spaza shops at hundreds or even thousands per district, playing a critical role in distributing food where it is needed, even if they often are a conduit for corporate products, too. Wills (2009:3) estimated 500 000 street vendors were active in 2007, of whom 72% were women.

According to W&RSETA (2011:5) consumers shop at smaller outlets due to: price, location/convenience, speciality products, customer service, clean stores and knowledge/expertise. Price is related more to perceived value than to the cheapest option available. Small stores receive word-of-mouth referral, based on quality, service, pricing and product differentiation. Smaller storekeepers see technology as having value in streamlining processes, improving turnaround

time, decreasing costs and building customer databases. Tailoring their offerings and specialisation were considered vital for independent retailers to thrive (W&RSETA, 2011:6).

Most people access food from the formal and informal systems, so these are complementary rather than exclusive (Crush and Frayne, 2010). The 'relatively high density of informal and independent food retail channels contribute to a field of choice' (Aliber & Mdoda, 2014) for poor consumers. In 2004 10% of food retail expenditure, more than a quarter of alcoholic beverage expenditure and more than a fifth of cigarette and tobacco expenditure were in the informal sector (Ligthelm, 2006a:42). Hawkers/street markets accounted for 20% of household expenditure in the informal economy, spaza shops 17%, and shebeens 8% (Ligthelm, 2006a:43).

Euromonitor (2015b) calculated total retail employment of 1.11 million in 2014. Between them the big five corporate retailers (*Table 3*) employed around 285 000¹⁰ people in all operations (including outside South Africa) in 2014. This signifies an estimated minimum 825 000 people working outside this corporate core in South Africa (because some of the corporate employment is outside South Africa). Earlier studies estimated employment generated by hawkers at around 415 000 and spaza shops 320 300 (Ligthelm, 2006a:45). These various figures suggest an ongoing importance of this so-called 'informal' sector, which is underestimated in policy and channelling of support.

However, the actors in this periphery are fragmented, unlike corporate retail where the actors are large, consolidated and centralised units that can exert much more direct influence over the market through deliberate action. Smaller retailers face difficulties in competing with modern grocery retailers, including franchises, and could be forced into niche markets to survive. Alternatively, they could constitute an additional outlet for corporate products and processes, i.e. incorporation into/extension of corporate value chains. This is a role they already play to some extent. The Competition Commission (2015) argues that shopping centre development has caused a decrease in the number of small, informal and independent retailers, and a decline in their profits and profitability (2015:3). The Commission argues that this is likely to have an adverse effect on employment, income levels and the spread of ownership (2015:4) and is launching an investigation on this. Despite these threats it is expected that traditional grocery retailers will continue to be a key channel in South Africa's retail environment, especially township markets (Euromonitor, 2015b:19). Deeper analysis of the large periphery is taken up in related CoE-FS research.

The corporate core

The terms 'grocery retailers', 'modern retail' and the like are derived from Euromonitor, on whose data we rely. Euromonitor (2015a) indicates a 'modern retail' share of 54% of the 'grocery retail' market, noting this excludes other retailer categories. Spaza shops and other small and informal distribution outlets are incorporated into the definition of grocery retailers, though the extent is unclear. Corporate retailers placed in this category are Shoprite, Pick n Pay and Spar. It is taken that these are primarily, but not exclusively food and non-food grocery products. But grocery retail is not the only channel through which food commodities are exchanged. There are also mixed retailers – including Massmart and Woolworths, in Euromonitor's categorisation – who sell groceries alongside a significant portion of other products (e.g. homeware, apparel, electronics, furniture and even financial services). Mixed retailers incorporate warehouse clubs, mass merchandisers, variety stores and department stores. So in the data the markets and channels are separated out but the food components of each are not.

¹⁰ Including franchises for Pick n Pay but excluding franchises for Spar.

Table 5: The big five food wholesalers/retailers, 2014

	Shoprite	Pick n Pay	Massmart	Spar	Woolworths
Controlling shareholders	Institutions/ Wiese	Ackerman family	Walmart (Walton family)	Institutions	Institutions
Market share (modern grocery retail)	36.1%	25.5%	*	18.7%	
Market capitalisation	R94.1bn	R35.3bn**	R29.9bn	R32.7bn	R87.5bn
Group revenue	R102.2bn	R64.2bn	R78.3bn	R55bn	R39.9bn
Trading/operating profit***	R5.7bn	R1.0bn	R2.0bn	R1.9bn	R3.9bn
SA supermarket revenue/turnover	R76.9bn				R19.2bn
SA supermarket operating profit	R4.5bn				R1.3bn****
Employees	123 100 (87% in SA)	49 300 plus 23,000 franchise	47 209	4 025	38 855 (73% in SA)
Distribution centre m ² (000)	600	141	328	237	-

Sources: Annual reports, 2014; Financial Mail, 2015; Euromonitor, 2015, 2015a 2015b

*Blank cells indicate this information is not provided in available reports. **Pick n Pay Stores plus Pick n Pay Holdings

Different reporting formats, but usually trading and operating profits are close to one another *Profit before tax

Modern food retail (which is taken to incorporate both large grocery and mixed retailers) was valued at R227.9bn in 2014, or 44% of the total market. Supermarkets constituted 80% of this value, with the rest divided between hypermarkets, convenience stores and discounters (Ogando, 2014). According to Retailer News (2015), fresh produce constituted around 36% of total food retail, dry goods around 30%, beverages 20% and perishables 14%.

The five big food retailers in South Africa are also the five largest retailers across all sectors: in order, Shoprite, Pick n Pay, Spar, Massmart and Woolworths (*Table 5*). Between them they hold a third of the total retail market (food and non-food) (Euromonitor, 2015). In 2014 Shoprite had a market capitalisation of R94.1bn; Woolworths R87.5bn; Pick n Pay Stores plus Pick n Pay Holdings R35.5bn; Spar R32.7bn; and Massmart R29.9bn. This reflects the capitalisation of each entire company including non-food and offshore operations, and not only their food business. Specifically food business data is not provided in annual reports or other public sources.

We discussed the challenges with categorising food retailers above. Further challenges are lack of precise information about food markets. There are a few general comments we can make about the big five food retailers as a group. First, they had a combined profit (including but not limited to food) of R14.5bn in 2014. This is almost three times the profit of the top five food manufacturers. Follow-up work will need to include identifying how profit is constructed and reported, because it definitely excludes large management salaries and options, as well as corporate facilities, buildings, perks, etc., all of which run into the billions. Profits also refer only to those which are declared in South Africa.

There are different distribution models, including corporate stores, franchises and wholesaling. Shoprite and Pick n Pay operate a combination of corporate (owned) and franchise stores, Massmart and Spar focus on wholesale and wholesale-retail hybrids, while Woolworths focuses on corporate stores. Retailers also target different market segments, with Shoprite and Massmart emphasising the lower and middle segments, Spar and Pick n Pay aspiring to span all segments, and Woolworths targeting the higher end of the market. However, all retailers are under pressure, from their competitors and cash-strapped consumers, to offer lower prices. Economies of scale are the order of the day for the mass market. Premium niche markets are also available at the upper end, where price is less of a concern. The sector is very competitive, with ongoing product and process innovations, together with suppliers, in a continuous quest

for efficiency and cost savings, and in-store design and formatting innovations being adopted to find a competitive advantage.

Some **key trends** in food retail include product diversification beyond groceries; multi-channel approaches to reaching consumers; in-store financial services, including the distribution of social grants; larger format stores, including hypermarkets and mall expansion; format diversification, such as forecourts and convenience stores; and mining of customer data (gathered, for example, through loyalty programmes and data-sharing agreements) to shape supply and demand. Woolworths (2014:86) indicates a trend in its own operations towards fewer, more strategic food suppliers, many with exclusivity arrangements for private label products. Euromonitor (2015e:38) notes private label penetration of packaged food. A few years ago, private labels stood at around 12–15% of market share, and are an increasingly significant player in the retail space (SGE, 2013:33). Expansion of private label products allows retailers to take control of branding, a profit centre in the era of intellectual property rights.

There is also a trend towards partnerships between retailers and property developers in the development and financing of malls and shopping centres. This introduces urban property markets into the equation. Retail property (shopping centres, etc.) is a significant node of wealth creation in the agro-food system (*Figure 2; Annexure 1*), with listed domestic retail property portfolios valued at R117.7bn in 2014 (Financial Mail, 2015a). Work on these and other elements could be expanded as requirements dictate.

Food service and other channels to the consumer

Food service refers to food prepared outside the home that may be consumed at home or outside the home. It includes consumer food service that is direct to consumer: restaurants, fast food, street foods, hospitality (hotels, etc.), and institutional food service, which involves companies that prepare food for sale via an intermediary, e.g. hospitality, public institutions (schools, hospitals, prisons, military, etc.), canteens and other catering operations for the public and private sectors, and others.

Consumer food service has many categories, ranging from full service restaurants through to street stalls/kiosks (Euromonitor, 2015c). Total sales came to R78.3bn in 2014 (Euromonitor, 2015c:4), of which food was 72% and beverages was 28%. For comparison this is equivalent to about 15% of the total wholesale and retail market. Two-thirds of consumer food service sales were from stand-alone outlets, and 20% of sales were from outlets in retail locations, like shopping centres and malls (Euromonitor, 2015c:6). There were a total of 115 529 units/outlets in 2014 and just 7.6% of these were chain outlets. Of the 106 772 independent outlets, around three quarters (78 889) were street stalls/kiosks (Euromonitor, 2015c:5). This market is growing on the back of increasingly time-constrained consumers, who are doing less home cooking and are seeking convenient 'meal solutions' and 'value-for-money' (cheaper) offerings (Euromonitor, 2015c:3). Changing gender power relations in the home and increasing labour market participation by women are other key factors.

Despite this large number of outlets, the top three corporations operating in consumer food service – Yum! Brands (KFC), Spur Corp (Spur, Panarotti's, John Dory's and others) and Famous Brands (Wimpy, Steer's, Debonair's and others) – had sales of R38bn, or 48.5% of market share in 2014 (*Table 6*). Together with Nando's and McDonald's, the top five corporations had a 61.2% share of the market. Chain operators are driving the market, and the recent licensing of US multinational brands Burger King and Domino's Pizza by domestic companies signals expansion. This is a fast growing market with significant negative implications for nutrition and health (Igumbor, et al., 2012; Thow et al., 2015). This theme is taken up in more detail in other state-of-knowledge papers on the consumer food environment and local food geographies.

Table 6: Big three consumer food service companies, 2014

	Yum! Brands	Spur Corp	Famous Brands	Top 5	Top 10
Assessment of control	Institutions (Vanguard 6.1%, State Street 4.5%)	Institutions (Allan Gray 16.2%, Investec 15%, Sanlam 8.1%)	Halimandaris family	*	
Market share	20.4%	14.3%	13.8%	61.2%	69.6%
Sales	R16bn	R11.2bn	R10.8bn	R47.9bn	R54.5bn
Operating profit			R566m		
Top brands	KFC	Spur Steak Ranches, Panarotti's Pizza, John Dory's, Captain DoRego's	Wimpy, Steers, Debonair's Pizza, Mugg & Bean, FishAway	Nando's, McDonald's	Old Fashioned Fish and Chips, Fish and Chip Co, King Pie, Chicken Licken, Ocean Basket, Scooter's
Number of outlets	745	Spur 307, Panarotti's 68	1 689 (Steers 509, Wimpy 497, Debonair's 382, others 301)	Nando's 293, McDonald's 211	Old Fashioned Fish & Chips 371, Fish & Chip Co 311, King Pie 282
Employees			1,442		

Sources: Euromonitor 2015c; McGregor's 2015

*Blank cells indicate this information that is not provided in available reports.

In 2013 there were an estimated 30 000 hospitality establishments, ranging from five-star hotels to youth hostels (Ntloedibe, 2015:3). The leading hotel chains are domestic companies Protea, Sun International, and Premier Hotels and Resorts, with some US companies active: Mercure Accord, Legacy Hotels and Resorts, Sheraton and Hilton (Ntloedibe, 2015:5). Hotels operate autonomously for food purchases, operating on just-in-time supply. The source of supply was specialist retailers 32%, direct from manufacturers 28%, catering wholesalers 20%, fresh produce markets 12%, cash and carry 5% and general retailers 3% (Ntloedibe, 2015:5–6).

The institutional/service sector includes transport services, health (public and private hospitals), educational institutions and prisons. This is a primary target for public sector procurement from black-owned and -controlled supplier businesses, but was valued at a surprisingly small US\$71m (approximately R750m in 2013). Eighty percent of institutional food service is run through state tenders and parastatals. Twenty-eight percent of public sector catering and 55% of private sector catering is outsourced to contract caterers (Ntloedibe, 2015:8). In 2013 contract catering was dominated by a few large companies, including Fedics (owned by Tsebo Outsourcing Group), Kagiso Khulani Supervision Food Services (owned by Compass Group Southern Africa), and Royal Mnandi (owned by MvelaServe Group – now under Bidvest), Royal Sechaba (Royal Serve), Feedem Pitseng (independent) and Bosasa (independent) (Ntloedibe, 2015:9). Contract caterers have their own suppliers, who were specialist retailers (46% of value in 2013), manufacturers/distributors 33%, catering wholesalers 10%, fresh produce markets 5%, general retailers 4% and cash and carry 2% (Ntloedibe, 2015:9).

There are bidirectional relations between food retail and catering. As indicated, caterers and hospitality draw some of their supplies from retailers, while retailers get some of their supplies from food service companies, especially in the form of contracts for prepared meals for sale in retail outlets. 'Meal solutions' is a growing category, with a wide range of products from canned and frozen products to ready meals. Tiger Brands was the market leader in meal solutions, and Woolworth's private label was the top brand in 2014 (Euromonitor, 2015d). Bidvest Foodservice constituted 54.7% of Bidvest's total turnover in 2014, but only 6.5% of this was in Southern Africa, including South Africa, and the rest was in Asia Pacific and Europe (Bidvest,

2014). Retailers and manufacturers, including Checkers (Shoprite), Unilever, Tiger Brands and others have established dedicated food service divisions.

4. GOVERNANCE IN THE SOUTH AFRICAN AGRO-FOOD SYSTEM

System-wide governance

Governance is used here to refer to the overall organisation and management of production and distribution in the food system and in specific commodity chains. There is an element of technical coordination, which is dealt with in the section on logistics above. However, governance goes beyond this technical element to incorporate broader processes of structuring of relationships in the system, the definition of key metrics (finance, quality, competence, etc.) and the division of tasks and management of these processes, etc. Kaplinsky and Morris (2001:30) divide governance into the legislature (making the laws), the executive (implementing the laws) and the judiciary (monitoring the conformance to laws). These are seldom performed by the same firm or entity in the system, i.e. there are usually multiple sources of governance. The effective exercise of sanctions is key to the functioning of governance. The most important governance actors are those where the system structure will disintegrate if they are not present. So, for example, an individual small-scale farmer or supplier is not a core governance actor, but large retailers are because the latter play a central role in setting standards and monitoring compliance across commodities.

Although strong nation-state regulation characterised governance in the apartheid era, private interests did play a role in governance. Likewise, even with a shift to corporate power the state continues to play a governance role. It is more a question of the shifts in responsibilities and functions of different actors. In particular, corporate self-regulations have become more pronounced.

Two overlapping governance systems can be considered. The first is governance at the level of the agro-food system as a whole, and the second is commodity-specific or value chain governance. Overall system governance covers regulations and the systemic structuring of relationships that affect all actors across the system, for example corporate governance, land and labour legislation and minimum food safety standards. Commodity-specific governance refers to the more specific and detailed governance of production and distribution systems by commodity. For example, governance systems for citrus fruit will be very different from those for meat in their details, with a different balance of forces and configuration of power, but both are subject to system-wide regulations and procedures. Value chain governance is the construction and maintenance of systems of value production and exchange. These are tied to specific commodities, which may be material or immaterial, but which have an exchange value.

State regulation continues to play a very important role at the system level, despite a shift in power and control to corporations. This is evident in the current regulatory framework through which the corporate food regime governs in South Africa. For certain system-wide activities, effective governance is at a national level. First and foremost is regulation of corporate governance itself. Relevant national laws and policies include the Companies Act 71 of 2008, and other laws and policies on corporate governance (e.g. King III and IV), financial laws, labour laws and black economic empowerment (BEE). There is competition law with the Competition Act, with key roles for the Competition Commission and Tribunal in regulating capitalist competition (Lewis, 2012). The Public Investment Corporation (PIC) is governed by the Public Investment Corporation Act 23 of 2004 and the Public Finance Management Act 1 of 1999. There are many more. These laws and regulations perform an effective regulatory role from the point of view of institutional integrity, contract enforcement, property rights and many other

dimensions necessary for the systemic functioning of capitalism. There may be points of conflict between capital and the state, for example over redistribution and BEE, but common ground is also found between the interests of the state and of fractions of capital.

The state is also more specifically involved in regulating the agro-food system in many other ways. The list of relevant policies, laws and regulations is very long and this is a whole area of research in itself. One example amongst many is food safety and quality standards. The state – especially through DAFF, the Department of Health (DoH), the Department of Trade and Industry (DTI), and also municipalities – plays a fundamental role in establishing and enforcing base food safety and quality standards. Between them, the three departments have very many detailed specifications and systems for standardising, monitoring and enforcement. South African has generally been free of regular outbreaks of food safety concerns, although more recently questions about food quality are emerging from consumers and civil society organisations (see Igumbor et al., 2012; Mountford, 2015).

Mukumba and Hornsby (2011) provide a detailed description of the way the international food safety complex (IFSC) has rooted in Southern Africa. They identify the two most prominent institutions in the IFSC as Codex Alimentarius and the WTO Sanitary and Phytosanitary (SPS) Agreement. The terms of these agreements are operationalised in the national agro-food system through an inter-departmental National Codex Committee with the DoH Directorate: Food Control as the national contact point. In short, Codex Alimentarius is a global agreement that sets global food safety standards and rolls them out nationally as the basis for trade. The WTO SPS Agreement regulates cross-border trade of agro-food products. DAFF's International Trade directorate is the oversight institution. This is just one example of how the state continues to play a crucial role in agro-food system governance.

Commodity-specific value chain governance

As indicated earlier, the governance structure under apartheid was built on the basis of strong state regulations but with a central role for the boards and cooperatives that gave farmers and processors immense power in formal governance. The deregulation of marketing, which culminated in the Marketing of Agricultural Products Act in 1996, essentially moved governance structures away from tight state control and opened the room for industry self-regulation. The Act required the establishment of trusts to take receipt of control board assets; although in a number of cases the assets were distributed to producers (Bayley, 2000). One result of the dismantling of the control boards was a shift in power from representative organisations of producers (e.g. the South African Agricultural Union) and towards commodity-based structures. Corporations have significant influence over these institutions through direct representation on executive structures.

The most obvious changes in food system governance relate to the shift in power from producers and processors to retailers who exert significant influence through control over supply chains, the definition, monitoring and enforcement of quality standards and criteria for participation in the chain. There is a huge body of international literature on the construction and control over standards by retailers and more generally the role of retailers in value chain governance. This control very directly shapes the character of food products that are made available to consumers. Much has been written on the dynamics of supplier relations and this will not be covered here. This relates to ideas of buyer-driven chains, lead firms and a range of flexible and hybrid governance styles (e.g. Sturgeon, 2000; Raikes et al., 2000; Kaplinsky and Morris, 2001; Gibbon and Ponte, 2005; Gereffi and Lee, 2012, for a small sample). Some of this material is compressed in the value chains overview produced as part of the CoE-FS research process in 2015.

Power asymmetries are central to value chain governance. Power is exercised through ensuring consequences in the chain and actively managing or coordinating the operations within specific commodity chains to ensure these consequences are met (Kaplinsky and Morris, 2001:29–30). The retailers as the dominant entities control these processes closely, although there may well be a multiplicity of nodal points of governance and coordination functions (Kaplinsky and Morris, 2001:29). Retailers are able to dictate terms to suppliers who deliver products to central depots or warehouses for distribution to retail outlets using the retailers' own transport network. Suppliers compete for shelf space and may have to pay slotting fees to secure space (SGE, 2013:43).

There is a fairly large body of literature looking at the role of retailers, manufacturers and commodity associations in integrating black farmers into commercial value chains (e.g. Sartorius and Kirsten, 2006; Bienabe and Vermeulen, 2011; van Schalkwyk et al., 2012; van der Heijden and Vink, 2013; Du Toit et al., 2015). Most of the larger private sector agro-food companies and institutions downstream of primary production have some kind of small farmer procurement programmes, though these are generally small – a few hundred people at most. This is a specific field of research and will not be covered in detail here, but it is important to note because of the power imbalances in supply chain relations that often result in adverse incorporation of workers and smaller producers into commercial value chains (Hickey and du Toit, 2007; Du Toit, 2009). Mainstream views identify a number of challenges, including limited small-scale farmer access to market information; weak bargaining power; poor rural infrastructure; lack of access to finance and technical support; trust issues; and ability to meet rigorous requirements, including quality standards, volumes and consistency. The recommendations therefore focus on how to make producers/suppliers more efficient and perform better to enable their participation in value chains. However, other studies emphasise struggles for the appropriation of value, which moves the discussion out of a technical frame of reference and into a frame that explicitly recognises the political and power dimensions of value chain integration and control.

Corporate power and the consumer food environment

The consumer food environment essentially refers to the environment in which consumers make choices and decisions about food. The concept is covered in more detail in other research reports produced for this project. Many social, psychological, physiological, cultural and economic factors shape the choices people make about what to eat. One consequence of modernisation and capitalist expansion is a nutrition transition (Popkin, 1993; Igumbor et al., 2012) away from diets high in cereal and fibre and towards diets high in sugar, fat and salt, which produce the greatest allure for the lowest possible cost (Moss, 2013; Mountford, 2015).

These trends are apparent in South Africa (Steyn, 2006; Igumbor et al., 2012). Obesity is growing alongside continued nutritional deficiencies in South Africa. Seven percent of deaths were attributed to excess body weight in 2000, and 12% of the overall disease burden was linked to dietary intake and respiratory disease in 2004. There is a steady increase in per capita food supply of fat, protein and total calories, with salt intake in excess of recommended levels. This is linked to changes in dietary patterns as wealth increases, with increases in the sales of packaged foods (Igumbor et al., 2012:1). The largest increases in the consumption of sugar and sweeteners are through processed foods (Ronquest-Ross et al., 2015). Accumulated losses to South Africa's GDP between 2006 and 2015 from diabetes, stroke and coronary heart disease alone were estimated to cost US\$1.9bn, according to Prof. Karen Hofman at Wits University Department of Public Health (Mountford, 2015:2).

Rising obesity rates and food-related non-communicable diseases present a complication for food corporations, since research implicates their products as a cause of many modern diseases. At the same time, corporations have a duty to shareholders to increase sales and make money. Packaged foods are very profitable but would not be as appealing without the amounts of added sugar, flavourants and salt (Mountford, 2015:1). Corporations make their profits off processed products with economies of scale and where the production process is controlled down to a very detailed level. The production process of breakfast cereals, for example, has been reduced to a set of standardised inputs that can be micro-adjusted as required to meet anticipated market demand. Products high in salt, sugar and fat content are easy and cheap to produce and are desired by consumers. Nutrient inputs are volume controlled. There is a standardised base product that can be tweaked to meet regulatory demands and consumer fads alike¹¹. In such conditions, corporations may be able to adapt products to respond to consumer trends or fads for healthier food by increasing (synthetic) micro-nutrient inputs, or decreasing sugar or salt content, for example, without really changing the product at all. This suggests that consumer activism could result in some improvements in food content, but on the other hand, it does nothing whatsoever to challenge corporate power.

Here we should view demand not as some naturally given consumer preference from consumers for particular products, but as the willingness of consumers to pay for the products that are made available. In this sense, food value chains are producer-driven rather than buyer-driven (if the consumer is considered the ultimate buyer). This statement can lead us into a complex discussion about the extent to which food retail, and commodity distribution in general, can be considered as value adding. This is not the place for a longer discussion. This question is important, however, because it opens the way to incorporating consumers as part of the chain, whereas the notion of 'drivenness' in chains as used by Gereffi and others stops at the point at which exchange value is exhausted. By incorporating the end consumer, a different picture emerges of the structure of the food system and the distribution of power. The extension of Gereffi's model to incorporate end consumers results in a re-characterisation of retailers/distributors as producers (of value) and therefore agro-food chains as producer driven.

¹¹ See, for example, the BBC documentary on breakfast cereal, 'The Most Sellable Food' <https://www.youtube.com/watch?v=UnzBq3htsgE>

Further investigation is needed to get a better understanding of the factors that shape product formulation and innovation. It is apparent that shareholder returns is a major driver, which will lead corporations to formulating the cheapest products, with innovation focused on developing products that are cheap and easy to manipulate. Breakfast cereal is an example of product formulation and innovation that converts cheap, readily available bulk commodities (grain, sugar) into premium products with large profits. Further investigation might consider the technical constraints to such processes (for example, shelf life, possible chemical combinations, etc.) that are the domain of food technologists. Behind the scenes, food technology and product innovation is big business. The South African Association for Food Science and Technology (SAAFoST)¹² is a national association of food technology professionals with about 2 000 members, including institutional membership by many of the corporations mentioned in the agro-food system mapping above. Another body that deals with product formulation and innovation is the International Life Sciences Institute (ILSI) South Africa, which presents its mission as improved nutrition and food safety. ILSI's decision-making body is composed of Bayer CropScience, Coca Cola, Kellogg, Monsanto, Unilever, Clover, DSM Nutritional Products, Mars Africa and Nestlé South Africa¹³. Apparently neutral food technology is channelled in the interests of corporate profitability.

Apart from product formulation and innovation, corporations also pursue other efforts to increase the demand for cheap, easily manipulated products. Advertising, including to children is the most obvious method for altering consumer perceptions of products with poor nutritional value. Food and beverage companies were the top four advertisers in South African in the first half of 2014, and were 12 of the top 50 advertisers: Unilever (1), Shoprite (2), Pick n Pay (3), SABMiller (4), Massmart (9), Distell (17), Yum SA (18), Famous Brands (30), Tiger Brands (32), Coca Cola SA (35), McDonald's (37) and Spur Steak Ranches (49). Unilever's adspend was 3.6% of the total from January to August 2014, and Shoprite's was 3% (Financial Mail, 2014:59). Manufacturers and retailers collaborate on sales promotions and packaging to give the impression of a healthy product (Igumbor et al, 2012:5). The use of data mining and analytics leads to 'predictive marketing'¹⁴.

Corporate strategies to alter the CFE include increasing processed food availability through supermarket expansion into lower income areas; using informal channels; aggressive expansion by fast food chains; and increasing affordability, especially through corporate economies of scale and supply chain efficiencies (Igumbor et al., 2012:4). Healthier food products that are more readily available through supermarkets are typically 10–60% more expensive than less healthy foods by weight, and 30–110% more by cost of food energy. Refined cereal and foods with added sugar and fat are amongst the lowest cost sources of energy, while nutrient-dense foods (e.g. lean meats, fish, fruit and vegetables) cost far more (Igumbor et al., 2012:4).

Corporate influence on dietary guidelines is another area of demand construction. The state plays a coordinating role in regulating basic food nutrition, but under the influence of scientific advisors, many of whom are located in corporations. Corporate influence is expressed through PPPs, sponsorship and association with dieticians' associations and a range of other institutions that influence government policy, including SAAFoST, the Association of Dieticians of South Africa (ADSA) and the Nutrition Society of South Africa (NSSA). SAAFoST sits on the Food Legislation Advisory Group in the DoH and launched the Food Advisory Consumer Service in 1995 to provide 'factually/scientifically correct information on food issues' together with ADSA, the DoH and the South African National Consumer Union¹⁵. The Consumer Goods Council of South Africa, whose members are retailers, wholesalers and manufacturers of consumer goods,

¹² <http://www.saafofst.org.za>

¹³ <http://www.ilsio.org/SouthAfrica/Pages/AOM.aspx>

¹⁴ <http://www.bizcommunity.com/f/1502/BizTrends2015.pdf?2>

¹⁵ www.foodfacts.org.za

has a Food Safety Initiative¹⁶ where it claims to offer 'objective, independent scientific advice' and assistance in terms of related legislation. It has made inputs on food ingredients, the South African Food-based Dietary Guidelines and the South African Food Guide. While such partnerships between government, consumer representatives and food producers could be beneficial, in their current structure they are driven by corporate interests.

ADSA influences government food policy, with ties to food corporations. ADSA sponsors include Sea Harvest, Hulett's Sugar (EquiSweet), Kellogg's, Pick n Pay, DSM, Woolworths, Nativa, Unilever, Parmalat, Pronutro and Health Connection (Mountford, 2015:3). It has diamond, silver, gold and platinum sponsors, with diamond status costing R64 000 in 2014. The ADSA president, membership relations manager, and communications manager were all staff of Kellogg's in 2014 (Mountford, 2015:4). ADSA and NSSA provide a veneer of scientific neutrality to the branding of 'healthy' foods, for example, 'health bars' even though these have very high sugar content. Another example of corporate influence on the CFE is through 'health by association', e.g. Kellogg's sponsorship of the NSSA's 2014 Nutritional Congress and ADSA, or the training of nutrition professionals (Mountford, 2015:2). This legitimisation of food companies as global health experts is fuelled by a growing number of PPPs with public health organisations. Food companies are rebranding themselves as nutrition companies, asserting authority not only over food production but also malnutrition, obesity and even poverty (Mountford, 2015:3).

Corporate nutrition, health and wellness initiatives are another way in which corporations are seeking to take control of trends in the population towards healthier food. All the major manufacturers have their own nutrition, health and wellness initiatives, for example Tiger Brands' Eat Well, Live Well initiative works with the Nutrition Information Centre at University of Stellenbosch to offer guideline daily amounts (GDAs). Tiger Brands' Foundation supports an in-school breakfast feeding programme with the Department of Basic Education (Tiger Brands, 2014:121). Coca Cola's Beverage Institute for Health and Wellness in Southern Africa¹⁷ claims to be 'a resource for health professionals on the science of beverages, hydration and active healthy living'. It is based on poor argumentation that says all calories are equal so therefore it doesn't matter what food you eat, it is only the amount. This is easily countered with the example of refined sugar being high in calories (energy) but low in nutrients compared with other foods. Such corporate initiatives indicate a privatisation of health standards and attempts to impose a private sector authority in the field of health and nutrition (An et al., 2013).

Under pressure from public health advocates, in particular, government introduced draft regulations to reduce sodium content in processed food; regulations limiting trans-fats were applicable from 2011; and there are efforts to regulate sugar content (Steyn et al., 2003; SGE, 2013:18). Government efforts are fairly weak, with some work on product labelling, marketing to children and product reformulation. Nutritional labelling remains voluntary unless a claim is made and there is a standard format for labelling and requirements for use of certain terms (e.g. 'high in', 'free of'). Voluntary GDA labelling is used by a number of big organisations (Igumbor et al., 2012:5). Nutritional claims must be supported by an analysis done on the product by a reputable laboratory accredited by the South African National Accreditation System (SANAS), following procedures set out in regulations, and endorsements can only be granted by an organisation run by professionals (SGE, 2013:17). As indicated, though, the neutrality of professional organisations may be compromised by corporate sponsorship and influence. In 2007, draft guidelines were developed to prohibit advertising of non-essential foodstuffs to children under 16, but these were shelved. Companies responded with a voluntary pledge with limited scope, without specific commitments, and no monitoring reports have been released (Igumbor et al., 2012:6). In February 2016 the Minister of Finance announced a tax on

¹⁶ www.cgcsa.co.za/fsi/about

¹⁷ <http://www.beverageinstitute.co.za/>

sugar to be levied with effect from April 2017, and it remains to be seen how that may be implemented, or what impact it will have.

5. TRENDS AND DYNAMICS IN THE AGRO-FOOD SYSTEM

Agro-food trade

In the era of national regulation, both exports and imports of agro-food products were regulated. Already in the 1920s perishable product exports were controlled and sugar imports were regulated; in the early 1930s wheat, flour and meal imports were restricted, while exports were subsidised (Bayley, 2000:15–17). Wheat imports were subject to quantitative and qualitative controls and were purchased by the statutory Wheat Board on behalf of the government. Qualitative controls meant Australian or Canadian wheat was favoured over Argentine wheat (World Bank, 1994:70). Deciduous and citrus fruit, which were major export crops, both had statutory single-channel export schemes. Deciduous fruit went through the board, and in 1988 the single channel monopoly was taken over by the private Universal Frustrate Cooperative (Unifruco), partly as a measure to escape sanctions against apartheid (World Bank, 1994:72). In citrus, Outspan was the monopoly channel.

This changed after 1994, with the signing of the WTO AoA, which was a key feature in the restructuring of the food system in the early 1990s. The agreement required signatories to convert trade controls into a system of standardised tariffs and to reduce these tariffs over time. It also required countries to open up their domestic markets to a certain minimum of imports, and a reduction in export subsidies. Without going into detail here, the WTO AoA was tailored to the interests of ‘the Quad’ (the United States, European Union, Canada and Japan), and the terms of the WTO AoA allowed the US and the EU to secure their domestic programmes at a global level while extending the opportunities for exporting by limiting the right of other countries to close their markets (Einarsson, 2000).

Trade liberalisation and deregulation in South Africa were strongly influenced by large-scale farming and processing entities that sought new markets (Bayley, 2000). Trade liberalisation went hand in hand with the dismantling and privatisation of the control boards and the single channel marketing systems. This resulted in the extension of corporate control over marketing, for example the merging of Unifruco and Outspan into Capespan and its more recent subsumption under Zeder (see *Figure 5*). The state continues to play a regulatory role, especially in quality control, to comply with international standards, for example through the Perishable Products Export Control Board and others.

Vink and van Rooyen (2009:7–8) provided an overview of trends in trade in agricultural products since deregulation, including the following: imports have grown faster than exports, including in manufactured food goods; imports grew from around 5% of total agricultural output in 1965 to about a fifth in 2005; and Argentina became a significant source of imports, especially in the form of animal feed.

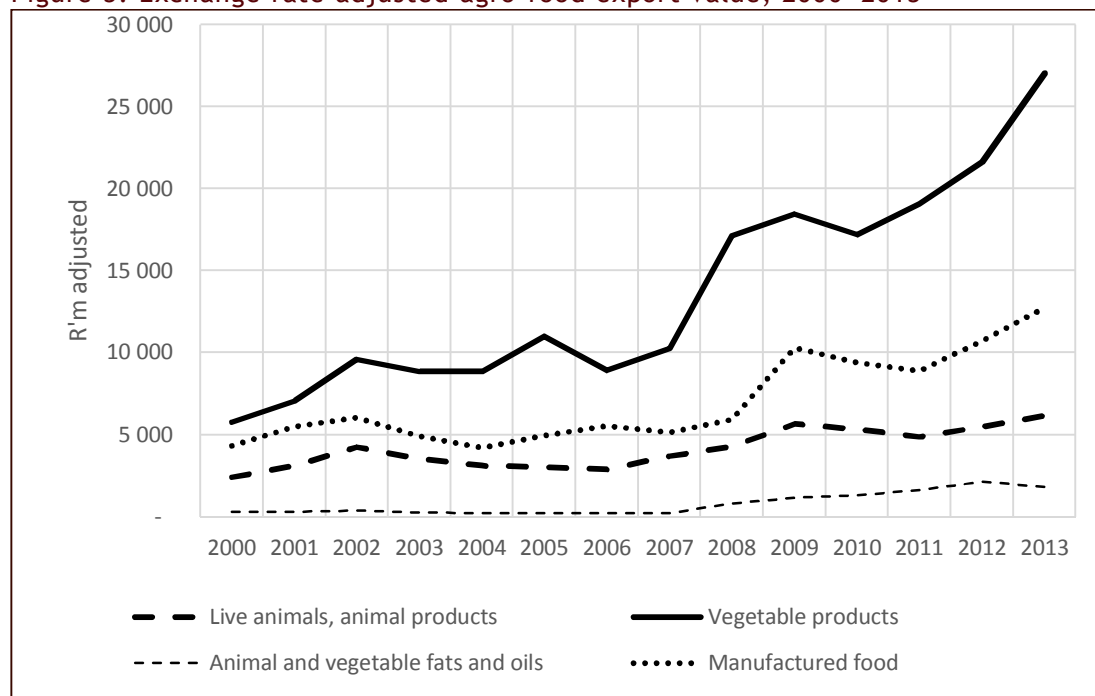
The main market for agricultural products is domestic, but there is also a significant export market. Agro-food exports¹⁸ were valued at R84.5bn in 2014 (DTI, 2015), of which manufactured food was just over a quarter. The proportion of processed to unprocessed exports has risen rapidly from under 60% in the mid-2000s to 70% in 2012 (DAFF, 2015:80). According to AFMA figures, primary unprocessed exports were valued at R48.7bn in 2014 (AFMA, 2015). *Figure 3* shows export values adjusted by the real effective exchange rate (REER), which

¹⁸ Excluding live trees and other plants; beverages, spirits and vinegar; residues and other waste products (mainly for animal feed); and tobacco.

measures changes in the weighted average purchasing power of the rand (ITAC, 2014:18) based on the year 2000. Rand weakness after 2007 facilitated an expansion of exports, especially in vegetable products (incorporating horticultural and field crops) and, to a lesser extent, in manufactured food.

Fruit and nuts is by far the largest export category. This sector is one of the 'winners' in trade liberalisation. The main Southern African Customs Union (SACU) exports in 2014, most of which are from South Africa, were: citrus R11.6bn (14%); wine R8bn (10%); grapes R6.3bn (8%); apples, pears and quinces R5.7bn (7%); and maize R5.1bn (6%). Wool is the main animal product exported at R2.8bn and, after maize, sugar is the biggest field crop export (R3.5bn) (DAFF, 2015:81), with sugar production also coming from Swaziland in SACU. The European Union (led by Netherlands and the United Kingdom) and Southern Africa (led by Zimbabwe and Mozambique) are the two largest export markets (DAFF, 2015:81).

Figure 3: Exchange rate adjusted agro-food export value, 2000–2013



Sources: DTI, 2015; REER from ITAC, 2014

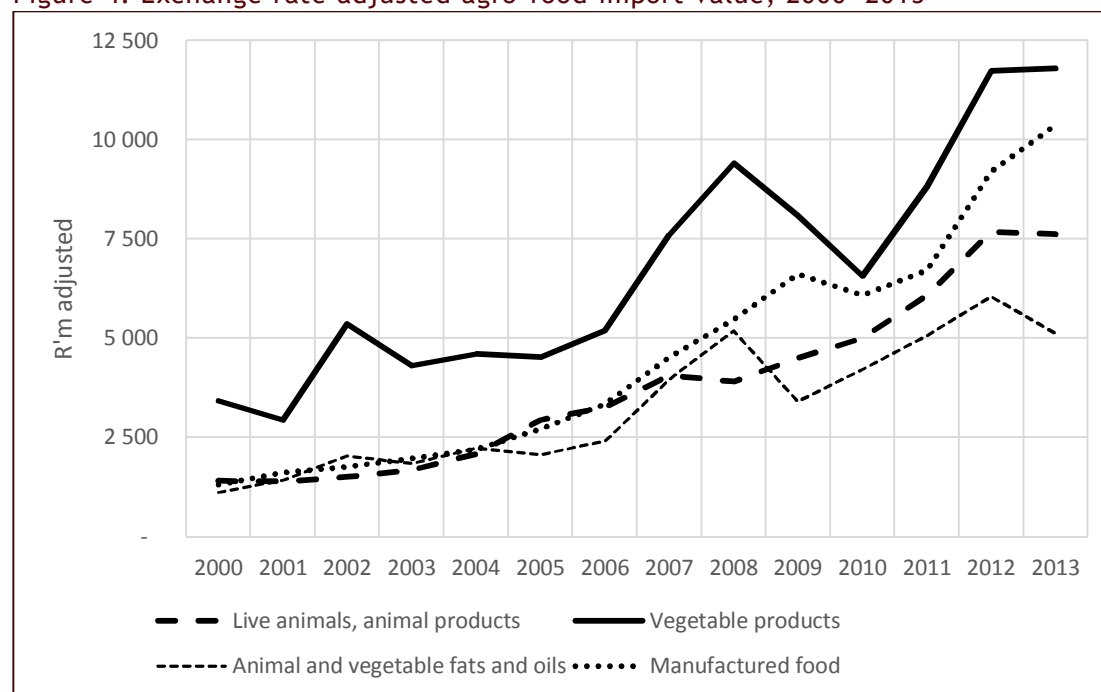
The preliminary total of all agricultural imports was R61bn (around 6% of total merchandise imports) in 2014 (DAFF, 2015:80). According to the DTI (2015), South African food imports¹⁹ were valued at R56.3bn in 2014. Whichever of these is correct, the figures indicate a positive trade balance for agro-food products. Of total food imports, R16bn (28%) was manufactured food, with sugar and sugar products in turn contributing 28% of manufactured food imports. Imports of soft drinks increased by 92% between 1995 and 2010 and imports of processed snack foods increased by 83% in the same period (Thow et al., 2015). Agro-food imports as a percentage of total imports has remained fairly stable since 1990, ranging between 5–7% of the total. Overall, however, imports tend not only to be cheaper than local products but also to be nutritionally better. Domestic products tend to have higher sodium and saturated and total fat content than imports (Igumbor et al., 2012:5).

There was a sharp rise in the value of agro-food imports, especially after 2005. *Figure 4* shows imports adjusted for the REER, indexed to 2000. Although there was a temporary drop after the

¹⁹ Excluding live trees and other plants; beverages, spirits and vinegar; residues and other 'waste' products (mainly for animal feed); and tobacco.

2008 global economic crisis, imports have continued expanding, especially vegetable products (horticulture and field crops) and manufactured food imports. Major SACU agricultural imports in 2014 were wheat R5.5bn (9%), rice R4.6bn (7.5%), poultry meat R4.1bn (6.7%), and palm oil R3.8bn (6.2%) (DAFF, 2015:82). Major importing countries in order of value are the United Kingdom, Argentina, Indonesia, Brazil, Netherlands, China and Germany (DAFF, 2015:82).

Figure 4: Exchange rate adjusted agro-food import value, 2000–2013



Sources: DTI, 2015; REER from ITAC, 2014

Increased poultry imports from the US are targeted as a trade-off for South African participation in the United States' African Growth Opportunity Act (AGOA). In 2014 poultry imports were at 12.5% of domestic production, and, if South Africa agrees to AGOA's terms, this figure will rise, leading to concentration in domestic poultry production. (There are already rumours, for example, that Astral may seek to acquire Sovereign Foods.) This certainly will lead to cost cutting and job losses, but from a DTI point of view, it may be seen as a necessary trade-off for expanded trade to the US in other sectors, notably automobiles (Kripke, 2015; Spector, 2015).

South Africa has a number of dedicated food importers, including Patley's (owned by Bidvest), Tacoma Foods, M&L Distributors, Rieses Food Imports, Mistro Catering Supplies and others (SGE, 2013:42–43). Retailers have their own in-house import departments and may also use third party distributors/importers. Distributors can add as much as 30% to the cost of imported goods (SGE, 2013:43).

Financialisation and institutional ownership

It must be noted that this is only a preliminary analysis. There are many complexities in tracking ownership, not least that publicly traded shares often do not give the full picture of ownership. Some shares may be allocated privately and given greater weight/voting rights. This allows private investment consortia or families to control companies, even when the majority of publicly traded shares are held by others. More investigation on this is required. We also need to incorporate skills for financial analysis of corporate reports, because a lot of detail is hidden.

At the outset we need to define or at least describe some key characteristics of financialisation and its role in relation to corporate power in the commodity production cycle. Aglietta and

Reberioux (2005:1) describe financialisation as growth in the liquidity of capital markets, the quantification and transfer of risk, and an upsurge of investment funds responsible for the management of continually increasing savings. They use the term 'finance-led capitalism' to describe this new growth regime. They highlight tradability of securities and the transfer of risks (Aglietta and Reberioux, 2005:3). Financialisation of the economy has enabled the spread of new technologies, while dramatic technological changes have catalysed the establishment of a finance-led regime. The development of venture capital in this period is notable. Increased network density and digitising of information have increased the information-processing capacities of capital markets (Aglietta and Reberioux, 2005:19–20).

Analysis of the role of finance capital and financialisation in the South African agro-food system is in its infancy. The only published work, by Ducastel and Anseeuw (2015), starts the process of looking at ways in which farmland and agricultural assets are converted into financial assets. In South Africa the role of finance in the agro-food system is manifested in various ways, two of which are the institutionalisation of share ownership and the growth of agri-investment companies. The expansion of consumer credit, wider financial inclusion and their impacts on food markets require further research. Another area that requires analysis and monitoring is the use of risk-based financial instruments, such as derivatives, securities and futures as a profit centre in productive entities. These activities are central to the activities of financial institutions, especially with deregulation in the late 1990s. To date, this still appears to be a very minor portion of agro-food corporations' profit as a direct activity, although more investigation is warranted. In South African agro-food corporations, these instruments are used, but it appears mostly for the original purpose for which they were constructed, i.e. hedging against commodity and currency volatility, rather than as profit centres in their own right. In many cases these activities currently are running at a small loss, according to corporate annual reports. Further research is needed to extend the work on financialisation, including the impact of financialisation on value extraction from productive assets.

Institutionalisation of share ownership refers to the rise to control of institutional shareholders, most significantly pension funds, but also including other public shareholdings by unit trusts/mutual funds, other management funds, corporate holdings, sovereign wealth, insurance companies, depository receipts, exchange traded funds, custodians, investment trusts and hedge funds. Non-public institutional shareholders can be added to this, including empowerment holdings, corporate own holdings and share trusts/share incentive schemes. At the moment, this is just at the stage of naming, but it helps to map out what we are looking at first to know where to focus. In this case, pension funds and agri-investment companies are the focus of our attention. These are dealt with very briefly here.

The Public Investment Corporation (PIC), whose primary mandate is to manage the funds of the Government Employee Pension Fund (GEPF), has approximately 13% of total market capitalisation on the JSE²⁰. It is the largest investment fund operating in South Africa, with assets under management at around R1.6 trillion in 2014 (PIC, 2014:i). The GEPF constitutes 89.3% of assets under management, and the Unemployment Insurance Fund 5.8%. (PIC 2014:4). From corporate annual reports and McGregor's it is possible to get a rough idea of PIC/GEPF shareholdings in the agro-food system. Although shares held fluctuate, it is apparent that PIC/GEPF is a major shareholder in many of the largest corporations operating in the agro-food system (*Table 7*). PIC/GEPF is often the largest single shareholder in a context where 15% may confer effective control.

²⁰ <http://www.pic.gov.za/index.php/investments/listed-equities/>

Table 7: PIC/GEFP share ownership in major corporations related to the agro-food system 2014

Shares	Companies
15-20%	Astral Foods, AVI, Barloworld, Bidvest, Remgro, Sasol, Spar, Super Group, Vukile, Woolworths
10-15%	Brait, Grindrod, Growthpoint, Hyprop, Imperial, Omnia, Pick n Pay Stores, Reinert, Sasol, Shoprite, Tiger Brands, Tongaat Hulett
5-10%	Attacq, City Lodge, Famous Brands, Illovo, Massmart, Oceana, Pioneer Foods, PSG Group, Quantum Foods, Resilient, SABMiller, Sovereign Food
1-5%	Clover, KAP Industrial, Pick n Pay Holdings, RCL Foods

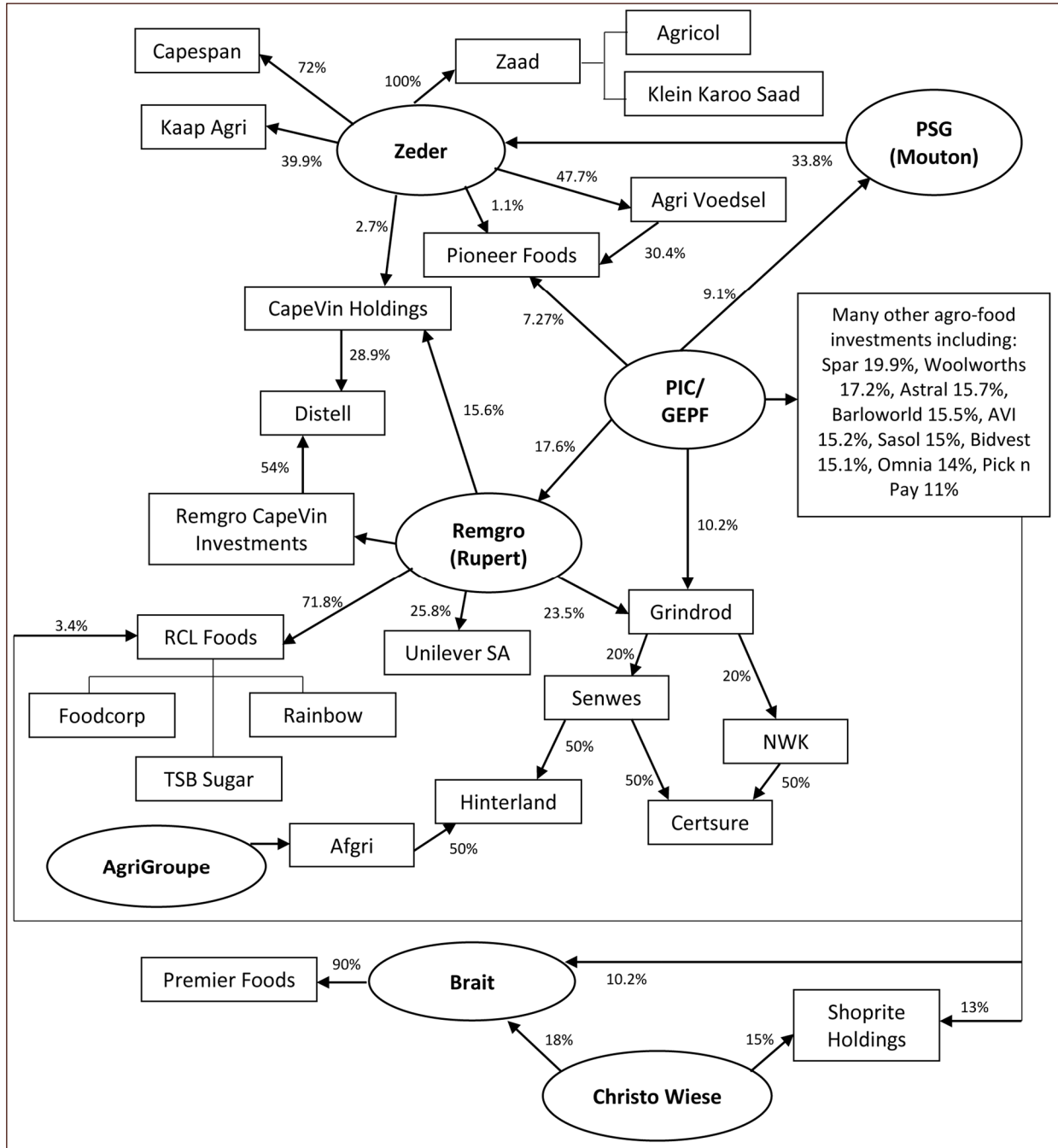
Sources: Annual reports 2014; McGregor's 2015

PIC has very well-defined parameters for its investments, including allocation limits to different asset categories (PIC, 2014). The GEFP mandate is for investment in infrastructure development, job creation, and the provision of social amenities to South Africans (PIC, 2014:5); and a mandate of 5% of investments to go into the rest of Africa, in developmental investments and private equity (PIC, 2014:6). In 2014, domestic listed investments were 70% of total allocations, domestic unlisted investments were 20%, and offshore was 10% (PIC, 2014:62). Unlisted investments cover a number of categories, including agriculture, agro-processing, manufacturing and beneficiation, and retail property (PIC, 2014:63). Five percent (R335m) of developmental investment went to agriculture and agro-processing in 2013/14 (PIC, 2014:82); 4% of private equity allocations went to agriculture and agro-processing (R472m); and 51% (R6bn) went to industrial (PIC, 2014:87).

Another source of pensions is from within the corporations themselves. More analysis needs to be done on financial reports in this regard, to identify where worker pensions are being invested. Needless to say, in both the public and private pension funds individual contributors do not have significant control over investment decisions, despite the value notionally being theirs. Contributors have very limited or no voice through their share ownership because their financial contributions are atomised before being aggregated under the control of an investment institution. Workers and consumers lack control or say over these vehicles, even when the funds are their own future pensions. Control is exerted from the top, through management and shareholders. Other South Africa-based financial institutions such as Stanlib, Coronation, Allan Gray and others are also significant investors in agro-food corporations, though not as large as the PIC. Overall, some of the biggest South African agro-food corporations have institutions as their controlling shareholders. These include Tiger Brands, Pioneer Foods, AVI and Shoprite.

The last few years have witnessed the rise of agri-investment companies in South Africa. These companies are listed on the stock exchange. They make acquisitions in the agro-food system and elsewhere in the economy, domestically and globally, to construct an investment portfolio. Johann and Anton Rupert with Remgro and Jannie Mouton at PSG with controlling stakes in Zeder are part of the Stellenbosch-rooted Afrikaner business elite (Formby, 2007). The Rupert family have widespread interests, including Geneva-based luxury goods operation, Richemont. Apart from its food system investments (see below), Remgro's other major investments are in FirstRand/RMB, MediClinic and RMI. PSG has interests apart from Zeder, including Capitec Bank and investment funds. Christo Wiese, the Chair of Shoprite, has a large stake in Brait, which recently acquired and delisted Premier Foods. In 2014 he had significant holdings in resources group Pallinhurst, industrial services conglomerate Invicta and property hybrid Tradehold (Hasenfuss, 2014). These corporations have holdings in banks, as well as being investors in productive entities.

Figure 5: The agri-investment web, 2014



Source: Stephen Greenberg, 2016

Remgro had a market capitalisation of R127.9bn in June 2014, while Zeder had a market cap of R12bn at the start of 2014. Brait is an unlisted fund. *Figure 5* shows the web these interests, together with the PIC, have woven through the agro-food system. Remgro's major agro-food interests are in RCL Foods (incorporating Foodcorp, Rainbow and TSB Sugar), Distell, Unilever South Africa and Grindrod (with stakes in Senwes and NWK). Zeder's main interest is in Pioneer Foods via Agri-Voedsel, then Capespan, Kaap-Agri and Zaad seed company. PSG and Zeder were recently criticised for the extraction of large investment management fees on an essentially passive investment in Pioneer Foods (Hasenfuss, 2015). The PIC holds the web together, linking Zeder and Remgro to Christo Wiese's agro-food interests in Premier Foods via Brait, and a significant shareholding in Shoprite.

A related issue tied to financialisation and institutionalisation is the globalised character of ownership, leading to a dissipation of domestic control. Examples are the acquisitions by Monsanto of Sensako and Carnia, two of South Africa's largest seed companies at the time, and the more recent acquisition of Pannar by Du Pont Pioneer Hi-Bred. In fertiliser, Kynoch is now owned by Export Trading Group, an MNC originating in Kenya. Afgri (formerly OTK), the largest agri-services and grain storage and handling corporation in South Africa, was delisted and is now owned by a Canadian-led private investment consortium called AgriGroupe. In sugar, Illovo is now a subsidiary of Associated British Foods, one of the largest sugar companies in the world. Massmart is majority owned by Walmart. And, most recently, SABMiller, currently the second or third largest corporation on the JSE (but, for some time, not majority owned by South African based shareholders) has recently accepted a buyout offer from AB Inbev. But even corporations that are still mainly owned by domestic shareholders have large minority foreign shareholdings. Tiger Brands, for example, was 49.1% foreign owned in 2014 (Tiger Brands, 2014:253).

The multinationalisation of South African agro-food capital

There is some recent work on South African corporate agri-business expansion into Africa. In a comprehensive report ACB (2014) provided an overview across the agro-food system, looking especially at retailing, agro-processing, farming and inputs, with a focus on seed. The report identifies some of the largest players and highlights a number of drivers of agri-business expansion, including tight domestic market conditions and competition, land and labour issues, rising raw material and input costs, and returns on investment. Hall (2012) focused on organised commercial farmer expansion, as well as the expansion of sugar corporations, Tongaat Hulett and Illovo, into the region. Other research on sugar has followed (e.g. Dubb, 2015; Martiniello, 2015; Sulle, 2015), showing further expansion and a shift in the location of value creation into the region.

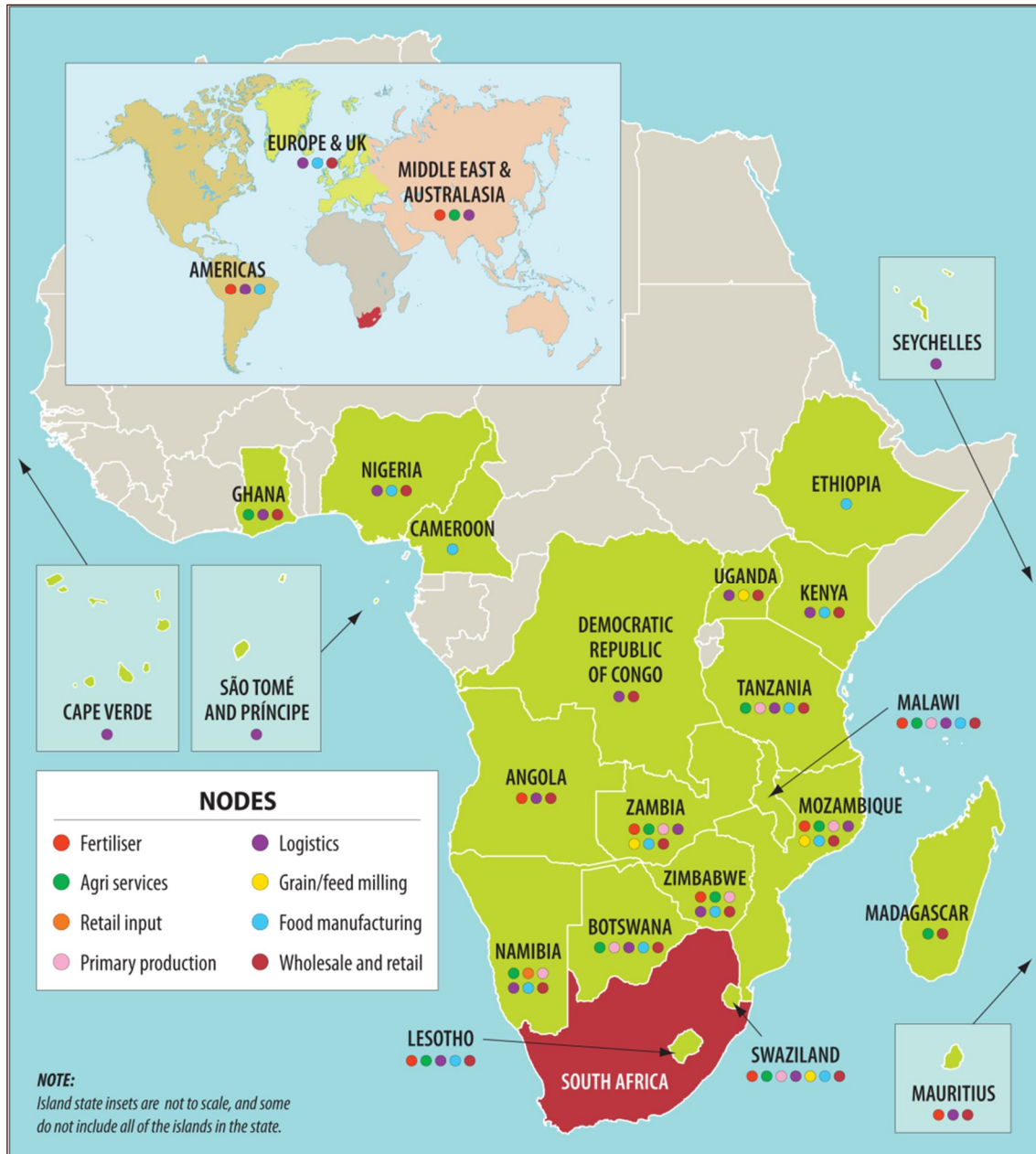
Louw et al. (2008) found that increased consolidation and concentration of regional fresh produce markets was taking place. South African supermarkets were leading the charge with centralised procurement strategies dominating. The authors also highlighted smallholder farmer exclusion from these regional chains, both through the demise of 'traditional' markets and the use of private standards that smallholders struggle to meet. Pardhun (2011) indicated further fragmentation of public fresh produce markets in Africa and their displacement by supermarkets, again with negative impacts on smallholder farmers who lose access to markets as a result. Pardhun focused on Shoprite in Zambia, following earlier work by Miller (2005).

Campbell (2015) does show supermarket expansion, but questions its all-encompassing nature, using arguments from Humphrey (2007) and others to indicate the ongoing resilience and importance of informal and open air fresh produce markets, even when supermarkets are present. This links to a whole field of research on informal food procurement and markets in Africa, with an expanding body of literature (e.g. Jayne, et al., 2010; Battersby, 2012; Wegerif, 2015).

There is other work on regional maize, livestock, soya and other commercial value chains, which functions more as a mapping of the terrain, with less direct emphasis on South African corporate expansion. USAID's Southern Africa Trade Hub²¹ has sponsored notable work in this regard. While the National Agricultural Marketing Council's useful commodity value chain studies²², which are published almost every year for some commodities, indicate size and trends in regional trade amongst other things, they do not provide much analysis.

²¹ <http://www.satradehub.org/>

²² <http://www.namc.co.za/pages/published-reports/research-reports/all-reports>

Figure 6: South African agro-food corporate expansion, 2014²³

Source: Stephen Greenberg, 2016

The multinationalisation of South African agro-food capital is premised on a globally integrated flow of capital, economies of scale and global competition. Africa is a natural outlet for numerous reasons, including fast-growing consumer markets driven by urbanisation and greater but more concentrated wealth, and similarities in the socio-cultural context for South African corporations. South Africa remains a core market but has reached a point of saturation if higher returns are sought, which they generally are. According to AVI (2014:46), for example, the fairly small domestic market reduces the attractiveness of major new investment in South Africa. Some companies like Bidvest or the sugar corporations have most of their operations outside South Africa. On the other hand, Shoprite, which has the biggest South African agro-food corporate footprint on the continent, still has over 80% of revenue from South African operations. Investing externally may also be a hedging strategy against exchange rate decline, and weakening governance and infrastructure in South Africa.

²³ Thanks to Dudu Coelho for assistance with the infographic.

Figure 6 indicates the nodal expansion of South African agro-food corporations into the region. This is based on information in annual reports for the largest corporations in each node. Logistics is the node operational in most countries, with 19 African countries hosting South African logistics operations. Wholesale and retail follows with 17 countries, then food manufacturing with 13 and agricultural services with 11. These are followed by primary production and fertiliser (with eight countries each), then grain/feed milling with four countries and retail inputs with one country.

Outside Africa, logistics has the widest footprint, followed by fertiliser and food manufacturing, and then agricultural services and wholesale and retail. Regarding the number of corporations operating in each country, Table 8 indicates Zambia has the most concentrated activity, with 21 corporations operating there in 2014, followed by Swaziland (19), Mozambique (15) and Botswana (14).

Table 8: South African corporate agro-food expansion in Africa and globally, 2014

Country	# of nodes	# of top corporations
Zambia	7	21
Swaziland	7	19
Mozambique	7	15
Botswana	5	14
Namibia, Zimbabwe, Lesotho, Malawi, Tanzania, Ghana		13–6
Uganda, Angola, Kenya, Madagascar, Mauritius, Nigeria, Cameroon, Cape Verde, DRC, Ethiopia, São Tomé and Príncipe, Seychelles		5–1
Outside Africa		
Europe and UK	3	5
Middle East and Australasia	3	4
Americas	3	4

Sources: Derived from annual reports

Shoprite and Bidvest have a footprint in the largest number of countries in the region (14 each), followed by Barloworld (12), then Imperial, Massmart and Woolworths (11 each). Shoprite's African operations constituted 19% of group sales in 2014 (Financial Mail, 2015:55). Bidvest got about 40% of its operating profits from outside South Africa in 2014 (Bidvest, 2014:20). Corporations surveyed with a footprint of 10–6 countries are Illovo, Unitrans, Spar, Omnia, Country Bird and Pick n Pay. Those with a footprint of 5–1 countries are Tiger Brands, Tongaat Hulett, Foskor, Premier Foods, RCL/TSB, AVI, Afgri, Astral, Zeder, Pioneer Foods and Quantum. Bidvest and Barloworld both operate in all three of the market zones outside Africa. So, in combination, the current advance guard in regional expansion are Bidvest, Barloworld and Imperial in logistics, and Shoprite, Massmart and Woolworths in wholesale and retail. These are not only food operations but do include food.

Food manufacturers and food service also distribute into additional countries, though they do not have physical production operations in these countries. Tiger Brands, for example, wholly owns Davita Trading, which exports Tiger Brands products to 33 countries in Africa, with Southern and West Africa the largest markets by value (Tiger Brands, 2014:43). According to the company, route to market in sub-Saharan Africa remains largely informal and reliance on local wholesalers and distributors to reach the final point of purchase remains critical to success (Tiger Brands, 2014:16). AVI (2014:22) has a network of third party distributors in countries where it does not have a direct presence. Pioneer Foods (2014:8) has a relatively small direct footprint, but exports to 80 countries, their largest markets in Africa being Algeria, Nigeria, Ghana, Mozambique, Zimbabwe, Botswana, Namibia, Mauritius and Democratic Republic of Congo, and the corporation also exports food products to North America, Europe and Asia.

Challenges to regional expansion highlighted in recent times include lack of availability of suitable real estate (Woolworths, 2014:27). Supply chain challenges led Woolworths to withdraw from Nigeria in 2014. Tiger Brands (2014:30) highlights limitations on consumer

spending in Africa and an influx of new low-cost entrants, placing pressure on margins (Tiger Brands, 2014:43). Responses include a focus on product format, pack size and price points (Tiger Brands, 2014:30) and efforts to build brand recognition (AVI, 2014:22).

6. CONCLUSIONS AND FURTHER RESEARCH

The South African agro-food system has the characteristics of a corporate-led food regime, accompanied by economic concentration and centralisation of power, especially since deregulation in the early 1990s. Although there is an ongoing role for the state, the combination of greater corporate self-regulation and the multinationalisation of agro-food capital ensure a shift in the relationship towards greater corporate power. Characteristics of the contemporary regime include economies of scale, mergers and acquisitions and concentration and centralisation of ownership and power.

However, power may be more widely distributed within the system than might be imagined. Each node in the system has a core with a periphery varying in size and degree of integration with the core. Specific commodities have their own dominant actors. This suggests more distributed power within the system, with a number of large core operations with concentrated power but spread out throughout the system.

The initial mapping of the agro-food system also suggests that a simple buyer-driven/producer-driven dichotomy is too abstract, even though the concepts are useful in assisting us to understand the distribution of power. Most importantly, product formulation and innovation – whether genetically modified seed or processed and packaged food products – suggest some aspects of producer-driven chains. This is reinforced if we incorporate consumers into the frame. Consumers are the ultimate buyers and users of the products, but the evidence indicates that consumer demand is shaped, sometimes quite significantly, by corporate producers and distributors in the system. Therefore producers at particular nodes in the chain and for particular commodities may exert greater power than buyers, or at least mediate the power of buyers.

A key feature of the South African agro-food regime is the ongoing significance of a large periphery of economic actors in some parts of the system, at least. This is particularly the case in primary agricultural production, food retailing/distribution to the end consumer and consumer food service. There may also be a fairly large periphery around transport, especially around primary agriculture, but more information is required. This periphery is significant, both in the numbers of people involved, which reach into the millions, as well as in the value created. Value in the periphery tends to be located mainly in food distribution. This highlights the key importance of understanding this sector in livelihood and job creation.

Corporate concentration appears to have been accompanied by a reduction in formal employment, especially in primary agriculture and in food manufacturing. While retail employment may have grown in the past two decades, this was accompanied by casualisation and flexible work, low pay, questionable and incomplete health and safety, long and irregular hours, etc. (see Kenny, 2001 for earlier work on retail, and Visser and Ferrer, 2015 for a recent update on similar processes in farm work). Taken together, the large periphery in some nodes and declining formal employment may suggest we need to investigate the livelihood creation potential of this sector, and the trade-offs between the protection and strengthening of the periphery or the expansion of the corporate one. More investigation could be done on these peripheries to understand them better and to identify what kind of support may be required that goes beyond trying to modernise these activities and convert them to formality as the default response.

The intensified role of finance capital in commodity circuits is expressed in institutionalisation of ownership and control and associated globalisation. Workers are implicated in ownership and investment through their pension funds, but without any collective power over these investments. Faceless corporations and processes are dominant. A related trend is towards the multinationalisation of South African agro-food capital, driven by economies of scale and higher returns on investment. These reflect a dissipation of ownership and control from national confines. The state continues to play a crucial and central role in regulating the system, but more as a creator of an 'enabling environment' for corporate activity than as a counter to such activity. This poses challenging questions for the nation state and possibilities for using the nation state to expand and improve livelihoods and nutrition alike.

At the same time as this concentration and centralisation, however, is the presence of a large periphery, both in value and in number of productive actors. In primary agricultural production, retailing and distribution, and food service (prepared food) in particular, there are high levels of economic participation, even if much of this is marginalised from nodes of power. There are hundreds of thousands or millions of economic actors in these nodes. Strategies need to be developed for how to strengthen these actors and their systems rather than seeing them as obsolete hangovers from the past destined for extinction.

Further research

There are many areas for further research. Deepening our understanding of each node is an ongoing task, especially given the dynamic and constantly evolving character of the system. It is difficult to develop appropriate policies or interventions without an understanding of the dynamics and function of particular commodity systems and sectors. More work still needs to be done to investigate and make visible the ways in which the nature and functioning of the agro-food system – and change within it – impact on the prospects for food and nutritional security and livelihoods for poor and vulnerable people. There is very little consolidated information about agricultural input supply in South Africa. Certainly corporations who are active in the sector will know what is going on but this information is not publically available. In primary agricultural production we continue to rely on outdated and questionable statistics about the size of the sector and the range of actors. While there is a lot of detail on specific commodities and production processes, this is fragmented and consolidated information is hard to come by. Logistics, agri-services, feedlots, grain handling and storage, horticulture sorting and packing, food manufacturing and consumer food service are largely unresearched areas. Probably the most work has been done on wholesale and retail but even here our knowledge tends to be case-study based.

Retailer-supplier relationships are crucial to competition in the wholesale and retail sector, with implications for small and independent retailers and livelihoods in the node. Further work can be done to deepen our understanding on the dynamics of these relationships, which can feed into the Competition Commission's current enquiry into the grocery retail market.

Further work could be done on the **grain-livestock complex**. Surprisingly little attention has focused on this, given its centrality in the agro-food system and to rural economies. A simple start could be to map out the GLC inter-linkages throughout the system, and to understand the livelihoods created and the power dynamics that shape the complex.

Other **commodity-specific studies** can also be conducted, each of which will have its own dynamics and core actors. The commodities selected could be derived from what different groups of people consume on a regular basis. This could include a specific focus on processed products as an increasingly consumed but problematic aspect of the food system in South Africa. Such studies can be conducted on demand with some lead time, or based on a yearly or programmatic selection. The approach adopted in this current report could offer a guide for the

construction of such commodity studies, including its relation to the broader agro-food system; a mapping of the nodes in the chain, looking at the corporate core and the periphery and their inter-relationships, value chain governance, dynamics shaping commodity-specific product formulation and innovation, trade dynamics and trends, issues of financialisation and ownership, commodity-specific regional and global expansion and at which nodes such expansion is taking place, and implications for livelihoods and nutrition.

More work can be done on the impact of **agro-food trade and trade policy** on livelihoods and nutrition in South Africa. Initial work by Thow et al., 2015 looks at trade and nutrition in Southern Africa and this can be built on with a more intensive focus on South Africa. There is limited work on the impacts of agro-food trade on livelihoods, or on the trade-offs between cheaper imported food and livelihood creation in the agro-food sector. Questions for further investigation may include how the South African agro-food system is affected by international trade and trade policy and what are the implications for food security and livelihoods; more detail on what South Africa is importing/ exporting and why, with an emphasis on processed products; and the implications of the structure and function of global value chains for food security and livelihoods.

Work on **livelihoods** could focus on nodes with large peripheries to understand the dynamics, support needs, inter-relationships between formal and informal, extent of corporate displacement and other impacts on local food geographies. More work needs to be done on consolidating information on the number of formal jobs and overall livelihoods created throughout the system.

Nutrition is a specialised area, but further work could focus on the impact of corporate concentration on nutrition, and more detailed investigation on product formulation and innovation, advertising, corporate influence on dietary and health advice and programmes, regulatory capture and the implications for the choice and quality of food consumers are offered.

Finally, there is plenty of work to be done on looking at the **ecological impacts** of corporate power in the agro-food system. In particular, information is available but not yet consolidated on climate change and greenhouse gas emissions in the agro-food system, and on production techniques, especially in primary agriculture.

ANNEXURE 1: PRELIMINARY QUANTIFICATION OF VALUE IN THE AGRO-FOOD SYSTEM WITH SOURCES AND NOTES

Node	2014 value of sales	Source and notes
Food wholesale and retail total	R519.4bn	Ogando 2014 – figures don't add up correctly in the USDA report but this is a close approximation (added category amounts and multiplied by US\$/ZAR 1:10.6)
Food and beverages manufacturing	R391.9bn	Stats SA 2015 Beverages R107.2bn (27%); 'meat, fish, fruit, etc.' (fresh produce) R105bn (27%); grain mill products R64.1bn (16.4%); dairy R34bn (8.7%); other food products R81.6bn (20.8%)
<i>Traditional grocery retailers and independent small grocers*</i>	<i>R291.5bn</i>	Ogando 2014 – as above
<i>Formal food and beverages retail</i>	<i>R227.9bn</i>	Ogando 2014 – as above Supermarkets R181.3bn; other categories are convenience stores, hypermarkets and discounters
Primary agricultural production	R208.3bn	DAFF 2015 Animal production R96.4bn; field crops R58.5bn; horticulture R53.3bn
Current inputs to primary agricultural production total	R138.2bn	Stats SA 2013a for 2013 figure of R130.1bn, and DAFF 2015 for increase in farm input prices to get a 2014 figure
Listed retail property funds	R117.7bn	Financial Mail 2015a Value of retailing properties
Finance to farms	R116.6bn	DAFF 2015
Food exports processed and unprocessed	R81.3bn	DAFF 2015
Consumer foodservice	R78.3bn	Euromonitor 2015d
Food imports processed and unprocessed	R61bn	DAFF, 2015
Animal purchases for primary production	R29bn	Stats SA 2013 inflated by 5% for 2014 figure
<i>Animal feed</i>	<i>R27.8bn</i>	Stats SA, 2013 for 2013 figure of R26.6bn, and DAFF 2015 for increase in feed prices to get a 2014 figure
<i>Food and beverages containers and packaging</i>	<i>R21.6bn</i>	Stats SA 2011 for 2011 figure of R16.6bn, and DAFF 2015 for increase in packing material prices to get a 2014 figure
<i>Transport out - manufactured food, beverages and tobacco</i>	<i>R15.1bn</i>	Stats SA 2014; 2014a; 2015a
<i>Fertiliser</i>	<i>R10.3bn</i>	Stats SA 2013 for 2013 figure of R10bn, and DAFF 2015 for increase in fertiliser prices to get 2014 figure
<i>Freight transport (primary including forestry)</i>	<i>R10.2bn</i>	Stats SA 2014; 2014a; 2015a
<i>Seed and plant material</i>	<i>R5.5bn</i>	Sansor 2014; 2014a; 2014b Agronomy R4.1bn (77% maize); horticulture R0.9bn; forage and pasture R0.5bn

**Italics indicate sub-sectors in broader categories (e.g. 'traditional grocery retailers' under wholesale and retail total).*

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