

An analysis of infrastructure and inputs as a barrier to entry and expansion for emerging farmers

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Abstract

This is the second paper of a series of research papers that examines the barriers to entry and expansion facing emerging farmers in the South African agricultural sector. The barriers to entry and expansion that this series examines include access to finance, inputs and infrastructure and routes to market. This paper focuses on the barriers to accessing inputs and infrastructure by emerging farmers in the agricultural sector. The paper provides an overview of the value chain in relation to inputs and infrastructure. The research further examines the barriers to entry and expansion for emerging farmers in accessing inputs and infrastructure in select markets required for the agricultural production process. The authors observe that the barriers for emerging farmers persist in accessing land and water rights, although the government is undertaking initiatives to address these challenges. Emerging farmers further face constraints in relation to logistics and agricultural machinery. The authors make use of case studies to demonstrate these barriers in the following markets: wool, poultry, fertilizer, red meat, seeds and grain. Recommendations are made to facilitate the entry and participation of emerging farmers in the agricultural sector.

Keywords: barriers to entry, emerging farmers, infrastructure, inputs.

JEL classification codes: Q14; Q16; Q24; Q25; Q28

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1. Introduction

This is the second paper of a series of research papers, produced by the Competition Commission (Commission) on the barriers to entry and expansion facing emerging farmers. The major barriers to entry and expansion that we have examined in the agricultural sector include access to finance, inputs and infrastructure and routes to market. This paper focuses on the barriers to accessing inputs and infrastructure by emerging farmers in the agricultural sector.

A review of the literature shows that agricultural infrastructure can be grouped under four broad categories, namely; (a) input based infrastructure such as seeds, fertilizer, pesticides, farm equipment and machinery; (b) resource-based infrastructure such as water/irrigation, farm power/energy; (c) physical infrastructure such as road connectivity, transport, storage, processing, and preservation; (d) institutional infrastructure such as agricultural research, extension and education technology, information and communication services, financial services and marketing.¹

Below is an outline of how the paper will be structured and themes to be covered under each section.

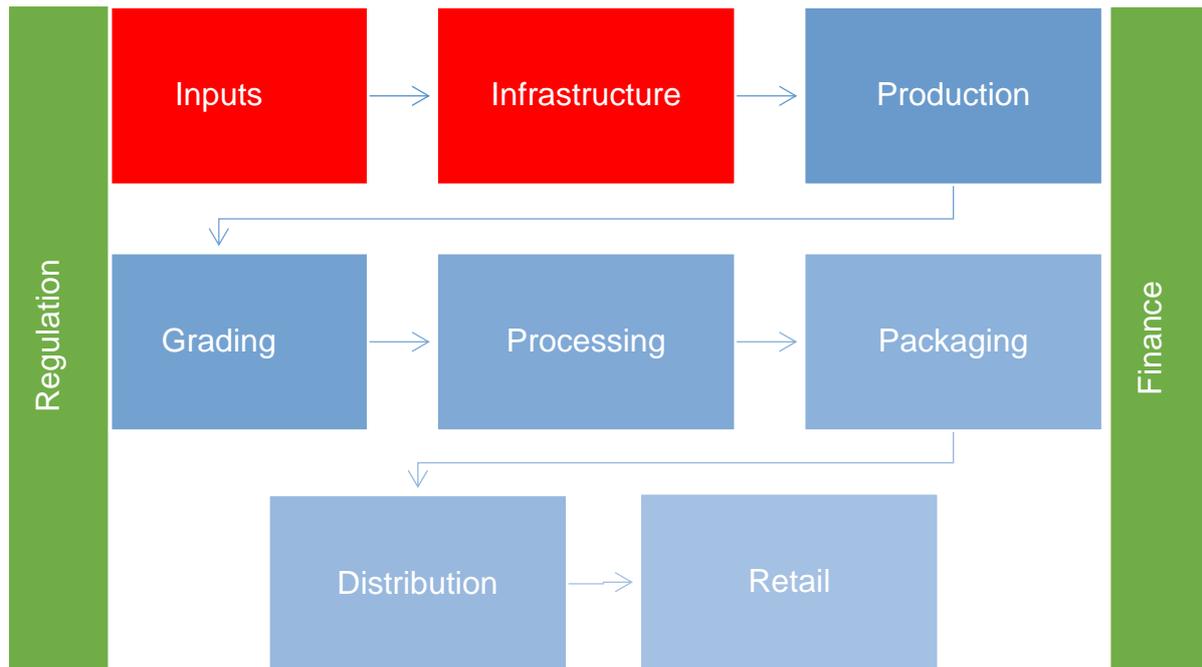
Section 2 defines agricultural inputs and infrastructure within a market-orientated agricultural value chain. **Section 3** sets out the research problem. **Section 4** sets out the research methodology used. **Section 5** provides a schematic overview of the South African agro-food system. **Section 6** outlines the barriers to accessing inputs and infrastructure facing emerging farmers in the agricultural sector, drawing from the challenges identified in commodity-specific product markets where the Commission has had interventions. This section will examine the barriers that have been identified by stakeholders; access to land (title deeds) and water rights, wool, fertilizer, seeds, poultry, red meat, agricultural machinery, storage facilities and issues related to logistics. **Section 7** provides the authors observations on the barriers to entry and expansion identified. **Section 8** provides a conclusion on the findings of the research project.

¹ Accessed from: <https://www.microfinancegateway.org/sites/default/files/mfg-en-paper-infrastructure-for-agriculture-rural-development-in-india-need-for-a-comprehensive-program-adequate-investment-sep-2010.pdf> last accessed on 04 April 2019.

2. Understanding the value chain in relation to inputs and infrastructure

In the first paper of the research project entitled “An analysis of finance as a barrier to entry and expansion for emerging farmers,”² the authors illustrated the common factors in a typical market-orientated agricultural value chain, as depicted in **Figure 1** below.

Figure 1: Market-orientated agricultural sector value chain



Source: Authors own interpretation and compilation

As shown in **Figure 1**, access to finance is an essential factor of the value chain which enables participants to purchase essential inputs and infrastructure (e.g. acquire land, apply for water rights, purchase fertilizer, seeds, agricultural machinery and storage facilities) necessary for the production process, grading, processing, packaging and distribution of their produce. Finance is also required where there are certain regulatory requirements (such as licencing and certification) which a participant must adhere to and these may differ from market to market. Inputs and infrastructure are essential elements of the agricultural value chain which enable participants to effectively produce. Following

² See: <http://www.compcom.co.za/wp-content/uploads/2016/11/CC201901-Mtombeni-S-Bove-D-Thibane-T-An-analysis-of-finance-as-a-barrier-to-entry-for-emerging-farmers.pdf>.

the sequence of this value chain, the paper examines key constraints in accessing a selection of agricultural inputs and infrastructure by emerging farmers.

Agricultural inputs in the context of this research project are products and resources required for use in farming. These include animal feed, compost and fertilizers, seeds, plant protection products such as chemicals, cleaning agents and additives used in food production. Agricultural infrastructure includes on-farm infrastructure, such as land and water resources, agricultural machinery, fencing, boreholes and windmills, building supplies and structures and off-farm infrastructures, such as packing and handling systems, storage facilities and logistics (transport).³

3. The research problem

Stakeholders have raised the following concerns regarding the ability of emerging farmers to access key inputs and infrastructure. The following concerns raised are said to increase barriers to entry. This research seeks to examine these and understand their effect on barriers to entry and expansion:

- i. Lack of policy coordination between key government departments.
- ii. Price increases of key inputs.
- iii. High levels of market concentration in input markets.
- iv. Concerns of cartel conduct in input markets.
- v. Poor infrastructure (roads).
- vi. High operating costs (such as investment in processing and storage facilities).
- vii. Skills development training is required to assist emerging farmers to meet the demands of new technology and the digital age.
- viii. Vertical integration of incumbent firms with the input market.

4. Research methodology

The information contained in this paper was sourced through a review of literature, desktop research and by means of questionnaires and interviews with relevant stakeholders such as the Department of Rural Development and Land Reform (DRDLR),

³ Accessed from: <https://agribook.co.za/farm-infrastructure/> on 17 March 2019.

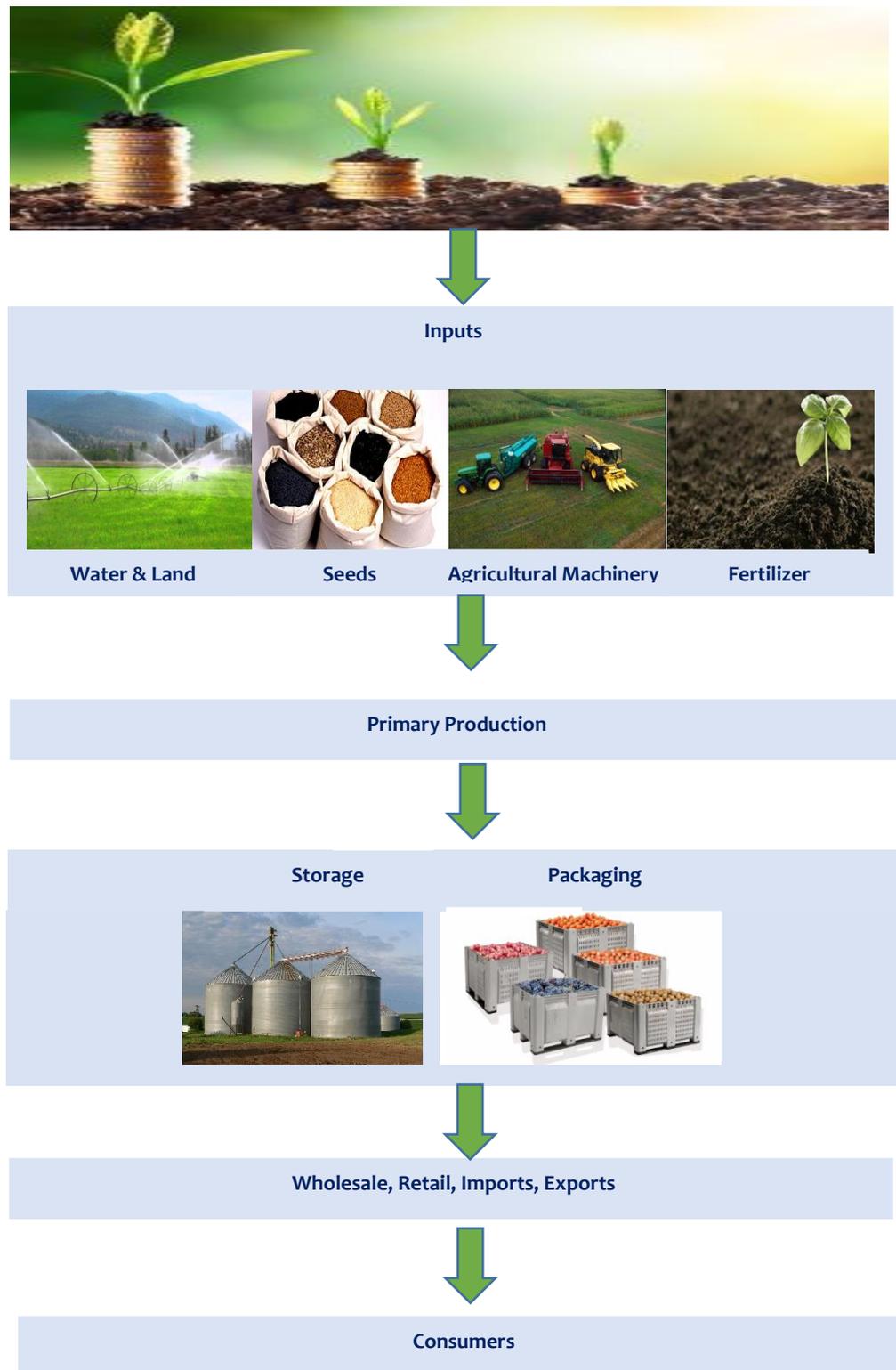
the Department of Agriculture, Forestry and Fisheries (DAFF) ⁴, National Treasury, the Department of Water and Sanitation (DWS), , the Bureau for Food and Agricultural Policy (BFAP), the National Agricultural Marketing Council (NAMC), AgriSA, the Institute for Poverty, Land and Agrarian Studies (PLAAS), the Institute for Market Agents of South Africa (IMASA), the South African Local Government Association (SALGA), the Agricultural Research Council (ARC), the South African Agricultural Machinery Association (SAAMA), the Department of Planning, Monitoring and Evaluation (DPME), Grain SA, the Grain Farmers Development Association (GFADA), the Emerging Black Importers and Exporters South Africa (EBieSA), the Red Meat Producers Association (RPO), Cape Wools SA, South African Meat Industry Company (SAMIC), the South African Poultry Association (SAPA), the Cape Wools SA and the Fertilizer Association of Southern Africa (Fertasa).

5. The South African Agro-Food System

Figure 2 shows a schematic overview of the South African agro-food system. It illustrates key upstream inputs and infrastructure (land and water resources, seeds, fertilizers, and agricultural machinery) and downstream (grain storage and handling, marketing and distribution). Logistics is a key enabler throughout the agro-food system.

⁴ At the time of publication of this paper the DRDLR, DAFF and the Department of Environmental Affairs were restructured into two departments; the Department of Agriculture, Land Reform and Rural Development and the Department of Environment, Forestry and Fisheries.

Figure 2: The South African Agro-food system



Source: Authors own interpretation

Each level of the agro-food system in South Africa is marked by a high degree of concentration, the consolidation of market power and vertical integration.⁵ A strategy through which some commercial farmers have secured their survival and growth is a move into profitable agribusiness enterprises located in both upstream markets (in seeds, fertilizers, chemicals and machinery) and downstream (grain storage and handling, agro-processing, marketing and distribution and feedlots for livestock).⁶

The upstream input supply networks for key commodities are highly concentrated. Key inputs such as seeds, fertilizers and machinery are all supplied by entrenched market players some that are vertically integrated (e.g. Pioneer, Monsanto, Omnia and Afgri).⁷ This suggests that within current networks there are large players that occupy specific markets, creating a limited opportunity for new entrants. The patterns of concentration are not limited to upstream inputs. Similar patterns of concentration are evident downstream, within the processing and retail-sectors of agriculture. Downstream output market networks in formal and informal sectors comprising retailers and buyers will be considered in Paper 3 which will consider routes to market.

The barriers to access inputs and agriculture described in this paper also need to be considered in the context of the natural resources available in the country. Current farming methods have high environmental demand. Farmers must first secure land and water resources and then external inputs. External inputs such as chemicals and fertilizers affect the quality of the soil. This sector is also vulnerable to the effects of climate change (droughts), which impacts on food production.⁸

⁵ PLAAS Research Report by David Neves and Cyriaque Hakizimana 'Space, Markets and Employment in Agricultural Development: South Africa country report' (June 2015) at page 5.

⁶ Ben Cousins and Cheryl Walker (2015) *Land Divided, Land Restored. Land Reform in South Africa for the 21st Century*, Chapter 16, at page 1. According to PLAAS, an early manifestation of this was the privatization of former white farmer-owned co-operatives in the early 1990s.

⁷ Stephen Greenberg (2017) 'Corporate power in the agro-food system and the consumer food environment in South Africa' at page 472.

⁸ The droughts in early 2015 in South Africa had adverse repercussions for agriculture. The droughts increased demand for access to other sources of water even amidst South Africa being a water scare country. Smallholder farmers were most affected as compared to commercial farmers because they do not have the financial resources to invest in disaster risk management technologies.

6. Examining challenges in accessing inputs and farm infrastructure facing new entrants

This paper draws from the challenges identified in product markets where the Commission has had interventions (such as chicken, red meat, fertilizer, grain and seeds) as well as the barriers to access agricultural inputs and infrastructure that have been identified by stakeholders. It systemizes a selection of the barriers into nine (9) case studies; access to water and land rights, wool, fertilizer, seeds, agricultural machinery, barriers in accessing specific inputs and infrastructure required by poultry producers, red meat, logistics, and grain storage. Similar issues may be apparent in other product markets and the principles may be equally applied to other commodity markets that are not considered in this paper.

Case Study 1: Access to Land and Water rights

Access to land and water for agriculture remain a major challenge for emerging farmers in South Africa. Emerging farmers do not have title deeds which makes it difficult for them to access land and water rights. Stakeholders have highlighted a problem with policy coordination wherein DAFF, now the Department of Agriculture Land Reform and Rural Development (DALRRD) allocates (leases) land to emerging farmers, but without coordinating with the Department of Water and Sanitation (DWS) to ensure that farmers have the necessary water rights. This is despite the post-Apartheid land redistribution programmes and the enactment of the 1998 Water Act as well as the subsequent water allocation reforms. The latter was aimed at correcting equity challenges of the past which excluded Historically Disadvantaged Individuals (HDIs) in accessing resources such as land and water and also hindered their ability to participate along market value chains. Therefore, the need to find lasting solutions for emerging farmers in accessing land and water rights remains one of the important issues in agriculture today.⁹

Water rights

The mandate of the national DWS today is to develop resources such as constructing dams, as well as to protect, control and manage water resources in order to provide access to

⁹ Ncube, B. "Smallholder farmer access and participation in water resource management: The case of the Breede-Gouritz Catchment Management Area". Accessed from: <http://www.plaas.org.za/event/smallholder-farmer-access-and-participation-water-resource-management-case-breede-gouritz> last accessed on 25 January 2019.

water use.¹⁰ The DWS is also responsible for ensuring that all South Africans gain access to clean water and dignified sanitation.¹¹

The National Water Act No 36 of 1998 (NWA) fundamentally reformed the law relating to water resources, recognising that water is a scarce commodity and an unevenly distributed national asset that belongs to all the citizens of South Africa.¹² The Act also provides the legal basis upon which the national DWS can develop tools and means to achieve its mandate. For instance, one of the means is the authorisation of water use as defined in Chapter 4 of the NWA.¹³

The process of granting water rights

The process of granting water use licenses (rights) is guided by regulations which administer water use authorisation. There are four types of water use authorisations provided by the DWS, namely;¹⁴

- **Schedule 1 use** - small volumes of water for household use only. No application for a licence is required.
- **General Authorisations** - larger volumes of water may be generally authorised for a specific type of water use or category of water user. These users are required by DWS to register their water use, however, they do not need a licence.
- **Existing Lawful Use (ELUs)** - this allows water use that was lawfully used before the NWA came into promulgation in 1998, to continue until it can be converted into a licence using compulsory licensing.
- **Licensed Water Use** – licences are issued under the NWA and require the approval of an application by the DWS.

¹⁰ Department of Water and Sanitation. Accessed from: <http://ewulaas.dwa.gov.za/ewulaas/> last accessed on 21 January 2019.

¹¹ Department of Water and Sanitation. Accessed from: <http://www.dwa.gov.za/about.aspx> last accessed on 18 February 2019.

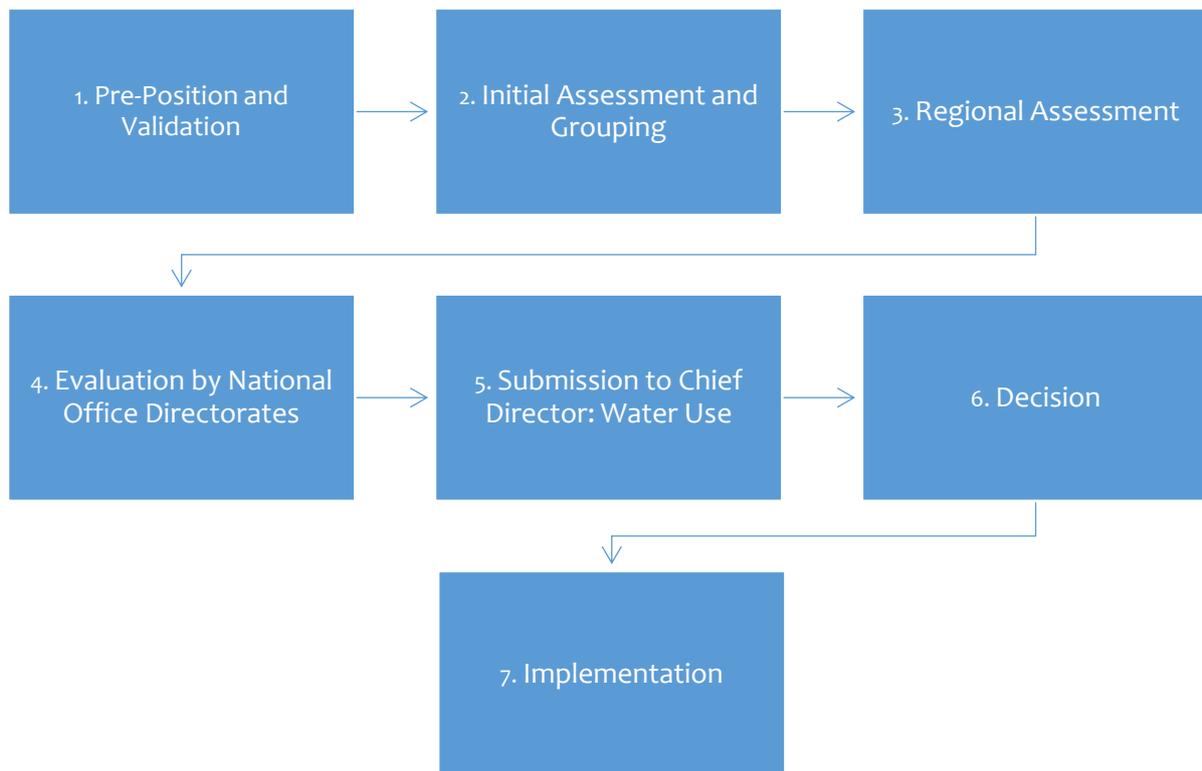
¹² Department of Water and Sanitation. Accessed from: <http://ewulaas.dwa.gov.za/ewulaas/> last accessed on 21 January 2019.

¹³ National Water Act (No 36 of 1998).

¹⁴ Department of Water & Sanitation. Accessed from: <http://www.dwa.gov.za/WAR/authorised.aspx> last accessed on 24 January 2019.

The national DWS has regional offices in the nine provinces which are responsible for dealing with water management areas, even where there are overlaps in the catchment areas. **Figure 3** below illustrates the steps followed by the national DWS in the processing of water use licenses.

Figure 3: The processing of water use licenses



Source: Authors interpretation based on DWS.¹⁵

According to **Figure 3**, there are generally 7 steps to processing a water use license as stated below:

- **Step 1 - Pre-position and validation.** This is done when a license application is received and is utilised to confirm that all necessary application fees are paid and required documents are submitted. The requirements during the application process vary such as the applicants' identity documents, company registration

¹⁵ Department of Water and Sanitation. Accessed from: <http://www.dwa.gov.za/WAR/licenceprocess.aspx> on 23 January 2019.

documents etc. In the case of agricultural businesses, business plans/reports which detail the farming activity to be undertaken by the applicant are required.

- **Step 2 - Initial assessment and grouping.** This includes a preliminary assessment of the possible impacts and benefits of the proposed water use. In some cases, a simple set of questions are used in the assessment process, while in some instances environmental impact assessments reports (e.g. waste management reports for poultry farming) will be required.
- **Step 3 - Regional Assessment.** This step is done in the regional DWS office where the application was lodged. The regional office gathers all the information required to decide on whether to approve the application and makes a recommendation to the national DWS office.
- **Step 4 - Evaluation by the National DWS Office.** The application is then evaluated by specialist groups. These groups also make recommendations on the application. The application is then submitted to the Chief Director of Water Use for a decision.
- **Step 5- Submission to Chief Director: Water Use.** The Chief Director considers the recommendation of the application.
- **Step 6- Decision by the Chief Director: Water Use.** After considering all the relevant information, the Chief Director of Water Use will decide on whether to approve or reject the application.
- **Step 7- Implementation.** Once a decision has been made, the regional DWS office will be informed and it can start with implementing the license. It will then inform the applicant of the outcome of the application, and if approved it will issue the licence as well as highlight any conditions that might be attached to the water use license.

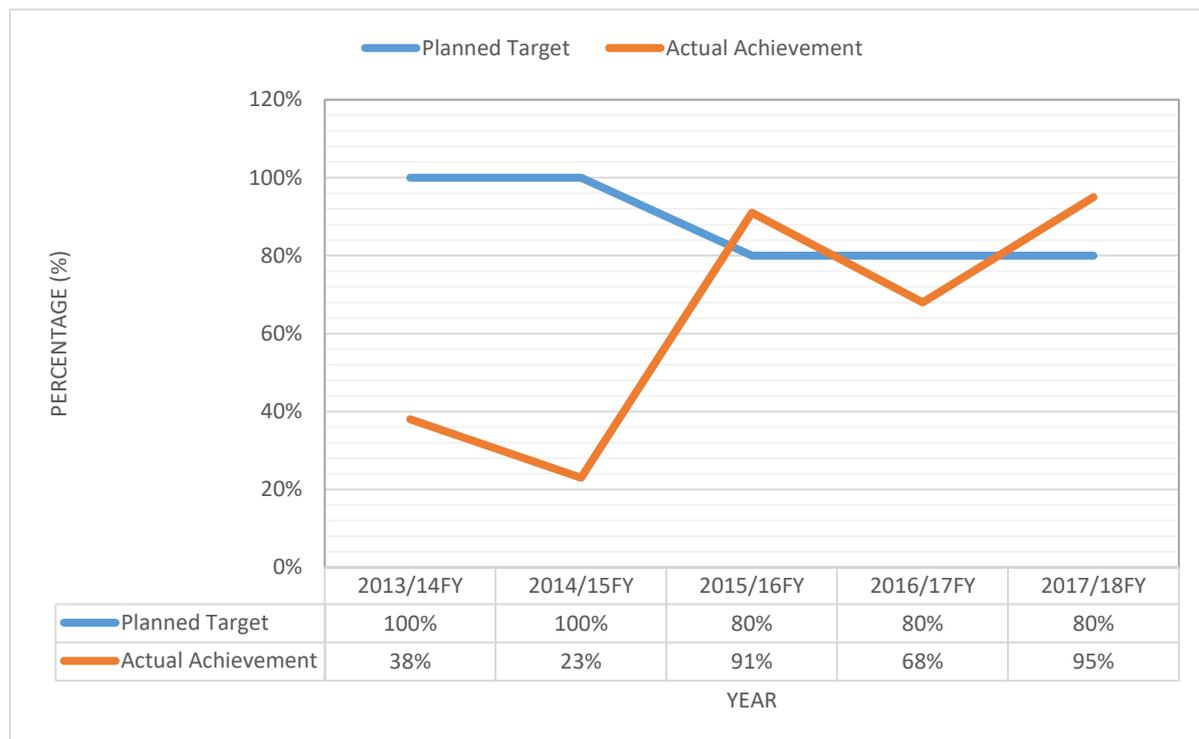
The authors also note that the national DWS has developed an online system for the submission of license applications. The online system is known as the Water Use Licence Application and Authorisation System (e-WULAAS), which is a tool to facilitate the

authorisation and manage the authorisation of water use electronically.¹⁶ However, the use of the online system is stated not to be fully functional, as water license applicants mostly prefer submitting their applications manually.

Assessment of the water use license authorisation system

Given the fact that access to water rights is one of the critical inputs for emerging farmers, it was necessary to analyse the trend in the finalisation of water use licenses by the DWS within the policy stipulated timeframes. In this regard, **Figure 4** provides a five-year trend analysis in the number of water use license applications finalised by the DWS within 300 days as per the water use license authorisation guidelines from 2013 to 2018.

Figure 4: Water Use License Authorisation applications finalised within 300 days (2013-2018)



Source: DWS.¹⁷

¹⁶ National Water Act (No 36 of 1998).

¹⁷ Department of Water and Sanitation. Annual Report 2013-14. Accessed from: <http://www.dwa.gov.za/documents/AnnualReports/DWA%20ANNUAL%20REPORT%202013-14.pdf> on 21 January 2019.

According to **Figure 4**, it is apparent that between 2013-14 and 2014-15 financial year there was a deviation from the planned target in the finalisation of water use license applications against the actual achievement. However, one of the reasons for this deviation has been stated to be outstanding information from applicants which has resulted in the backlog of applications during this period.¹⁸ In some cases, the backlog is attributed to the issue that the DWS spends enormous amounts of time in assisting applicants to supply the correct documentation such as impact assessments reports (e.g. assessments in terms of the volumes of water they will be using and how the extraction of water will be conducted).

During the 2015-16 financial year, **Figure 4** further illustrates that the number of actual license applications finalised exceeded the planned target. It is also noted that during this financial year, out of a total of 116 licenses issued to strategic sectors, 79 licenses (which is approximately 68%) were allocated to the agricultural sector for productive use.¹⁹ This shows that the DWS has recognised the importance of the agricultural sector in the South African economy when carrying out its mandate of issuing water licenses. In the 2017-18 financial year, the DWS also exceeded its target by 15% which moreover indicates the improvement in the processing and finalisation of water use license applications.

The research also finds that the DWS is determined in making efforts in enhancing socio-economic development and transformation in the agricultural sector. The DWS has implemented measures to improve water use efficiency by setting out annual targets in the allocation of water use to HDIs and smallholder farmers. For example, the department implemented rural development initiatives providing access to 14.13 million cubic meters (m³) of water to smallholder farmers.²⁰

The DWS is, moreover, embarking on an intervention to increase the dam levels. The additional water access will be available primarily to new entrants which are historically disadvantaged applicants.

The research, however, finds that from a competition perspective, the holders of the existing lawful use (ELU) licenses which were awarded prior to the endorsement of the

¹⁸ Ibid.

¹⁹ Department of Water and Sanitation. Annual Report 2015-16. Accessed from: <http://www.dwa.gov.za/documents/AnnualReports/ANNUAL%20REPORT%202015-16.pdf> on 22 January 2019.

²⁰ Department of Water and Sanitation. Annual Report 2017-18, pg. 43. Accessed from: http://www.dwa.gov.za/documents/AnnualReports/Annual%20Report%202017-18_Final.pdf on 22 January 2019.

1998 NWA, could possibly foreclose new entrants such as emerging farmers in accessing water rights should there be no effective oversight or monitoring mechanism in place for water use under these licences. For example, new water use license applications in a particular area could simply be rejected by the DWS on the basis that there are limited water reserves or excess licenses have already been issued in that particular catchment area. This is because the (ELU) licences currently do not have an expiration period and it is estimated that approximately 60% of the water resource remains in the hands of water users who obtained rights prior to 1998.

In this regard, it is noted that the department has recently embarked on a verification process to validate and verify ELUs. The DWS is, moreover, in the process of amending the 1998 NWA to address the weaknesses that have been identified in the Act. The DWS is, therefore, working on a Bill which will incorporate a “use it or lose it” principle that was not expressed in the 1998 NWA. It further aims to phase out the ELU licences to ensure standardisation in its water use licensing process. These initiatives by the department can be regarded as positive strides in reducing barriers for HDIs and emerging farmers as they have a transformation objective.

Land rights

The review of literature estimates that during the early 1970s ‘white’ agricultural land covered an area of 91,790,414 hectares. However, homeland consolidation during the 1970s and 1980s caused a decline of this figure to 89 million hectares.²¹ After 1994, South Africa inherited racially skew land ownership, with whites owning about 87% of the agricultural land, while black people owned the remaining 13%. In this regard, DRDLR post-1994 was given a task to address the disparity in land ownership. This was a joint task with DAFF. The aim of the new South African government was to transfer approximately 30% of the total hectares of farmland to black communities by 2014.²²

The research also notes that agricultural land has decreased from approximately 79.3% in 1994 to 76.3% in 2016. Accordingly, this forms part of the broader perspective with which

²¹ Pringle, E. “Land Reform And White Ownership Of Agricultural Land In South Africa”. Accessed from: <https://hsf.org.za/publications/focus/focus-70-on-focus/focus-70-oct-e-pringle.pdf> last accessed on 15 March 2019.

²² National Treasury. 2015. “Agriculture and Land”. Accessed from: <http://www.treasury.gov.za/publications/igfr/2015/prov/09.%20Chapter%209%20%20Agriculture%20and%20Land.pdf> on 19 March 2019.

the ownership of agricultural land should be evaluated. Furthermore, the value and potential of agricultural land, form crucial components of a more holistic view of farm ownership.²³ There is also land in South Africa which is underutilised, which could be used for agricultural production.²⁴

The overarching mandate of DRDLR today is to create and maintain an equitable and sustainable land dispensation and act as a catalyst for rural development that ensures rural livelihoods, decent work and continued social and economic advancement for all South Africans.²⁵ DRDLR is also responsible for dealing with land tenure and restitution.

DRDLR executes its legislative mandate empowered by the following acts as stated in **Table 1** below.

Table 1: the legislation governing access to land²⁶

Legislation or Act	Purpose
The Restitution of Land Rights Act (1994)	The Act provides for the restitution of rights in land to persons or communities dispossessed of such rights after 19 June 1913.
The Provision of Land and Assistance Act (1993)	The Act provides for the designation of certain land, the regulation of the subdivision of such land and the settlement of persons thereon. It also provides for the acquisition, maintenance, planning, development, improvement and disposal of property, and the provision of financial assistance for land reform purposes.
The Communal Property Associations Act (1996)	The Act enables communities to form juristic persons, to be known as communal property associations, in order to acquire, hold and manage the property on the basis agreed to by members of a community in terms of a written constitution.

²³ AgriSA. “Land Audit: A Transactions Approach dated November 2018” Accessed from:

<https://www.agrisa.co.za/download/5VA3ugi34kj7iXK7TtAMFmT2mo9fxD1XAxo1KQ6Z.pdf> on 20 March 2019.

²⁴ South African Institute of Race Relations. 2016. “From land to farming: bringing land reform down to earth”. Accessed from: <https://irr.org.za/reports/atLiberty/files/liberty-2013-from-land-to-farming-bringing-land-reform-down-to-earth> on 20 March 2019.

²⁵ Department of Rural Development and Land Reform. Annual Report 2010-2011. Accessed from: http://www.ruraldevelopment.gov.za/phocadownload/Annual-report/rdlr_annual_report2011.pdf on 21 January 2019.

²⁶ National Treasury. Estimates of National Expenditure 2015. Accessed from: <http://www.treasury.gov.za/documents/national%20budget/2015/enebooklets/Vote%2039%20Rural%20Development%20and%20Land%20Reform.pdf> last accessed on 18 February 2018.

The Transformation of Certain Rural Areas Act (1998)	The Act provides for the transfer of certain land to municipalities and certain other legal entities, as well as for the removal of restrictions on the alienation of land
The Physical Planning Act (1991)	The Act promotes the orderly physical development of South Africa, and for that purpose, makes provisions for the division of the country into regions, and for the preparation of national development plans, regional development plans, regional structure plans and urban structure plans.
The Deeds Registries Act (1997)	The Act provides for the administration of the land registration system and the registration of land rights.
The Land Survey Act (1997)	The Act provides for the regulation of the survey of land in South Africa.
The Sectional Titles Act (1986)	The Act provides for the division of buildings into sections and common property; the acquisition of separate ownership in sections coupled with joint ownership in common property; the control of certain incidents attached to separate ownership in sections and joint ownership in common property; the transfer of ownership of sections and the registration of sectional mortgage bonds over, and real rights in, sections; the conferring and registration of rights in common property; the establishment of bodies corporate to control common property and for that purpose to apply rules; and the establishment of a sectional titles regulation board.
The Spatial Planning and Land Use Management Act (2013)	The Act provides for national land use management and spatial planning systems; the development of government facilities and rural development plans, guidelines, and norms and standards.

Source: National Treasury, 2015.

Procedure to access land rights

DRDLR identifies and purchases strategically located land for smallholder farmers. The department identifies beneficiaries of the acquired land depending on the farming activity suitable for the land. The land reform initiatives are targeted at HDIs.

The authors note from stakeholders that municipalities are involved in the process of granting land rights, however, this may depend on the ownership of the land. It is stated that municipalities are required to get involved in the process of granting land rights mainly because they need to know which piece of land is transferred to which individual or entity. **Table 1** above shows the Spatial Planning and Land Use Management Act which makes provision for alignment of land authorisations, and municipalities are central to this process as they need to update their asset register.

Challenges in accessing land rights

Certain stakeholders have argued that the land reform after 1994 has been a failure as the government did not transfer title deeds to farmers. It is argued that many farmers farm on government-owned land or land that they have leased. It is projected that if there was a transfer of title deeds to emerging farmers, at least 30% of land ownership in the agricultural sector would have been transformed to date.

Some stakeholders submit that in the past water rights were tied to an asset, which reduced transaction and administration costs for farmers. For example, land and water rights were combined during the sale of the land which increased the value of the land. However, currently, access to land and water are two different processes, in that farmers must apply for land and water separately. This is argued to create inefficiencies in the system given the lack of collaboration between the authorities responsible for water and land rights.

It is, moreover, noted that most emerging farmers are unable to access funding because they do not have property rights (e.g. ownership of land). Therefore, stakeholders propose that should emerging farmers own the land they can be able to use it as collateral, which will allow them to borrow from development finance institutions (DFIs) and commercial banks.

The authors recognise that some farmers are not situated in a productive land or area, therefore, DRDLR submits that it provides support to these smallholders farmers to access water rights, infrastructure, inputs which varies depending on the type of farming enterprise as well as providing assistance to post-farm activities such as packaging and

access to markets through its Agri Park's programme. It is also argued that prices of acquiring land are excessive, more especially when the government is a purchaser.

It is noted that there is a land reform process currently underway. This process commenced in September 2018 under the auspices of the Advisory Panel on Land Reform and Agriculture.²⁷ It is understood that the Panel will advise the President of South Africa on a broad range of policy matters associated with land reform, including restitution, redistribution, tenure security and agricultural support.²⁸ The authors are of the view that the outcome of this process will have an impact in transforming the agricultural sector in the future as to how the existing mechanisms for agricultural land reform could be better utilised.

The relationship between water and land rights

This research has also observed an interrelated relationship between access to land and water rights. For instance, access to land is a prerequisite for accessing water use rights. Access to land can be divided into three categories, in that individuals or farmers applying for water rights are required to have either title deeds as evidence that they possess ownership of the land or have a lease agreement with the owner of the land or permission to occupy document in the case of traditional-owned land or have a community resolution which is provided by the community in collaboration with DRDLR.

The research finds that access to land is a barrier for emerging farmers as they do not possess title deeds or financial capabilities to lease land in order to secure water rights. Therefore, this impedes their ability to be competitive as access to water is one of the essential inputs to sustainable agricultural activity. This is because farming and food production are water-intensive industries.²⁹

²⁷ Accessed from: <https://www.gov.za/speeches/presidency-advisory-panel-land-reform-colloquium-10-dec-2018-0000> [last accessed on 31 May 2019].

²⁸ Accessed from: <http://www.thepresidency.gov.za/press-statements/president-ramaphosa-appoints-advisory-panel-land-reform> [last accessed on 31 May 2019].

²⁹ European Commission. "The role of water in sustainable agriculture". Accessed from: https://ec.europa.eu/commission/commissioners/2014-2019/hogan/blog/role-water-sustainable-agriculture_en last accessed on 25 January 2019.

Provided that water and land are interlinked, there is a need for the development of an effective structure for coordination and collaboration between authorities responsible for granting access to water and land.

Collaboration and coordination between key stakeholders

The research further finds that while there are memoranda of understanding (MOUs) in place between various government departments, they are usually outdated and ineffectively executed. There is also a lack of communication between certain government departments. For example, there is lack of prior consultation from DRDLR when purchasing farms as part of its land reform initiatives with the DWS to ascertain that in those areas there is sufficient water for a certain agricultural activity.

The research also notes that currently there is no fully-fledged framework between government departments to review policies of other government institutions to ensure policy alignment, more especially where there is an overlap in policy or functions.

This lack of collaboration between key stakeholders leads to the non-alignment of programmes, which has a negative impact on the growth of the agricultural sector. It also results in the poor implementation of programmes due to the absence of integration and monitoring, which often leads to the limited government resources not being utilised strategically and effectively to yield favourable results and contribute to the development of the agricultural sector.

Therefore, it is necessary that collaboration between key government departments in the sector is proactive during the early stages when the departments such as DRDLR purchase land or provide financing to emerging farmers.

Case Study 2: Wool

Liberalisation in the South African wool industry took place in the early 1990s, with the abolishing of the single marketing system. This meant that wool producers were able to market their wool in a way that suits them best, compared to the old system. Pre-1990s there were statutory agricultural boards which were privatised after 1997. In the late 1990s, the Wool Board was dismantled. Its regulatory role was taken over by the Wool Forum. All the assets in the form of statutory levies of the Wool Board were transferred to the Wool Trust. It is noted that the Wool Trust uses the assets to provide funding for the South African wool industry.³⁰

The wool industry in South Africa currently consists of three main organisations, namely; the Wool Forum, Cape Wools SA and National Wool Growers Association (NWGA). The Wool Forum is the policy-making body of the industry, while Cape Wools SA is a non-profit industry organisation that represents the entire industry including wool buyers, traders and processors etc. Cape Wools SA contracts with NWGA which is an association representing wool farmers (including both commercial and communal farmers) to perform specific functions aimed at the grower level.

Market structure of wool

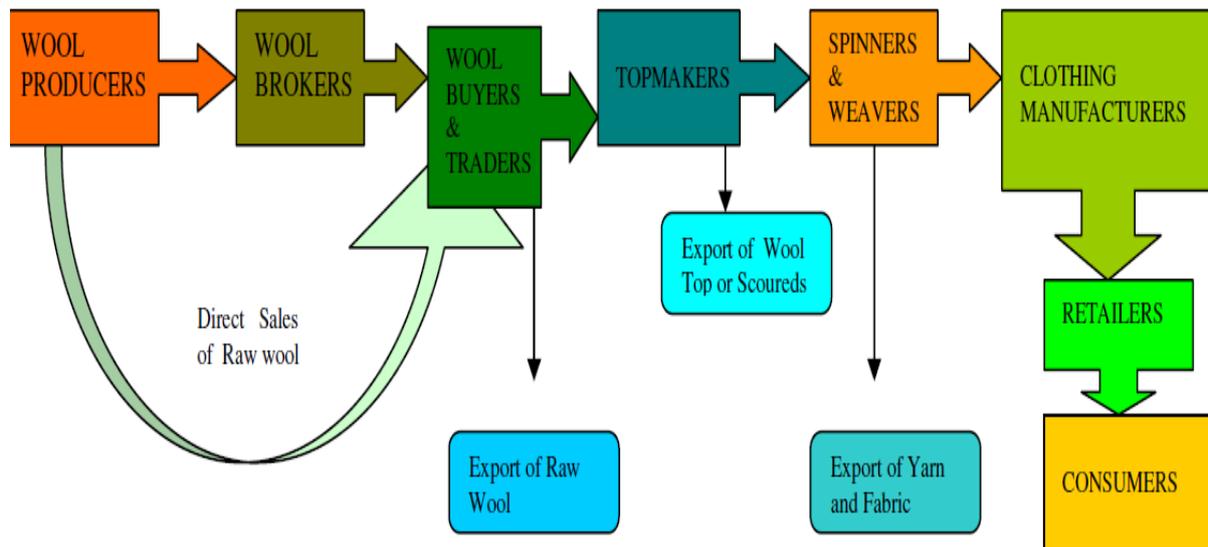
Wool sheared from a sheep is generally known as "grease wool" or "wool in the grease". Before the wool can be used for commercial purposes, it must be scoured or cleaned as it may contain dirt and dead skin. The scouring process may be complicated by involving an industrial process of using detergent and specialised equipment for it to be commercially sold. After shearing, the wool is separated into five main categories, namely; fleece (which makes up the vast bulk), broken, pieces, bellies and locks. The latter four are pressed into wool packs and sold separately.

The quality of wool is determined by a technique known as wool classing, whereby a qualified wool classer groups wool of similar grading together to maximise the return for the farmer or sheep owner. The quality of wool is also determined by factors such as fibre diameter, crimp, yield, colour and staple strength. Fibre diameter is the single most important wool characteristic determining the quality and price. Below we demonstrate a

³⁰ <https://www.nda.agric.za/docs/GenPub/8WoolMohair.pdf>

typical wool market value chain. **Figure 5** shows that the wool market value chain involves several steps before the final product reaches the consumer.

Figure 5: Wool Value Chain



Source: DAFF³¹

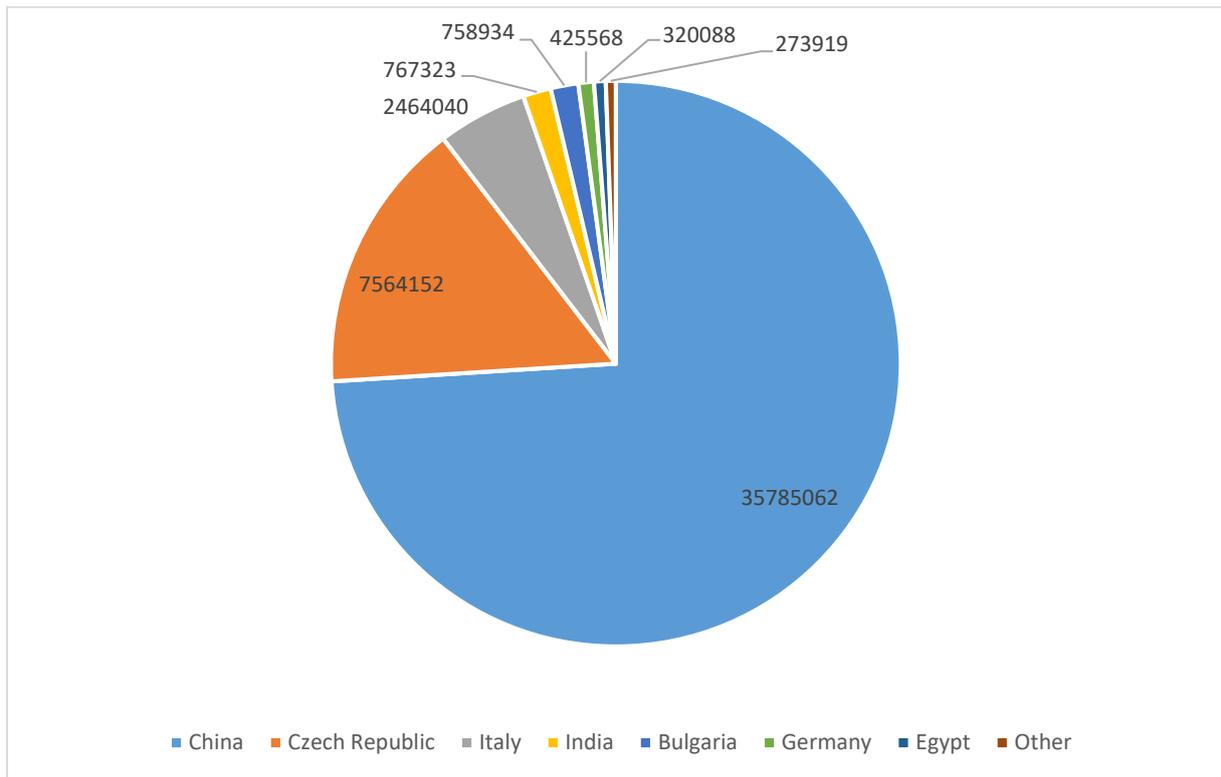
Wool exports

The South African scouring and combing industry is stated to be capable of processing a significant proportion of the annual greasy wool production. However, the bulk of the wool clip is exported in either greasy or semi-processed form. South African wool is largely an export commodity. **Figure 6** and **Figure 7** below demonstrates South African exports by mass and rand value, respectively.

According to **Figure 6** and **Figure 7**, it is apparent that China followed by the Czech Republic are the two largest South African wool export markets in terms of mass and rand value during the 2017-18 season.

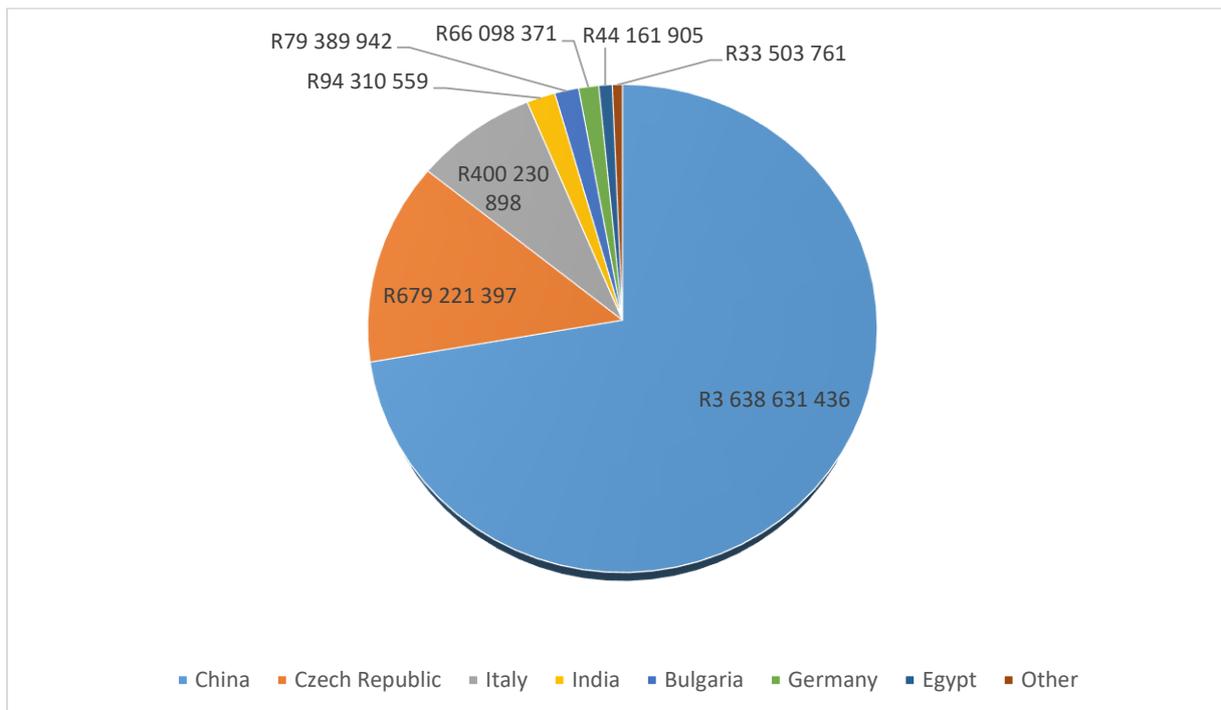
³¹ <https://www.daff.gov.za/docs/amcp/woolmvp2011-12.pdf> . Accessed on 26 May 2019.

Figure 6: South African exports by mass (kg) (2017-2018 season)



Source: Cape Wools SA³²

Figure 7: South African exports by value (R) (2017-18 season)



Source: Cape Wools SA³³

³² Cape Wools SA. Meeting Presentation dated 2 May 2019.

³³ Cape Wools SA. Meeting Presentation dated 2 May 2019.

Shearing sheds

It is noted that emerging farmers do not have access to shearing shed facilities, which tends to have an impact on the quality of wool they produce, due to factors such as contamination. For example, during the shearing process, classing and packaging, wool can be contaminated. Further communal farming makes it difficult to keep the wool from other animals, which therefore leads to significant contamination of wool, which can be very costly when wool must be cleaned or scoured.

Insufficient shearing and wool sorting equipment

Emerging farmers do not have access to the necessary equipment to allow them to improve on the quality of produce. It is also noted that they do not possess the financial capabilities to purchase this equipment.

Lack of transport infrastructure

A lack of necessary infrastructure causes emerging farmers to obtain lower prices for their wool, because of significant transport costs they bear in transporting wool from rural areas to where it would be auctioned or sold to a broker.

Lack of land tenure

Lack of private land tenure is a challenge for emerging farmers such as it is restraining private incentive for development, such as infrastructure for production, management and marketing of wool.

The research finds that although behavioural barriers might exist (e.g. anti-competitive conduct of incumbent players), the barriers inherent in the wool industry are structural, as they involve access to infrastructure, inputs and finance. In this regard, these barriers can be addressed by the government and other key industry players to assist the emerging farmers to overcome them.

Case Study 3: Access to Fertilizer

Emerging farmers have raised concerns about the escalating price of fertilizer and the high degree of market concentration of fertilizer producers. Since the market is managed exclusively by a few companies, concerns were raised about the potential for these companies to coordinate their behaviour and engage in collusive conduct.

Market Concentration

The estimated value of the South African fertilizer market is approximately R10 billion.³⁴ The industry supplies around 2 million tons of fertilizer products to the local market with the maize industry consuming between 40% and 50% of total production.³⁵ South Africa is a net importer of fertilizer.

The fertilizer industry is effectively controlled by three companies; Omnia with a market share of 45%, followed by Kynoch and Profert Holdings, with an estimated 15% each. Foskor is the only producer of phosphates and phosphoric acid and Sasol is the largest producer of chemical inputs into fertilizer but is no longer allowed to sell the end-product. This follows the Commission's intervention to ensure competitive pricing in the manufacture of fertilizers (discussed later).

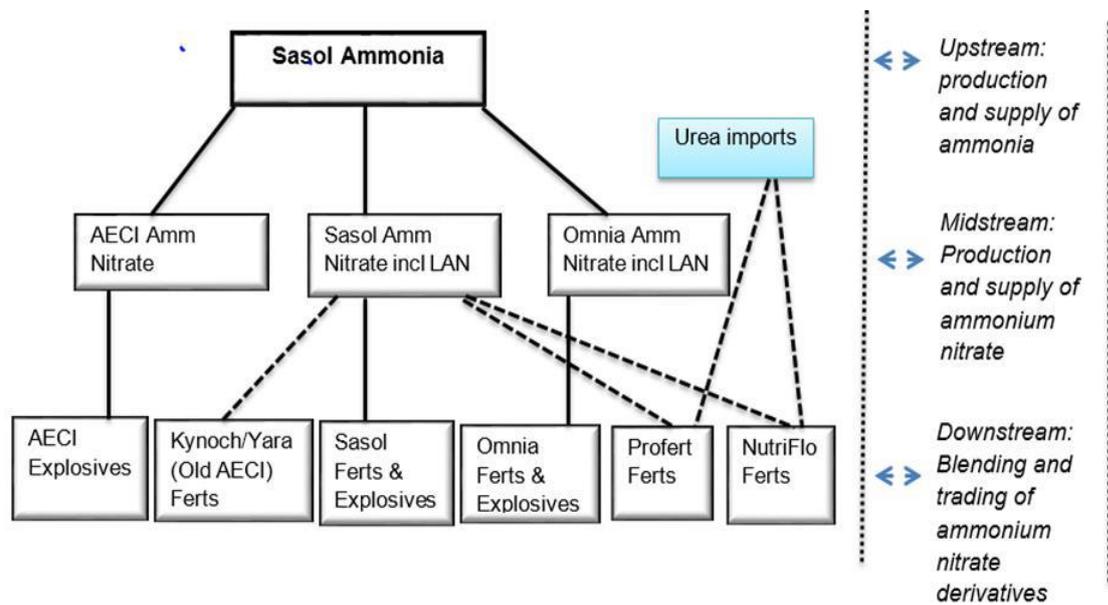
Omnia, Foskor and Kynoch import and supply ammonia (input to produce fertilizer) through their shared ownership of the Richards Bay ammonia import facility, each owning a share of 25%, with Sasol being the fourth shareholder. At present Sasol remains the dominant supplier of ammonia to independent manufacturers of fertilizers in South Africa and is also active throughout the value chain.³⁶ **Figure 8** shows the fertilizer value chain, the role players and the products produced.

³⁴ Who Owns Whom Report 'The Fertiliser and Nitrogen Compounds Industry' (26 May 2017) accessible at <https://www.whoownswhom.co.za/store/info/4507> last accessed on 18 March 2019.

³⁵Ibid.

³⁶ Sunél Grimbeek, Godknows Giya & Qhawe Mahlalela 'The impact on competition in the fertiliser industry after the Sasol divestiture of blending facilities in 2010' (July 2017) Working Paper No. 1 at page 2, accessible at <http://www.compcom.co.za/wp-content/uploads/2016/11/CC-2017-01-Grimbeek-S.-Giya-G.-Mahlalela-Q-2017-The-impact-on-competition-in-the-fertiliser-industry-after-the-Sasol-divestiture-of-blending-facilities-in-2010.pdf> last accessed on 18 March 2019.

Figure 8: The fertilizer value chain in South Africa



Source: Commission's expert report (Case Number: 31/CR/May05 and 31/CR/May05)

Downstream there are blenders and traders, such as Nutri-Flo and Profert. The growth of market participants at this level was dependent on Sasol as the key upstream input supplier of ammonia. In 2010, Sasol was fined R250 million for its abuse of dominance, exclusionary conduct and price discrimination in the supply of ammonia and derivative fertilizer products.³⁷ In terms of the settlement agreement, Sasol was ordered to divest five of its fertilizer blending facilities located in South Africa. Further conditions were imposed. Sasol cannot impose any restrictions or obligations upon its customers with respect to the terms of usage and resale of fertilizers. Furthermore, Sasol may not differentiate in its pricing other than on standard commercial terms such as volume and off-take commitments. In addition to Sasol, Omnia was fined R30 million by the Competition Tribunal in September 2018 for contraventions of the Competition Act.

The Commission conducted an impact study of its interventions in the nitrogenous fertilizer value chain. The study found that post-intervention, positive outcomes have been observed in the fertilizer industry. As per the order of the Competition Tribunal, all five blending plants were divested by Sasol. Post-intervention, there has not been any entry in the production of ammonia and Sasol remains the sole producer of ammonia in South

³⁷ Ammonia is the key input into the production of nitrogenous fertilizers.

Africa. This can be explained by the significant capital outlay required in building an ammonia plant. However, the Commission found that there was an increase in the importation of ammonia since 2010. This has created opportunities for expansion and entry downstream, particularly in the market for fertilizer blending and distribution. As a result of the divestiture, there has been significant entry by blenders and traders.³⁸ According to GFADA, new entrants in the Fertilizer market since 2010 include blenders such as Triomph, High Fertilizer and NPK. These companies do not produce fertilizer. Instead, they mix the production input and bag it for distribution. There have been no new entrants in the production level of the value chain since 2010.³⁹

The firms that were previously traders and reliant on Sasol for Limestone Ammonium Nitrate (“LAN”), Ammonium Nitrate Solutions (“ANS”) input supplies have subsequently expanded and acquired their own blending plants in the period post-intervention. After the settlement in 2010, Profert acquired Sasol’s Potchefstroom and Bellville plants in Cape Town in March and August 2011 respectively. GWK, an agricultural cooperative that is also involved in the blending and distribution of granular and liquid fertilizer products, acquired Sasol’s Durban plant in June 2011. Farmisco (Pty) Ltd t/a Kynoch acquired both Sasol’s Kimberley and Endicott plants.

Although Omnia has increased its upstream presence through increased importation of ammonia and production of nitric acid on one hand and production and supply of nitrogenous fertilizers on the other, the degree of vertical integration of Sasol has been reduced as a result of the divestiture of Sasol’s blending facilities.

It is estimated that customer savings range between R1 billion and R10.5 billion during the first five and a half years after the interventions in the industry in 2010.⁴⁰ Therefore, these

³⁸ Sunél Grimbeek, Godknows Giya & Qhawe Mahlalela ‘The impact on competition in the fertilizer industry after the Sasol divestiture of blending facilities in 2010’ (July 2017) Working Paper No. 1 at page 7, accessible at <http://www.compcom.co.za/wp-content/uploads/2016/11/CC-2017-01-Grimbeek-S.-Giya-G.-Mahlalela-Q-2017-The-impact-on-competition-in-the-fertiliser-industry-after-the-Sasol-divestiture-of-blending-facilities-in-2010.pdf> last accessed on 18 March 2019.

³⁹ Teleconference with GFADA on 28 May 2019.

⁴⁰For further information on this assessment refer to page 13 of Sunél Grimbeek, Godknows Giya & Qhawe Mahlalela ‘The impact on competition in the fertilizer industry after the Sasol divestiture of blending facilities in 2010’ (July 2017) Working Paper No. 1, accessible at <http://www.compcom.co.za/wp-content/uploads/2016/11/CC-2017-01-Grimbeek-S.-Giya-G.-Mahlalela-Q-2017-The-impact-on-competition-in-the-fertiliser-industry-after-the-Sasol-divestiture-of-blending-facilities-in-2010.pdf> last accessed on 18 March 2019.

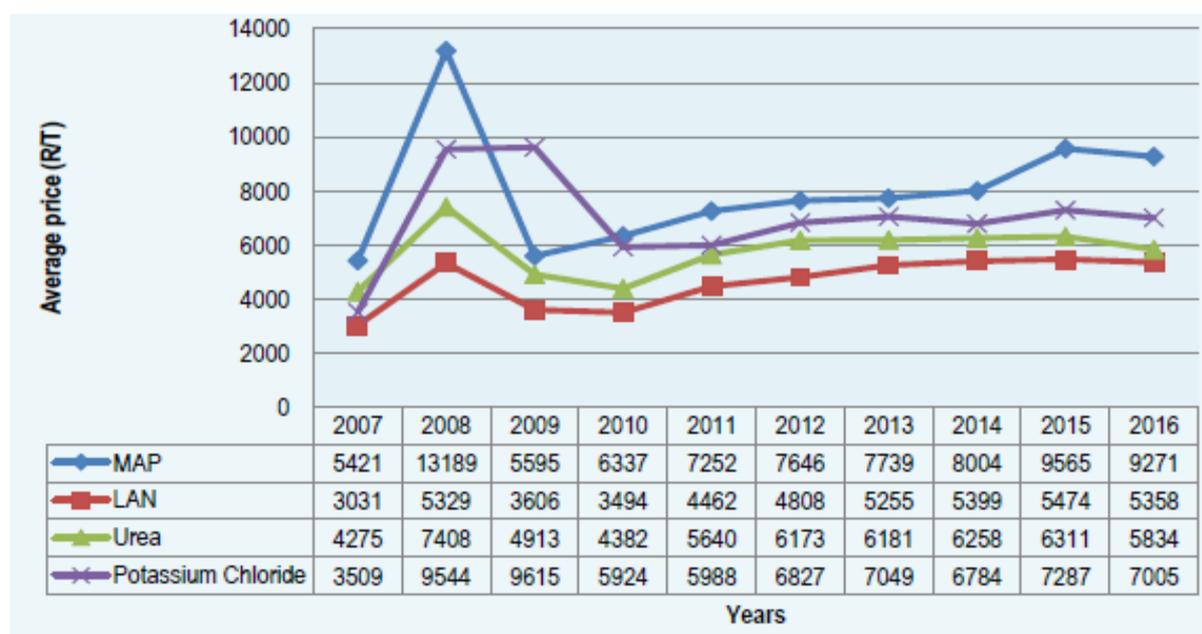
interventions have enabled a market structure that brings about more competition than which existed prior to the interventions.

The price of fertilizer

Fertilizer as production input contributes on average between 30% and 50% to a grain and oilseed producers' variable production costs in South Africa. For this reason, the price that grain and oilseed producers pay for fertilizer is an important determinant of the profitability of grain and oilseed production in South Africa.⁴¹

The South African fertilizer industry operates in a deregulated environment with no import tariffs or government-sponsored support measures.⁴² Due to the fact that South Africa imports over 60% of its local fertilizer demand and that the local industry operates in the free market, international price trends filter into the South African market. **Figure 9** shows the average fertilizer prices in South Africa for the period 2007 to 2016.

Figure 9: Fertilizer prices in South Africa, 2007-2016



Source: DAFF 'South African Fertilizers Market Analysis Report' (2017) data from GrainSA

⁴¹ GrainSA Fertilizer Report (2011) accessible at <https://www.namc.co.za/wp-content/uploads/2017/10/Value-Chain-Study-of-the-South-African-Fertiliser-Industry.pdf> last accessed on 18 March 2019.

⁴² DAFF 'South African Fertilizers Market Analysis Report' (2017) page 4, accessible at <https://www.nda.agric.za/doiDev/sideMenu/Marketing/Annual%20Publications/Commodity%20Profiles/field%20crops/South%20African%20Fertilizer%20Market%20Analysis%20Report%202017.pdf> last accessed on 18 March 2019.

Prices of all fertilizers experienced a price increase during the 2008 season. Average fertilizer prices of Mono-Ammonium Phosphate (MAP) dominated over the nine years attaining a peak in 2008 at approximately R13 188.00 per ton. Generally, it is evident from **Figure 9** that between 2010 and 2016, average prices of fertilizers in South Africa increased at an average percentage increase of about 6%. Between 2006 and 2007 and between 2009 and 2010, average fertilizer prices in South Africa were low and that benefitted farmers in terms of prices and affordability. However, in 2008, farmers faced high average prices. This sharp increase in fertilizer prices in 2007 and 2008 could be attributed to high oil prices, imposed import duties and the economic crisis in 2008.⁴³ **Table 2** shows the relationship between local and international fertilizer prices.

Table 2: Local and International fertilizer prices (in Rands)

Fertilizers	March 2017 R/ton (Local)	March 2017 R/ton (International)	% Difference (March 2017)	March 2018 R/ton (Local)	March 2018 R/ton (International)	% Difference (March 2018)
LAN (28)	5 527	3 904	-29.4	5 498	3 803	-30.8
Urea (46)	6 046	3 284	-45.7	5 847	2 764	-52.7
MAP	8 519	4 762	-44.1	8 414	4 783	-43.1
Potassium chloride	6 274	2 849	-54.6	6 584	2 858	-56.6

Source: DAFF 'South African Fertilizers Market Analysis Report' (2017) data from GrainSA

Table 2 reveals symmetric price transmission between local prices and international prices. The tables also show that there is a price gap between local and international fertilizer prices. Grain SA finds that much of the difference between international and local price changes are caused by non-policy factors, such as deficiencies in the market (market power), physical (transport and storage), commercial (market information), and institutional (credit and regulating laws) infrastructure. However, much of the price differences were also caused by factors such as fluctuations in the exchange rate between the Rand and other currencies.⁴⁴

⁴³ Ibid at page 11.

⁴⁴ Ibid at page 12. GrainSA Fertilizer Report (2011) accessible at <https://www.namc.co.za/wp-content/uploads/2017/10/Value-Chain-Study-of-the-South-African-Fertiliser-Industry.pdf> last accessed on 18 March 2019. Meeting with GFADA on 28 May 2019.

According to Fertasa and GrainSA, transport may be one of the major factors distorting local fertilizer prices. Transport is mainly done by road because rail transport has become unreliable and has deteriorated significantly in the last decade. The rail infrastructure and capacity from Richards Bay also impedes the ability of producers to move the product more cost-efficiently. Thus the lack of an efficient rail transport system is impeding on the transport of ammonia.⁴⁵ Other factors cited by Fertasa to be the cause of the increase in the price of fertilizer is inflation and the international trade of fertilizer (import parity price). Imports of fertilizer are required to be registered and trials are performed on samples of the imports in South Africa for quality control. The same tests are performed in the country of origin, which means that the same tests are unnecessarily repeated, and the costs are passed onto customers. Therefore, the cost of transport, fuel and quality control tests must be addressed in order to reduce the price of fertilizer.⁴⁶

Despite the potential role played by other market factors that drive local fertilizer prices and market concentration in the fertilizer industry, the Commission's interventions have contributed significantly to reducing the barriers to entry at upstream and downstream levels of the fertilizer value chain. However, continuous regulation in this industry is necessary to ensure competitive pricing behaviour among fertilizer producers and distributors and investment towards building local production facilities.

⁴⁵ Ibid at page Vii.

⁴⁶ Teleconference with Fertasa on 24 May 2019.

Case Study 4: Access to Seeds

The development of the seed industry in South Africa dates to the 1940's, during the establishment of the first seed group named the South African Seedsmen's Association. This was followed by the introduction of seed legislation to South Africa, with subsequent re-organisation of the sector in the 1960's steered towards the formation of several associations such as the South African Plant Breeders' Association, South African Hybrid Maize Organisation, South African Vegetable Growers Association and South African Forage Crop Seed Association.⁴⁷ In the late 1980s, there was a need for seed certification, which led to the establishment of South African National Seed Organization's (SANSOR) in 1989, where the majority of the role players in the seed industry were gradually incorporated.⁴⁸

SANSOR which is a non-profit association in the industry comprises of seed companies.⁴⁹ It is further noted that South Africa's seed sector is regulated mainly through four key legislation, namely; the Plant Improvement Act no. 53 of 1976 (as amended), the Plant Breeders' Rights Act no. 15 of 1976 (as amended), the Agricultural Pests Act no. 36 of 1983 (as amended), and the Genetically Modified Organisms Act no. 15 of 1997 (as amended).⁵⁰

In the seed market, the three largest seed production companies (Monsanto, Pannar Seed and Du Pont Pioneer) shared between them 90% of the market for grain seeds before Du Pont Pioneer bought Pannar in 2012, creating a duopoly. In 2017, there was merger activity in the seed sector. For example, Monsanto merged with Bayer Crop Science; DuPont Pioneer merged with Dow AgroScience, and Syngenta acquired ChemChina. The main reasons driving these mergers and acquisitions included the need to secure and expand into new markets and diversify the company portfolios following the decline in prices of crops and cereals.²The approval of the above mergers resulted

⁴⁷ South African National Seed Organization. Accessed from: <http://sansor.org/welcome/> on 14 March 2019.

⁴⁸ Ibid.

⁴⁹ Department of Agriculture, Forestry & Fisheries. GRAIN SEEDS MARKET ANALYSIS REPORT 2015, pg. 32. Accessed from: <https://www.nda.agric.za/doaDev/sideMenu/Marketing/Annual%20Publications/Commodity%20Profiles/field%20crops/South%20African%20Grain%20Seeds%20Market%20Analysis%20Report%202015.pdf> on 12 March 2019.

⁵⁰ South African National Seed Organization. Accessed from: <http://sansor.org/seed-legislation/> on 18 March 2019.

in three corporations controlling approximately 60% of the globally patented seed market and 64% of the agrochemical market.⁵¹

Barriers in the seed sector

The South African seed system is regarded by market players to be highly industrialised, commercialised and centralised, dominated by genetically uniform, commercially-bred seed varieties, which have replaced genetically variable traditional varieties.⁵² However, it is noted by the authors that there are various challenges which are faced by market players in the sector such as poor infrastructure (especially roads).⁵³

Diseases, pests, and high operational costs (such as investment in processing and storage facilities) are stated to be one of the barriers in the sector.⁵⁴ This was further corroborated by Bayer,⁵⁵ who stated that the barriers to entry within the seeds market are high. Moreover, the availability of seeds in remote areas where most emerging farmers are situated tends to be a challenge, as there are few dealers supplying seed in those areas. The other obstacles faced by emerging farmers are in relation to lack of knowledge about the available improved seed options which would be best suited for a particular farm, as well as what other inputs (such as fertiliser) are required to get the best outcomes from the seed.⁵⁶ The emerging farmers also must bear the costs of acquiring seed. **Figure 10** below, illustrates a typical seed market value chain. The first four steps in the value chain involve significant research and development (R&D) because seeds consist of genetics and technology. It is also apparent from **Figure 10**, that transport and supply chain logistics is required at all levels of the value chain.

⁵¹ Centre for Competition, Regulation and Economic Development. 2017. "The Implications of Global Consolidation in the Seed Industry". Accessed from: <https://www.competition.org.za/review/2017/8/29/the-implications-of-global-consolidation-in-the-seed-industry> on 31 May 2019.

⁵² African Centre for Biodiversity. 2016. Integration of small-scale farmers into formal seed production in South Africa: A scoping report. Accessed from: <https://acbio.org.za/wp-content/uploads/2016/06/Seed-Production-report-ACBio-2016-06.pdf> on 18 March 2019.

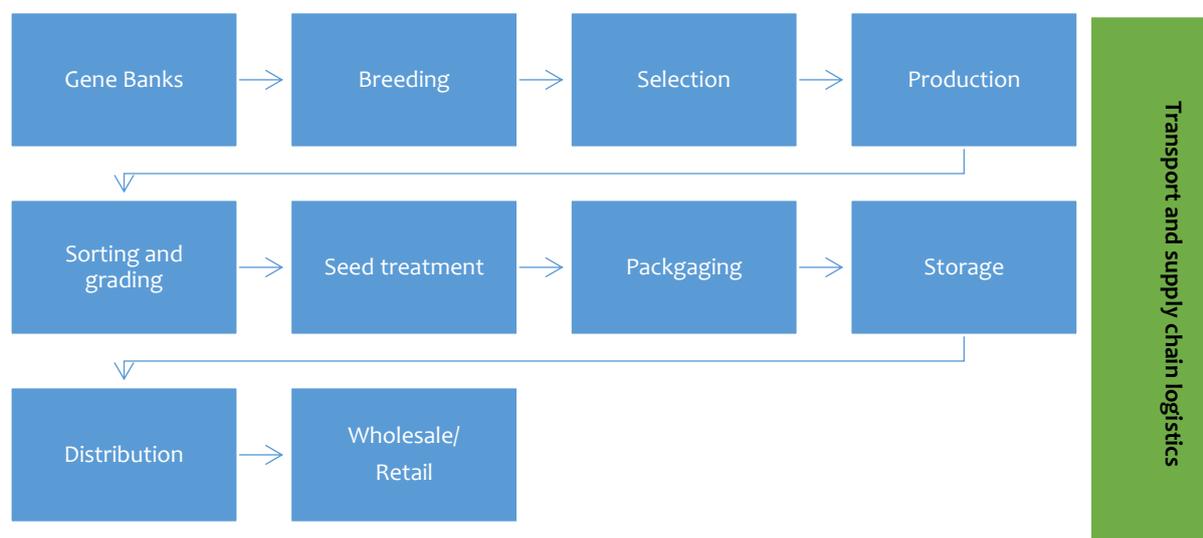
⁵³ Department of Agriculture, Forestry & Fisheries. GRAIN SEEDS MARKET ANALYSIS REPORT 2015, pg. 33. Accessed from: <https://www.nda.agric.za/doaDev/sideMenu/Marketing/Annual%20Publications/Commodity%20Profiles/field%20crops/South%20African%20Grain%20Seeds%20Market%20Analysis%20Report%202015.pdf> on 12 March 2019.

⁵⁴ Department of Agriculture, Forestry & Fisheries. GRAIN SEEDS MARKET ANALYSIS REPORT 2015, pg. 33. Accessed from: <https://www.nda.agric.za/doaDev/sideMenu/Marketing/Annual%20Publications/Commodity%20Profiles/field%20crops/South%20African%20Grain%20Seeds%20Market%20Analysis%20Report%202015.pdf> on 12 March 2019.

⁵⁵ See telecon with Bayer (Cobus Bester) dated 06 June 2019.

⁵⁶ Ledger, T. 2017. "Case study on the agricultural inputs regional value chain in Southern Africa: South Africa, Mozambique, Tanzania and Zambia". pg. 30. Accessed from: <http://www.tips.org.za/research-archive/trade-and-industry/item/3453-case-study-on-the-agricultural-inputs-regional-value-chain-in-southern-africa-south-africa-mozambique-tanzania-and-zambia> on 31 May 2019.

Figure 10: The agronomic seed market value chain



Source: Authors interpretation based on DAFF (2015:28)⁵⁷

The Commission's interventions

The competition concerns in the seed industry have involved abuse of dominance by market players through engaging in exclusionary arrangements. For example, at a breeder level, the Commission previously found long-term exclusive rights (e.g. 20 years) between seed growers and breeders. This type of intellectual property right was argued by market players to enable the breeder to recoup research and development costs through the exclusive rights. However, the competition authorities found that the conduct resulted in anticompetitive effects such as the creation of insurmountable barriers to entry to the market for producing and supplying seed varietal, impact on the potential competitors of the seed grower who seek to produce and supply the seed varietal and substantial prevention and/or lessening of competition in the market for the production and supply of seed varietal.⁵⁸

⁵⁷ Department of Agriculture, Forestry & Fisheries. Grain Seeds Market Analysis report 2015, pg. 28. Accessed from: <https://www.nda.agric.za/doaDev/sideMenu/Marketing/Annual%20Publications/Commodity%20Profiles/field%20crops/South%20African%20Grain%20Seeds%20Market%20Analysis%20Report%202015.pdf> on 12 March 2019.

⁵⁸ Competition Commission. Wesgro Potatoes and HZPC Holland BV vs Competition Commission. Accessed from: <http://www.compcom.co.za/wpcontent/uploads/2017/01/Potato-Media-Statement.pdf> on 19 March 2019.

The competition authorities have also made interventions in seed-specific markets (e.g. maize and sunflower seed) and where there are high levels of concentration. The Commission found higher levels of concentration in the relevant markets may disincentivise local innovation and increase the likelihood of price increases to the detriment of farmers and consumers.⁵⁹

In the seed treatment market, the Commission identified competition concerns related to the removal of potential competition in the development and production of traits for seeds and the accompanying herbicides used in several agricultural markets. There are also several structural factors in this level of the value chain which are conducive for coordinated conduct which would be enhanced through the prevalence of cross-licensing agreements. To remedy these concerns, the Commission has previously imposed conditions for the divestiture and selling off some parts and entire businesses in merger reviews to promote competition in the relevant markets.⁶⁰

It is implicit that there are several competition issues that have been uncovered and addressed by the competition authorities in the seed sector over time. However, given the level of market concentration in some seed-specific markets, there is a need for lowering barriers for new market players such as through less stringent regulation for seed producing companies. This is because higher levels of concentration may result in merged entities abusing their dominance through increased market power and raising prices, along with potential effects in terms of reducing competition in terms of innovation and quality. This may also create a platform for market players to engage in collusive behaviour. Furthermore, lack of entry on new players and dominance of global players in the African market and continuous acquisition of local firms by global seed companies could potentially undermine competition at a local level in the seed industry.

⁵⁹ Competition Commission. Accessed from: <http://www.compcom.co.za/wpcontent/uploads/2017/01/Weekly-Media-Statement-25-Oct-17.pdf> on 19 March 2019. Competition Tribunal. Pioneer vs Pannar Merger, Case No. 81/AM/Dec10. Accessed from: <https://www.comptrib.co.za/assets/Uploads/81AMDec10.pdf> on 19 March 2019.

⁶⁰ Competition Commission. Bayer vs Monsanto Merger. Accessed from: <http://www.compcom.co.za/wp-content/uploads/2017/01/Commission-Conditionally-Approves-Bayer-Transaction-Final.pdf> on 18 March 2019. Competition Commission. DowDuPont vs Dow Merger. Accessed from: <http://www.compcom.co.za/wp-content/uploads/2017/01/Du-Pont-media-release-5-July-2017.pdf> on 15 May 2019.

Case Study 5: Access to Machinery

The major agricultural machinery products in the South African market include both high-tech tractors with automated functions and basic specification tractors with newer technology engines to provide optimized fuel consumption and performance. The precision farming systems have helped to bring about improved accuracy, productivity, efficiency, as well as reduced production cost on applications such as yield mapping, variable rate fertilizing, variable rate planting/seeding and automated spray functions. These applications are becoming the focus for the commercial farmers in South Africa. The authors understand from information provided by stakeholders that tractors constitute approximately 60% of the agricultural machinery market in South Africa, while the remaining 40% is machinery that is specific to the relevant agricultural product or produce. **Table 3** below depicts the type of machinery used by farmers for the different agricultural products or produce.

Table 3: Description of the types of machinery used by farmers

Type of machinery	Description of machinery
Tractor	Tractors are used for pulling or pushing agricultural machinery or trailers, for ploughing, tilling, disking, harrowing, planting, and similar tasks. Tractors constitute approximately 60% of the machinery used by farmers.
Ploughing and Cultivating Machinery	Ploughing machinery includes farm implement used for breaking up or loosening the soil and cutting furrows in preparation for sowing. Cultivating machines are used for working, weeding or smoothing the soil after ploughing or during the growth of the crops.
Planting and Fertilizing Machinery	Machinery used for sowing or planting of the seeds and machinery to sprinkle and distribute the fertilization to the seed to help the plants to grow.

Harvesting Machinery	Machinery built for harvesting specific crops. (E.g. Bean harvester, Beet harvester, Carrot harvester, Combine (grain) harvester / Stripper, Header, Corn harvester, Forage or silage harvester, Grape Harvester, Over-the-row mechanical harvester for harvesting apples, Potato harvester, Potato spinner/digger which is becoming obsolete, and Sugarcane harvester. Variations of harvesters are stripper cleaners and stripper loaders.
Haying and Forage Machinery	Machinery that includes mowers and balers to forage blowers and storage boxes
Irrigation Machinery	Irrigation machinery include everything from hoses and impact rotor sprinklers to valves, pipes, controllers, and drip emitters

Source: Authors compilation based on submission by the South African Agricultural Machinery Association (SAAMA)

There are several barriers facing emerging farmers which are related to agricultural machinery. For example, emerging farmers experience challenges of affording and accessing agricultural machinery such as tractors, harvesting tools, processing utensils and basic farm implements such as spades, hoses and water cans. Prices for agricultural machinery are stated to be too steep for emerging farmers. However, the research notes that this may be because certain agricultural machinery and equipment are imported. Therefore, the exchange rate fluctuation plays a role in the prices of the machinery and equipment sold to farmers.⁶¹

The authors further note that training is required to assist emerging farmers to efficiently use the machinery and meet the demands of modern technology and the digital age. Farmers in poor rural areas further face scarcity of resources such as agricultural machinery to support agricultural production. The other constraints faced by emerging farmers in the agricultural machinery market in South Africa include lack of awareness about new

⁶¹ Musvoto, E et al., 2014. "Imperatives for an agricultural green economy in South Africa". South African Journal of Science, 111 (1/2): 1-8.

technologies, lack of skilled manpower, fluctuating prices of farm commodities, lack of governmental support, and lack of purchasing power due to a lower average level of affluence.⁶²

The mechanisation of equipment ranging from tractors to harvesting equipment, to automatic animal feeding to dairy equipment, and borehole pumps are generally viewed as an important factor in increasing agricultural productivity, through the entire process of production, starting from planting up to harvesting and processing. In South Africa, mechanisation has generally been limited to large-scale commercial farms, while smaller farming operations are generally labour intensive. Agricultural labour in other countries is particularly cheap when compared to South Africa, and smallholder farmers cannot afford to purchase agricultural equipment and struggle to access finance to secure such equipment. However, as agricultural markets develop and demand for food increases, demand for a wide range of agricultural equipment across the region is growing.⁶³ One key factor necessary for the sustainable development of regional markets in agricultural equipment is a network of service agents in rural areas that can service equipment and supply spare parts. Additionally, a more effective regional value chain is dependent on a more effective regulatory environment.

Impact of the fourth Industrial Revolution

The fourth industrial revolution creates an opportunity for the agricultural sector to evolve and create opportunities for emerging farmers.⁶⁴ With the fourth industrial revolution, farmers will be faced with new technologies that will propel them to learn new ways of agricultural production using sophisticated machinery and equipment. The accelerated adoption of agricultural technology (AgTech) will also offer new, efficient and sustainable ways of farming and lead to increased competition amongst producers in the agricultural

⁶² Khapayi, M. & Celliers, P. R. 2016. 'Farmers Limiting and Preventing Emerging Farmers to Progress to Commercial Agricultural Farming in the King William's Town Area of the Eastern Cape Province, South Africa.' Available from: <http://dx.doi.org/10.17159/2413-3221/2016/v44n1a374>.

⁶³ Trade & Industrial Policy Strategies (TIPS), TIPS report for the Department of Trade And Industry Case study on the agricultural inputs regional value chain in Southern Africa: South Africa, Mozambique, Tanzania and Zambia dated December 2017.

⁶⁴ Handbook for agricultural Economics, Chapter 74 Agriculture Renaissance: Making "Agriculture for Development" Work in the 21st Century by Prabhu Pingali. Accessed at <https://www.sciencedirect.com/science/article/pii/S1574007209040742#> on 28 February 2019.

sector.⁶⁵ The authors do note that there may be an initial effect on employment in the sector as jobs are replaced by machines. However, it is the authors' view that mechanisation will require a different set of skills, however, jobs will still be created in the sector.

In this regard, it is imperative to create avenues for smallholder farmers to become commercially sustainable. These may include an incubation period focused on developing new entrants and creating a productive mindset, education on technology, farming practices and mentorships to support skills development.⁶⁶

Import Competition

Agricultural machinery, such as tractors, are imported in South Africa because, according to some stakeholders, there is not enough local demand to sustain local production. There are more than fifteen (15) international companies that provide agricultural machinery in South Africa including; John Deere and Company, Mahindra & Mahindra Ltd, Tractors and Farm Equipment Ltd, Foton Lovol International Heavy Industries Company Ltd, Kubota Tractor Corp, Claas KGaA mbH, Yanmar Company Limited, among others.

There have been various multinational companies that considered manufacturing in South Africa, however, it was found that the demand for agricultural machinery in South Africa is not enough to sustain local production. The South African Agricultural Machinery Association estimated that currently there is a demand for about 7000 tractors in South Africa.

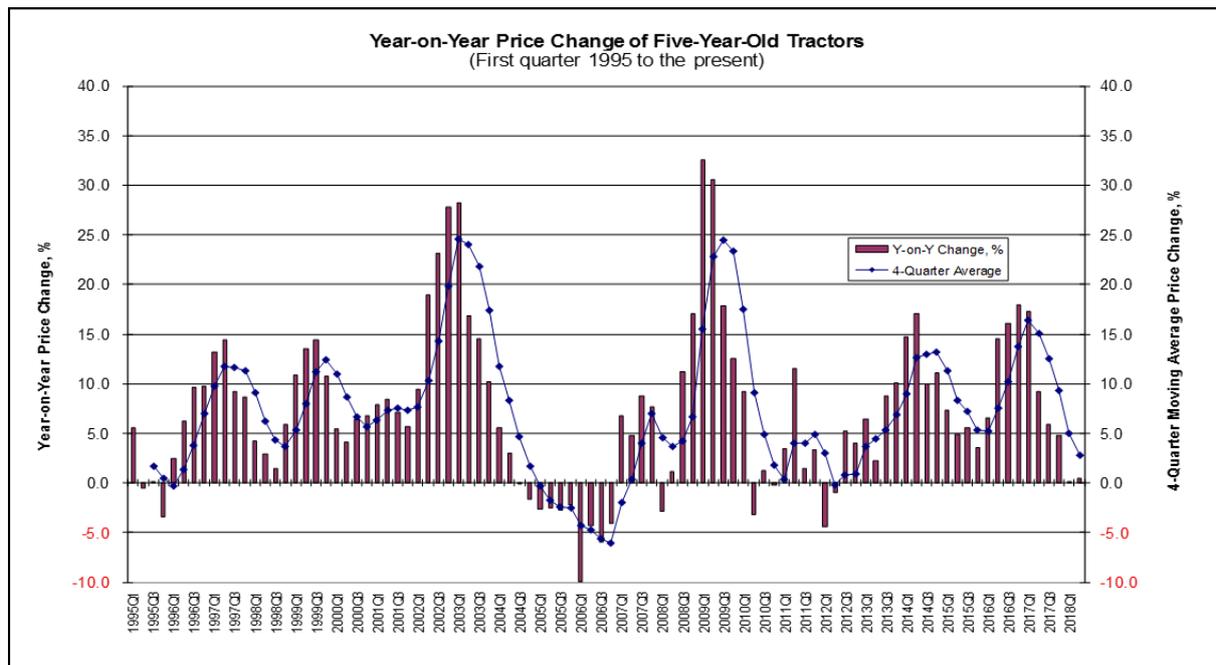
The prices of agricultural machinery

Figure 11 below shows how prices of tractors have moved from the first quarter of 1995 to the first quarter of 2018. These changes are shown on year-on-year by quarter, together with the moving average of the price changes.

⁶⁵ "The future of the Western Cape agricultural sector in the context of the Fourth Industrial Revolution" Accessed from: <https://www.usb.ac.za/wp-content/uploads/2018/07/THE-FUTURE-OF-THE-WC-AGRICULTURAL-SECTOR-IN-THE-CONTEXT-OF-4IR-FINAL-REP.pdf> on 20 March 2019.

⁶⁶ "The future of the Western Cape agricultural sector in the context of the Fourth Industrial Revolution" Accessed from: <https://www.usb.ac.za/wp-content/uploads/2018/07/'The-Future-of-the-WC-Agricultural-Sector-in-the-Context-of-4IR'-Final-Report-THE-FUTURE-OF-THE-WC-AGRICULTURAL-SECTOR-IN-THE-CONTEXT-OF-4IR-FINAL-REP.pdf> on 20 March 2019.

Figure 11: yearly price changes of five-year-old tractors



Source: AGFACTS submission dated 14 February 2019.

Figure 11 shows that there has been a fluctuation in the prices of tractors overtime. However, this fluctuation in the prices can be attributable to the movements in the exchange rate since tractors in South Africa are imported from other countries as previously stated. The authors note that the recent hike in tractor prices as per **Figure 11** since the first quarter of 2016 until about the first quarter of 2017, was caused by the weakening in the value of the Rand.⁶⁷

The research observes that emerging farmers face challenges to learn the necessary skills and technical knowledge to operate farm machinery and equipment. Smaller operations, thus, have difficulty in gaining economies of scale and access to technology that is required to be competitive in the market.⁶⁸

⁶⁷ Fin24. “Sarab: Rand drop has some funds flouting offshore limits” Accessed from: <https://www.fin24.com/Economy/sarb-rand-drop-has-some-funds-flouting-offshore-limits-20160122> on 20 March 2019.

⁶⁸ J Kirsten, K Sartorius, I Kamwendo, M Madola and M Likulunga ‘Policy issues for exploiting contract farming as a tool for empowering smallholder farmers in Southern Africa: A case study of South Africa, Zambia and Malawi’ (August 2015) accessible at <https://www.fanrpan.org/policy-issues-exploiting-contract-farming-tool-empowering-smallholder-farmers-southern-africa-case> last accessed on 18 January 2019 at page 1.

The Commission's interventions

The Competition Commission has had interventions in the agricultural equipment sector. John Deere was involved in several mergers with international tractor manufacturers. In past cases whereby John Deere was involved, the Commission found no competition issues. However, in 2017 the Commission imposed cross-shareholding/information exchange conditions whereby John Deere had the obligation not to exchange competitively sensitive information.⁶⁹ The Commission also investigated complaints regarding John Deere's conduct in the agricultural machinery industry. In its investigations, the Commission found no evidence of anti-competitive behaviour by John Deere in South Africa.

⁶⁹ See case no: 2017Jun0015

Case Study 6: Poultry

The poultry industry is the largest single contributor to the agricultural sector in South Africa. Some 20.9% of the total agricultural gross value in 2015 stemmed from poultry production.⁷⁰ This is not an unexpected statistic given that it provides the most affordable source of animal protein to the South African consumer, which makes it critical to food security.⁷¹

The main challenge indicated by emerging farmers is that the industry is concentrated and dominated by fully integrated broiler and egg producers. This has been the subject of several anticompetitive fines levied by the Competition Tribunal and investigations by the Commission in recent years. The major broiler producers include RCL Foods, Country Bird Holdings, Astral Foods, Quantum, Sovereign Foods and Kuipers Group. These 5 largest producers account for almost 70% of total production and the two largest producers, RCL Foods and Astral alone, represent almost half of the market.⁷²

They all own fully integrated poultry operations and thus breed their own flocks, own their own hatcheries, rear their own broilers and provide feed from their own feed mills. They also own, or are involved in, the secondary industry with their own or contracted abattoirs, handling meat processing, value-added product manufacturing, distribution and marketing. Some companies also have import and export divisions. Some own retail shops and fast food chains or have contracts to supply frozen and cooked chicken products directly to restaurants, fast food chains and supermarkets.⁷³ Within this highly concentrated environment, several small-scale poultry producers are producing a small share of the national product. It is estimated that only 2% of this production is from emerging farmers.⁷⁴

⁷⁰ See AgriSETA Report 'Poultry Sub-sector skills plan' (April 2018) accessible at <https://www.agriseta.co.za/downloads/Sector%20Skills%20Plan%202018%2019.pdf> on page 6, last accessed on 30 May 2019.

⁷¹ A collaborative report by the Bureau for Food and Agricultural Policy and the National Agricultural Marketing Council 'Evaluating the competitiveness of the South African broiler value chain' (2017) at page 5, accessible at <https://www.bfap.co.za/evaluating-the-competitiveness-of-the-south-african-broiler-value-chain/> last accessed on 18 March 2019.

⁷² Ibid at page 10.

⁷³ Who owns Whom 'The Poultry and Egg Industry' (30 August 2017) accessible at <https://www.whoownswhom.co.za/store/info/4529> last accessed on 28 February 2019.

⁷⁴ Accessed from: https://www.thedti.gov.za/parliament/2017/SA_Poultry_Sector.pdf last accessed 25 February 2019.

Rising costs of Inputs and Infrastructure

There have been rapid increases in key domestic input costs, such as rising feed costs (maize and soya) and breeding stock, rising electricity tariffs and reliable energy supply and access to day-old chicks.⁷⁵ Access to feed and the cost of feed, access to day-old chicks and the cost of day-old chicks pose barriers to entry for emerging farmers.⁷⁶ According to SAPA, when the price of feed goes up, the chicken price goes up and this attracts imports.⁷⁷ This is due to the integrated value chain in the poultry industry which impacts on multiple other sectors, such as feed materials.

The feed is the biggest production cost to producers, which consists of approximately 60 to 70% maize and 25% soya bean meal.⁷⁸ This causes production costs to fluctuate as grain prices increase or decrease in the market. Hence the efficiency and competitiveness of the poultry value chain relies and depends on the efficient operation of other value chains such as maize and soybeans.⁷⁹ These are constraining factors for effective competition in the poultry industry.⁸⁰ Import competition also poses a significant barrier to entry for emerging poultry producers. This is considered in detail in paper 3 of this series of research papers.

South Africa is a small producer in the global context; therefore, prices of feed are influenced by international markets. According to BFAP, this limits the extent to which changes in feed prices can be recovered from higher chicken prices when short term dynamics cause feed prices to increase. Integration in the global market has enabled South African producers to access leading technology but requires producers to be competitive in order to remain sustainable. BFAP conducted a benchmark analysis on data for the period 2015 to 2017 to evaluate the technical and economic efficiency of South African production relative to global leaders. **Figure 12** shows its findings in respect of increasing feed costs.

⁷⁵ Presentation by Izaak Breitenbach (SAPA) 'Nedlac South African Poultry Industry' (28 February 2019), not available online.

⁷⁶ SAPA 'Subsistence and Small Commercial Farmer Report' 4Q2018 at page 8.

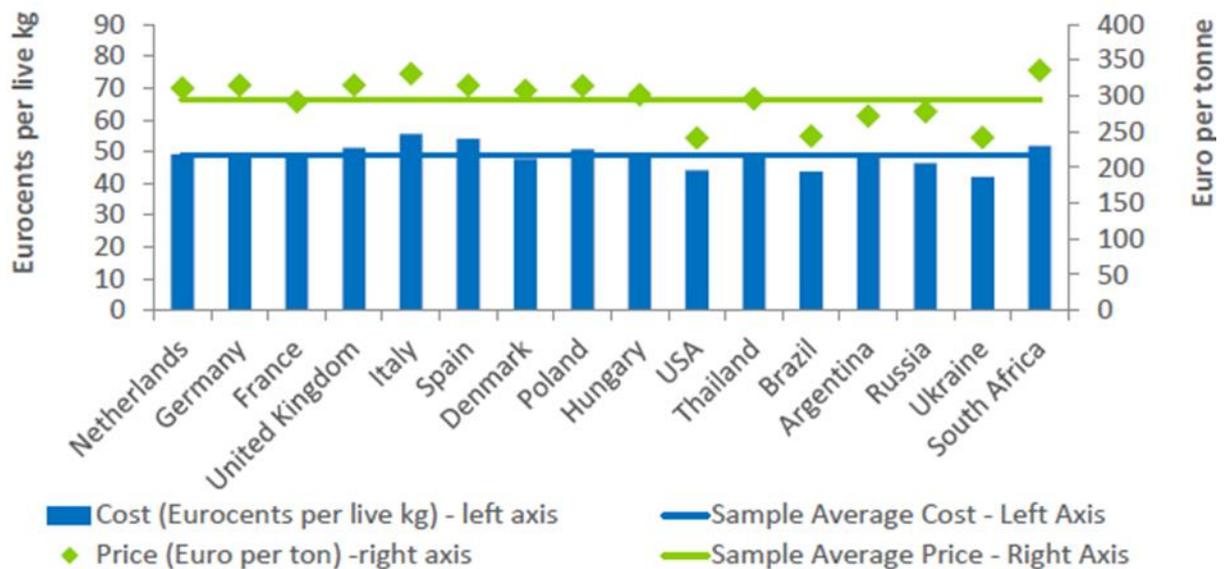
⁷⁷ SAPA represents 1500 small commercial farmers in the broiler sector and more than 40 000 large commercial broilers. SAPA Subsistence and Small Commercial Farmer Report 4Q22018) at page 1.

⁷⁸ Ibid.

⁷⁹ A collaborative report by the Bureau for Food and Agricultural Policy and the National Agricultural Marketing Council 'Evaluating the competitiveness of the South African broiler value chain' (2017) at page 10, accessible at <https://www.bfap.co.za/evaluating-the-competitiveness-of-the-south-african-broiler-value-chain/> last accessed on 18 March 2019.

⁸⁰ Ibid at page 17.

Figure 12: Feed costs in South Africa relative to other leading producers



Source: BFAP Report ‘Competitiveness of the South African broiler industry’ (March 2019)

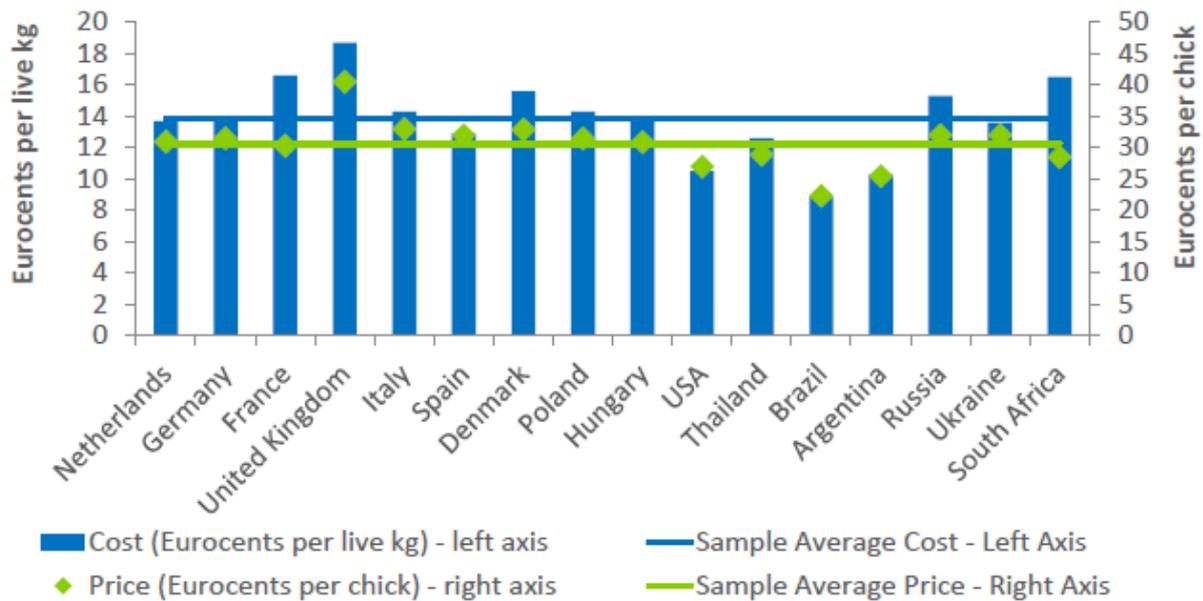
Figure 12 shows a comparative analysis of feed costs across countries in the sample in terms of costs to produce one (1) kilogram (kg) of chicken and the actual price paid for an average ration per tonne. It reveals that, on a cost per tonne basis, feed costs in South Africa are above the sample average. The price of feed in South Africa increased by 5% from 2015 to 2017 (in Euro per tonne). Therefore, the cost of feed must be addressed. SAPA proposed that subsidies from the state may address this problem.

According to EBieSA, in the fourth quarter of 2018, a single day-old chick cost R7.52 and R13.50 in the urban and rural areas respectively.⁸¹ In total, 264 500 chicks were placed per cycle on broiler farms during the fourth quarter of 2018.⁸² **Figure 13** presents a comparative analysis of the costs to produce one (1) kg of chicken and the price paid for a day-old chick across all countries in the sample.

⁸¹ Meeting with EBieSA on 27 May 2019. SAPA ‘Subsistence and Small Commercial Farmer Report’ 4Q2018 at page 6.

⁸² Ibid.

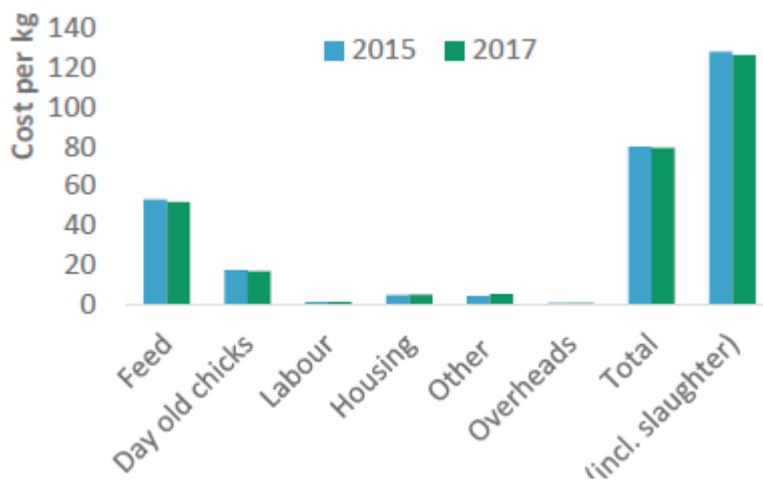
Figure 13: Cost of Day-Old Chicks across jurisdictions



Source: BFAP Report ‘Competitiveness of the South African broiler industry’ (March 2019)

Figure 13 indicates that South African producers pay less than the sample average per chick. However, BFAP finds that if accounting for the lower slaughter weight in South Africa, the costs per chick rise above the sample average. Figure 14 summarises the change in individual input cost components from 2015 to 2017.

Figure 14: Changes in individual input cost components from 2015 to 2017



Source: BFAP Report ‘Competitiveness of the South African broiler industry’ (March 2019)

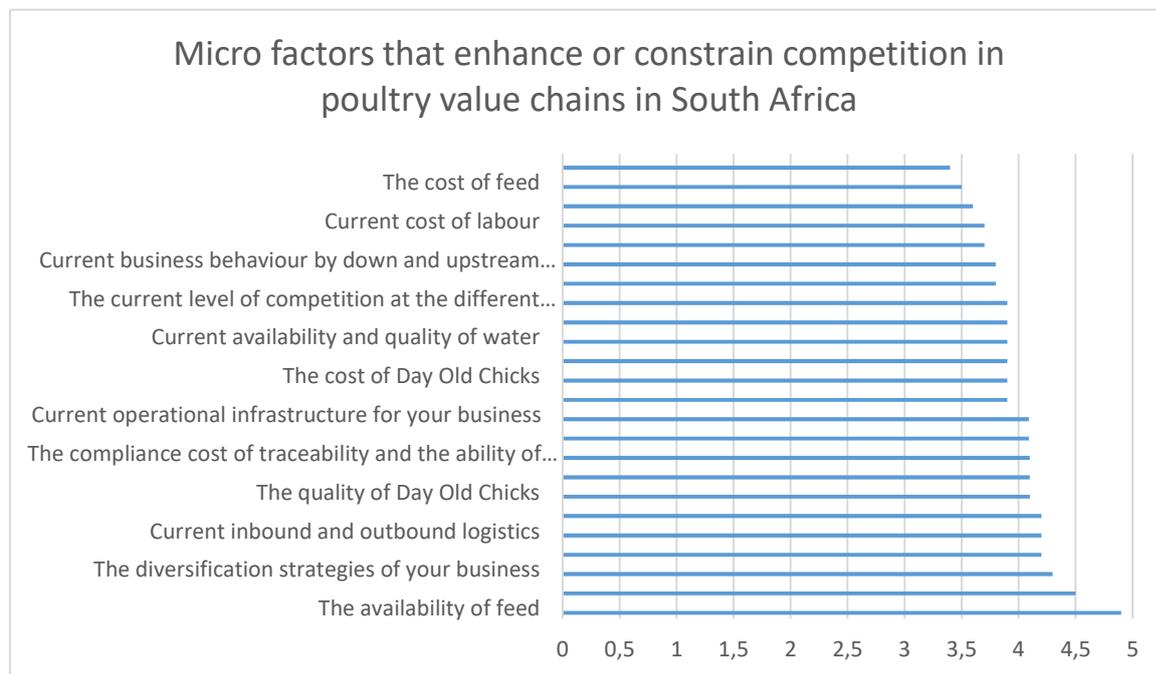
From 2015 to 2017, the change in the cost of producing one (1) kg of chicken can be summarised as follows: feed (-2.3%), day-old chicks (-3.5%), housing (+6.7%), primary production costs (-0.7%). This brings the total change in the production cost to -1.4%.

SAPA indicated that emerging farmers are also not competitive because they do not have access to adequate infrastructure (e.g. chicken houses). New entrants must also access water rights and produce an environmental impact assessment at a cost. The birds are prone to disease thus farmers must bear the cost to vaccinate them.

The authors understand that TIPS is currently performing research on the poultry value chain, which will further systemise these challenges facing the different role players.⁸³ In 2016 NAMC circulated a questionnaire to role-players in various levels of the poultry value chain to determine the factors that enhance or constrain the competitiveness of poultry producers. The critical factors identified as enhancing competition at the micro level include the availability and quality of feed, as well as diversification strategies of the farmers. Conversely, the factors identified as being most constraining to competition are pricing strategies, feed costs as well as the cost and consistency of energy supply. Further details related to the relative importance attached to the different factors are provided in **Figure 15** below.

⁸³ The research study was not available at the time of publishing this paper.

Figure 15 Micro factors that enhance or constrain competition in poultry value chains in South Africa



Source: BFAP Report⁸⁴.

Poor infrastructure (energy, transportation and water supply systems) is a major barrier to the expansion of chicken production, especially in rural areas. A lack of cold storage facilities forces farmers to keep feeding their chickens instead of slaughtering and refrigerating them. They generally transport live chickens to markets, which raises logistical costs and increases concerns over disease transmission.⁸⁵ In addition, some of the processing and feed manufacturing infrastructure are old and inefficient.

The Commission's Interventions

The Commission has in the past initiated complaints against breeding stock and broiler producers and SAPA (including its members).⁸⁶ It focused its investigation on the largest players (Rainbow Chickens, Astral, Pioneer Foods and Country Bird). Subsequent to its investigation, the Commission decided to non-refer the complaints subject to undertakings

⁸⁴ Accessible at <https://www.bfap.co.za/evaluating-the-competitiveness-of-the-south-african-broiler-value-chain/> last accessed on 18 March 2019

⁸⁵ See <https://agribook.co.za/livestock/poultry/> last accessed on 18 March 2019.

⁸⁶ Case no. 2009Apr4389

by the respondents regarding future exchanges of information through SAPA.⁸⁷ In September 2010, following the Commission's animal feed investigation, Rainbow Chickens agreed to a consent order and payment of a R1 million fine. In November 2012, the Commission settled a price-fixing complaint against Astral in the poultry industry. Astral admitted to fixing the price of fresh poultry in the Western Cape. Astral agreed to pay a R16 732 894.47 penalty. In July 2018, the Commission referred to the Tribunal for prosecution two companies (Technical Systems (Pty) Ltd and CGC Industries (Pty) Ltd) which make and supply flat wire, augers and auger coiling machinery to the global poultry feeding market. The outcome of the matter is pending.

⁸⁷ For more information refer to the press release available at <http://www.compcom.co.za/wp-content/uploads/2014/09/Competition-Commission-settles-poultry-case-with-Astral-Operations-2.pdf> last accessed on 19 March 2019.

Case study 7: Red meat

The red meat industry evolved from a highly regulated environment to one that is totally deregulated today. For example, various policies such as the distinction between controlled and uncontrolled areas, compulsory levies payable by producers, restrictions on the establishment of abattoirs, the compulsory auctioning of carcasses according to grade and mass in controlled areas, the supply control via permits and quotas, the setting of floor prices, removal scheme, etc., characterised the red meat industry before deregulation commenced in the early 1990s. Since the deregulation of the agricultural marketing dispensation in 1997, the prices in the red meat industry are determined by market forces. It is also noted that price formation is one of the important forces in making decisions regarding the production and marketing of certain red meat products.⁸⁸

The red meat industry is mainly regulated through the Meat Safety Act, 2000 (Act No. 40 of 2000) which provides for measures to promote meat safety and the safety of animal products, to establish and maintain essential national standards in respect of abattoirs, to regulate the importation and exportation of meat as well as to establish meat safety schemes.⁸⁹

The meat industry consists of several players including, livestock farmers, feedlots, abattoirs as well as meat wholesalers and retailers. In the meat industry, value-added activities include slaughtering, processing and preserving meat.⁹⁰ Livestock remains one of the strategic sub-sectors in agriculture, as the strong output in the sector has contributed positively to the agricultural sector growth over time.⁹¹

⁸⁸ Department of Agriculture, Forestry and Fisheries. 2017. "A Profile of the South African Beef Market Value Chain", page 6. Accessed from: <https://www.nda.agric.za/doaDev/sideMenu/Marketing/Annual%20Publications/Commodity%20Profiles/Beef%20Market%20Value%20Chain%20Profile%202017.pdf> on 17 March 2019.

⁸⁹ Department of Agriculture Forestry & Fisheries. MEAT SAFETY ACT (ACT NO. 40 OF 2000).

⁹⁰ Labuschagne, A, et al., 2010. "A Consumer-Orientated Study of the South African Beef Value Chain". Pg.3. Paper presented at the Joint 3rd African Association of Agricultural Economists (AAAE) and 48th Agricultural Economists Association of South Africa (AEASA) Conference, Cape Town, South Africa, September 19-23, 2010.

⁹¹ Framers Weekly. 2018. "Agriculture takes the lead in GDP growth". Accessed from: <https://www.farmersweekly.co.za/agri-news/south-africa/agriculture-takes-lead-gdp-growth/> on 17 March 2019.

The South African red meat industry has a competitive advantage in international markets, as this due to its high level of product offering differentiation and diversification.⁹² For example, in 2016, South Africa exported 39 000 tons of beef yielding an export value of R2 billion. There has also been a significant increase of about 29% of the quantity of beef exported during the 2015 period as compared to 2014. The export value further showed an increase of 55% during 2015 when compared to 2014.⁹³

South Africa is further estimated to produce 21.4% of the total meat produced in Africa and 1% of global meat production.⁹⁴ Certain commentators argue that the amount of beef produced depends on the infrastructure such as feedlots and abattoirs, not necessarily by the number of cattle available.⁹⁵

There are three major groups of red meat cattle farmers that operate in South Africa as stated below:⁹⁶

- The commercial red meat producer (mostly white farmers) where production is relatively high and comparable to developed countries. Their production is generally based on synthetic breeds and/or crossbreeding.
- The emerging black red meat cattle farmer who own or lease land (Land Redistribution for Agricultural Development beneficiaries). Their cattle generally consist of indigenous crossbred or exotic type of animals.
- The communal red meat cattle farmer who farms on communal grazing land. Their cattle are mostly of indigenous types.

⁹² Agricultural Research Council. 2016. Annual Beef Bulletin. pg. 23 Accessed from: [http://www.arc.agric.za/Economic%20News%20articles/The%20Growth%20Prospects%20of%20the%20SA%20Beef%20Industry%20\(ARC%20Annual%20Beef%20Bulletin,%202016,%20opp%2022-24\).pdf](http://www.arc.agric.za/Economic%20News%20articles/The%20Growth%20Prospects%20of%20the%20SA%20Beef%20Industry%20(ARC%20Annual%20Beef%20Bulletin,%202016,%20opp%2022-24).pdf) on 19 March 2019.

⁹³ Department of Agriculture, Forestry and Fisheries. 2017. "A PROFILE OF THE SOUTH AFRICAN BEEF MARKET VALUE CHAIN", pg. 7. Accessed from: <https://www.nda.agric.za/doaDev/sideMenu/Marketing/Annual%20Publications/Commodity%20Profiles/Beef%20Market%20Value%20Chain%20Profile%202017.pdf> on 18 March 2019.

⁹⁴ Red Meat Research & Development South Africa. Accessed from: <http://www.rmrdsa.co.za/REDMEATINDUSTRY/OverviewoftheIndustry.aspx> on 18 March 2019.

⁹⁵ Department of Agriculture, Forestry and Fisheries. 2012. "A PROFILE OF THE SOUTH AFRICAN BEEF MARKET VALUE CHAIN", pg. 3. Accessed from: <https://www.nda.agric.za/docs/amcp/beef2012-13.pdf> on 15 March 2019.

⁹⁶ Department of Agriculture, Forestry and Fisheries. 2012. "A PROFILE OF THE SOUTH AFRICAN BEEF MARKET VALUE CHAIN", pg. 3. Accessed from: <https://www.nda.agric.za/docs/amcp/beef2012-13.pdf> on 15 March 2019.

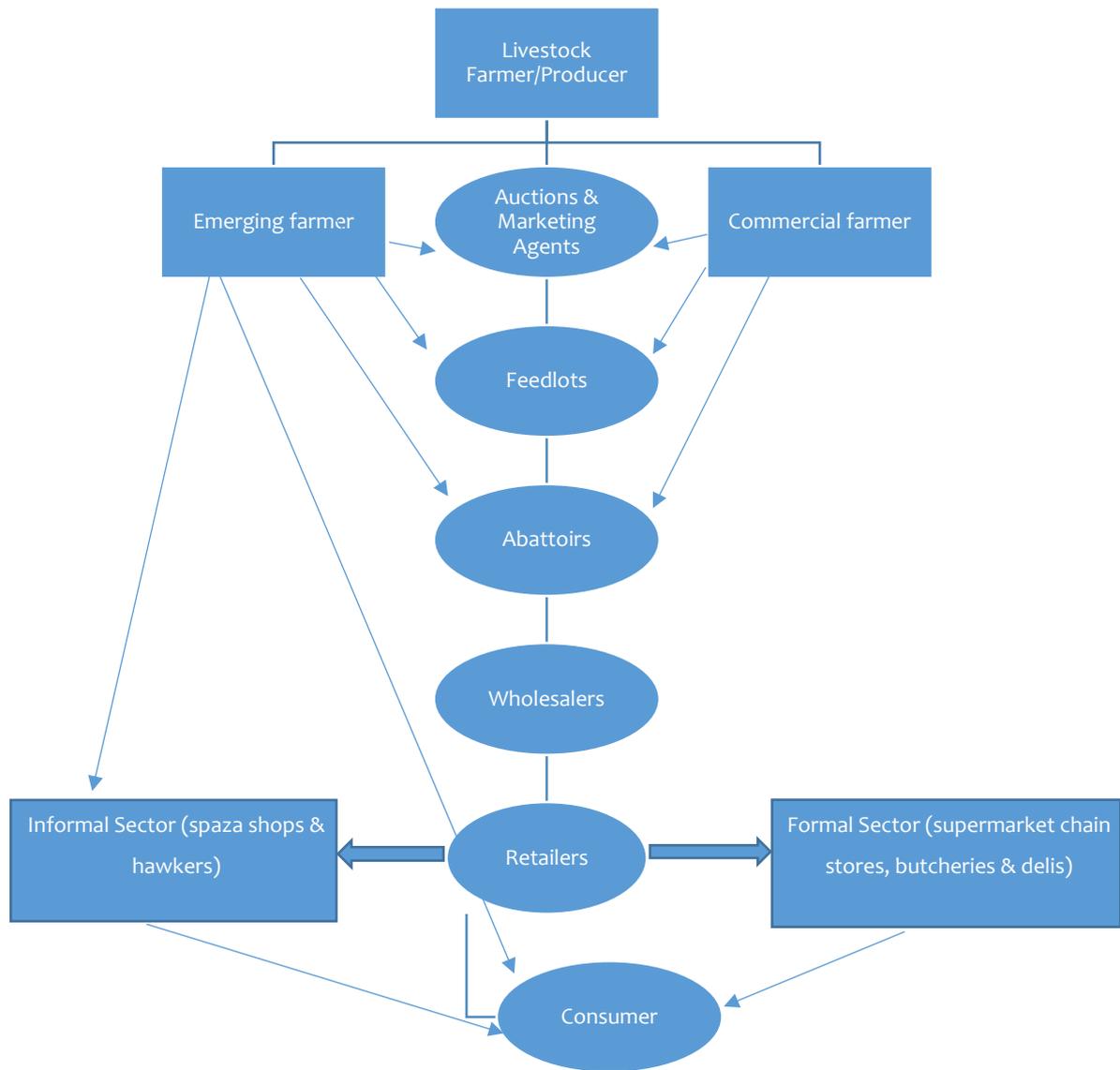
The red meat (e.g. beef) supply chain has become increasingly vertically integrated over time. This integration is mainly fuelled by the feedlot industry where most of the large feedlots own abattoirs, while some have business interests in certain abattoirs. Furthermore, certain feedlots have integrated further down the value chain and sell directly to consumers through their own retail outlets. Some abattoirs have also started to integrate vertically towards the wholesale level.⁹⁷

Under the previous marketing regime, wholesalers mostly purchased carcasses through the auction system. However, currently several wholesalers source live slaughter animals directly from farmers or feedlots on a bid and offer basis, i.e. they take ownership of the animal before the animal is slaughtered. The animal is then slaughtered at an abattoir of the wholesaler's choice, where after the carcass is distributed to retailers. In some instances, consumers can also purchase carcasses directly from farmers, wholesalers and retailers. **Figure 16** below depicts a typical South African red meat market value chain.⁹⁸

⁹⁷ Department of Agriculture, Forestry and Fisheries. 2017. "A PROFILE OF THE SOUTH AFRICAN BEEF MARKET VALUE CHAIN", pg. 22. Accessed from: <https://www.nda.agric.za/doaDev/sideMenu/Marketing/Annual%20Publications/Commodity%20Profiles/Beef%20Market%20Value%20Chain%20Profile%202017.pdf> on 17 March 2019.

⁹⁸ Department of Agriculture, Forestry and Fisheries. 2017. "A PROFILE OF THE SOUTH AFRICAN BEEF MARKET VALUE CHAIN", pg. 22. Accessed from: <https://www.nda.agric.za/doaDev/sideMenu/Marketing/Annual%20Publications/Commodity%20Profiles/Beef%20Market%20Value%20Chain%20Profile%202017.pdf> on 17 March 2019.

Figure 16: red meat market value chain in South Africa



Source: Authors interpretation based on Labuschagne et al (2011:7).⁹⁹

The Commission's interventions

The competition authorities have over the years made interventions in the red meat market through enforcement and merger assessments. In the feedlot sector, the competition concerns have included anti-competitive agreements between competitors as well as the division of markets by the allocation of customers and specific types of goods in

⁹⁹ Labuschagne, 2011, et al. Accessed from: https://repository.up.ac.za/bitstream/handle/2263/19315/Labuschagne_Consumer%282011%29.pdf?sequence=1 on 19 March 2019.

contravention of the Competition Act.¹⁰⁰ Vertical integration is also present in this level of the value chain as some feedlots have linkages with abattoirs, which could lead to restrictive vertical practices to the detriment of other market players and consumers.

The competition authorities' investigations have previously revealed that the majority of competitors operational in the abattoir industry operate on an integrated business model in that they have both abattoir facilities and deboning facilities. In this regard, vertical relationships in the abattoir industry have raised scrutiny from the competition authorities, as this could lead to foreclosure effects of other market players in the value chain both upstream (farmers) and downstream (wholesalers and retailers).¹⁰¹

The coordinated effects in merger assessments have also received attention, as the competition authorities sought to determine the likelihood that firms might successfully coordinate their behaviour or strengthen existing coordinated conduct. The possible competition concerns have related to the history of collusion such as price fixing at which products are purchased from farmers/producers and the sharing of commercially sensitive information between competitors in the industry which may serve to reduce competition.

The research notes that despite these interventions, anticompetitive conduct in the sector persists. This is due to the recurrent complaints in the sector as well as recent contraventions to the Competition Act by market players.

¹⁰⁰ Competition Tribunal. Consent Agreement: Competition Commission vs Karan Beef, Case No. CO168Aug18. Accessed from: <https://www.comptrib.co.za/assets/Uploads/CO168Aug18.pdf> on 17 March 2019.

¹⁰¹ Competition Commission Merger Report: KLK Landbou vs UPT Meat. Case No. 2009Jan4213. Competition Commission Merger Report: Progeny vs Beefcor Case No. 2017Jan0023.

Case Study 8: Access to Logistics

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. Two main areas of logistics are farm to factory (primary freight) and factory to wholesale/retail (secondary freight). Road infrastructure is the backbone of many rural and urban transport systems. Rural transport provides assurance for the supply of the agricultural inputs and facilitates and the delivery of the farm outputs to the markets.

The cost of transport and logistics are important cost components in the value chain and the prices obtained by producers are influenced by transport costs. For many commodities, transport costs can be farmers' second or third highest cost.¹⁰² Larger volumes reduce transport costs per unit.¹⁰³

The focal point of concern from farmers is their ability to reach markets at which their goods will be sold.¹⁰⁴ Farmers need an efficient and cost-effective transport system. This is because the functioning of the transport system affects farmers in getting their products to markets in a timely manner.

The authors note that downstream routes to market are highly influenced by issues of space and distance. In this regard, the emerging farmers have stated that they experience difficulty in transporting their produce from the farm gate for distribution in small towns and rural areas with poor road infrastructure. Therefore, poor rural infrastructure is regarded as a major impediment to the free operation of markets. It also limits market access as logistics companies do not have an incentive to collect products from farmers in areas where there is poor road infrastructure. In this regard, infrastructure improvement and especially improvements in rural transport and roads are necessary to ensure that farmers can transport their products to the retail sector or consumers.

¹⁰² PLAAS Research Report by David Neves and Cyriaque Hakizimana 'Space, Markets and Employment in Agricultural Development: South Africa country report' (June 2015) at page 98.

¹⁰³ Ibid.

¹⁰⁴ The Transportation Problem of Agriculture by Ralph L. Dewey and James C. Nelson, <https://naldc.nal.usda.gov/download/IND43893743/PDF> accessed on 01 March 2019.

Rail network

In the past, rail used to be the major carrier of agricultural goods, however, now this is not the case. For example, a 2011 study on South African infrastructure, when rail was compared with road, indicated that 78% of companies moved less than 10% of their goods by rail.¹⁰⁵ South Africa's rail system is old, on a narrow gauge and is uncompetitive in general freight which places a massive burden on road freight. Emerging farmers do not have access to sufficient effective rail capacity, particularly with respect to bulk commodities such as grain.¹⁰⁶ In this regard, it has been estimated that if adequate rail capacity was available, 17% of companies would move over 50% of their goods by rail.¹⁰⁷

Road network

Emerging farmers are finding that it is expensive to transport their agricultural produce through roads as costs of transportation are higher due to the ever-increasing fuel costs. The increasing transportation costs as a result of lengthy travel distance and rising fuel costs affect categories of farmers such as commercial and smallholder farmers differently. For example, the emerging farmers would not be able to bear the transportation costs because their agricultural businesses may not be profitable as yet when compared to commercial farmers.

Furthermore, the conditions of the roads are stated to be terrible that some transport-sensitive products get ruined on the way to the market that results in losses for the emerging farmers. Currently, in South Africa, emerging farmers also face challenges such as road tolls that need to be paid by the emerging farmers at their own expense.

Barloworld¹⁰⁸ and the Department of Transport¹⁰⁹ indicated that the barriers to entry faced by emerging farmers in South Africa include high transport costs that they incur at their own cost. A way to ensure that the transport costs are reduced is by having emerging

¹⁰⁵ Parliamentary Monitoring Group. Accessed from: <https://pmg.org.za/committee-meeting/13319/> on 20 March 2019.

¹⁰⁶ Grain SA indicated that input suppliers cannot access rural farms due to the poor road infrastructure. It estimates that approximately 85% of grain was transported by rail. Today, this is done by road due to poor rail infrastructure.

¹⁰⁷ Parliamentary Monitoring Group. Accessed from: <https://pmg.org.za/committee-meeting/13319/> on 20 March 2019.

¹⁰⁸ Telecon with Tsatsane Mohale dated 06 June 2019

¹⁰⁹ Telecon with Elaine Botha dated 07 June 2019

farmers coming together to create groups whereby they can transport their fresh produce together, which will reduce their transport costs.

Case Study 9: Access to grain storage facilities

The purpose of this section is to examine the barriers to entry in the grain storage market as a case study. Similar issues may be apparent in other types of storage such as cold storage and seed storage. Therefore, the principles in this case study may be equally applied.

Storage of grain is important because grain can be susceptible to diseases and micro toxins (a cause of cancer) if left on the ground. Emerging farmers largely do not own grain storage silos. This affects the prices of grain produced by these smaller players as they must pay for storage from incumbent providers.

For the bulk storage and handling of grain, a farmer has the following options: deliver the crop immediately to the miller, use silo bags, install their own silos or make use of commercial silos off-farm.¹¹⁰ Farmers mostly store maize at commercial silos off-farm. Each load of maize is presented for delivery by means of a device known as a “Spiroprobe.” The maize is graded in accordance with the national maize grading regulations. Upon delivery, the silo owner issues a delivery note as proof of delivery. The silo owner further processes the maize at the point of delivery. This includes drying, removal of harmful seeds and weighing. Once the maize has been graded it is off-loaded and deposited into a storage bin specifically designed for maize.¹¹¹ Grain SA received funds from the Department of Science and Technology and purchased cages (a fenced structure that is lifted off the ground) for its member farmers to store grain. Sasol has also issued polypropylene bags to its customers to store grain. This demonstrates the type of infrastructure required for a farmer to effectively store grains. There is also a handling tariff and a daily or annual storage tariff levied that must be paid by the farmer.

Agbiz Grain reports that a total storage capacity of about seventeen (17) million tons is currently available throughout the production areas in South Africa for the handling and storage of grains.¹¹² In addition, there are about 2.5 million tonnes of corrugated iron silo.

¹¹⁰ The Agri Handbook for South Africa (2013/2014) Department of Agriculture, Forestry and Fisheries at page 236.

¹¹¹ Competition Commission Report to the National Department of Agriculture (July 2006) ‘Structure and pricing within the Maize Value Chain’ at page 26.

¹¹² Agribook Digital <https://agribook.co.za/farm-infrastructure/grain-storage-and-handling/> last accessed on 28 February 2019. Grain SA estimates a total grain storage capacity of 16 million is currently available in South Africa in addition to a 2.5 million tonne storage capacity in corrugated iron containers. Grain SA is a voluntary non-profit organisation for farmers. It covers maize, wheat,

A cheaper option for storing grain is silo bags which can hold up to 180 tonnes in a bag. Grain SA indicated that it has registered a silo bag depot with the Johannesburg Stock Exchange. The farmer attends on the depot to deposit the grain and in turn receives a receipt which is tradeable with grain purchasers.

Despite this, emerging farmers face barriers to access grain storage facilities. Access to this essential facility is a competition concern because it inhibits the entry and participation of emerging farmers in the sector and affects the quality and price of their grain output. In order to understand the reason for this, it is necessary to reflect on the foundation of this market.

Grain storage pre-1994 and post-1994

The construction of silos began in 1918, in response to the report by the Clark Committee. The silos were built with government financial assistance and through loans offered by Land and Agricultural Development Bank (Land Bank).¹¹³ The cooperatives made an application to the Land Bank to put up the silos. The cooperatives managed these silos with demarcated areas of operation and managed ownership. The cooperatives eventually became agribusinesses (for example Senwes) which now own the silos.

During the 1950s to the 1980s, a bulk storage infrastructure with highly concentrated ownership was created as part of the marketing system for grains and oilseeds.¹¹⁴ Marketing boards were the sole buyers from producers and sole sellers for processing. With the demise of the Boards in 1996, producers were to have several companies bidding for their grains. After deregulation, some large-scale producers established co-operatives (e.g. Grain co-operative). They argued that this would facilitate their access to capital, silos for storage and maintain bargaining power in the marketing of their products.

soya, sunflower, sorghum, ground nuts, canola, oats and barley. A voluntary levy is applicable. "Study group farmers", such as emerging farmers (14 000 are members) are supported through its Farmer Development Programme. They pay R50 annually to become members. Grain SA is currently supporting 12 859 subsistence farmers (those that work on less than 10 hectares), 517 smallholder farmers (between 10 to 50 hectares) and 265 potential commercial farmers (between 50 hectares and 250 tonnes). It also works with National Treasury on the Jobs Fund Project. Farmers have to pay in R3500 to receive R10 000 of input from Grain SA, of which is seed and chemicals. However, these are not able to become commercial farmers because they work on limited hectares and need mechanisation.

¹¹³ Competition Commission Report to the National Department of Agriculture (July 2006) 'Structure and pricing within the Maize Value Chain' at page 26.

¹¹⁴ Competition Commission Policy Brief No. 2 (31 March 2000) 'Should the Competition Commission be concerned about the agricultural sector in South Africa?' at page 3.

According to stakeholders, agriculture is still operating on infrastructure that was created for a very concentrated group of farmers. Post-1994 emerging (black) farmers largely do not own grain storage silos. This has an effect on the prices of grain produced by these emerging farmers because, by the time they need to move the maize into storage, there are no silos so they have to transport it to customers soon after it is processed. The transport costs evade their profitability.

The Commission's interventions in the grain storage market

The Commission has made several interventions over the years in abuse of dominance cases and penalties imposed on firms involved in cartels to address issues of access to storage facilities for new entrants and smaller players in the grain market.¹¹⁵ Despite these interventions, the anti-competitive features of the market persist. Post these interventions, 17 large owners of silos held 94% of the market and Senwes, Afgri and NWK had 74% of grain silo capacity in 2011. Senwes estimates its market share for commercial storage capacity is around 25%.¹¹⁶ The lack of access to grain storage remains a competition concern.

¹¹⁵ The Commission referred complaints to the Competition Tribunal on 20 December 2006 alleging that Senwes had charged differential storage fees which prevented other traders from competing with it. The Commission and Senwes concluded a Settlement Agreement. Senwes agreed to pay a R7 628 670.36 penalty. The Commission also initiated a price fixing case against Grain Silo Industry (Pty) Ltd and 17 firms involved in the grain storage and trading industry on 17 March 2009. The Commission concluded settlement agreements with the respondents.

¹¹⁶ Stephen Greenberg (2017) 'Corporate power in the agro-food system and the consumer food environment in South Africa' at page 477.

7. The research observations

Land and Water Rights

The research has observed that there is an interrelated relationship between land and water rights, as the right to use water is depended on land (e.g. through ownership or leasing). There is, however, lack of effective collaboration between the departments responsible for granting access to land and water, which often leads to the non-alignment of agricultural development programmes. MOUs are in place, but they are fruitless, as they are not enforced by the relevant government departments.

It is recommended that the acquisition and provision of land for farmers be linked to water rights as the current system leads to inefficiencies such as the timeous provision of water rights to farmers due to lack of effective coordination between key stakeholders. The link of water rights to land will propel the DWS and DRDLR to cooperative during early when the farmer applies for these inputs. In this regard, a cooperation framework and policy should be legislated at all levels of the government. This policy for cooperation should clearly set out the accountability, roles and functions of each stakeholder.

The authors further note that the newly constituted DALRRD will purchase farms for the achievement of its land reform objectives. However, the authors' concern is that the DALRRD (like its predecessor DRLRD) will not necessarily ensure that the required technical support is provided to farmers on how to sustain a farming business. DALRRD should focus on fast-tracking the implementation of the land reform programme by ensuring joint and coordinated planning between itself and DWS, as well as other relevant stakeholders – from the three spheres: national, provincial and local. This is to ensure that the farms it purchases for emerging farmers are farmable and can yield positive returns. This will also ensure that there is a continuous consultative process between the key departments during the early stages when farmers apply for water rights to undertake agricultural activities that may negatively affect the environment.

The research also pointed out that South Africa is a water-scarce country and given the challenges of climate change such as droughts, it is recommended that there should be increased investment in water infrastructure and water storage facilities which will expand

water storage capacity and facilitate access to water to new entrants in the agricultural sector.

Stakeholders indicated that DAFF's policies in the agricultural sector are not friendly to issues of environmental affairs. For instance, farmers have a short window to plant during rainfall and cannot comply with payment terms and delays in processing their applications in the circumstances of a drought. The research, however, notes that DAFF's draft Comprehensive Producer Development Support document proposes investment in research and programmes for natural resource management. There is also a need for emergency preparation for and response to extreme weather events and new or improved land use and management practices in the sector, such as the adoption of agricultural practices that preserve and enhance productive capacities of land. This is because certain agricultural activities have an impact on the environment through depletion of natural resources.

The authors acknowledge the government's efforts to improve coordination through the merger of departments responsible for rural development and land reform, and agriculture. However, the coordination excludes departments in charge of water and environmental affairs. It is, therefore, recommended that collaboration between all relevant key departments should be established and regulated through legislative arrangements. In the interim, a committee/joint working group be established to strengthen collaboration while the legislative arrangements are put in place.

Wool

The authors note that wool contamination is one of the barriers faced by emerging farmers in communal areas when marketing their wool, as they do not have access to infrastructure such as shearing sheds. It is recommended that the government considers the development and upgrade of shearing sheds in communal areas where emerging wool farmers are most prominent in the country. This is to ensure that produce (sheep) from emerging farmers can be shorn in a clean and protected environment. The wool can then be classed to acceptable standards and baled (packaged) for transport to the most valuable market.

Shared access to infrastructure and services could also yield some benefits to emerging farmers such as bulk buying of inputs (especially transport), collective marketing in commercial quantities, shared risk and responsibilities and economies of scale in both inputs, operations and output.

Fertilizer

The research reveals the need for more effective regulation in the fertilizer market, which is necessary to tackle market concentration and ensure competitive pricing behaviour among fertilizer producers and distributors and investment towards building local production facilities and transport networks.

In the past Grain SA made recommendations to the government to tackle the competition issues identified in the fertilizer industry.¹¹⁷ It recommended that following the Commission's work of uncovering anticompetitive practices in the fertilizer industry, monitoring of competition within the industry should be a permanent process. It was recommended that the Commission should either continuously monitor the fertilizer industry or help to put mechanisms in place for industry role players to monitor the industry themselves.¹¹⁸ The Commission's interventions have contributed significantly to reducing the barriers to entry in the fertilizer value chain, however, there is a need for increased regulation by government to monitor the pricing behaviour of players in the industry.

The authors have noted the recent publication of amendments to the Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act 36 of 1947, which provides for the appointment of a Registrar of Fertilizers, Farm Feeds and Agricultural Remedies; for the registration of fertilizers, farm feeds, agricultural remedies, stock remedies, sterilizing plants and pest control operators; to regulate or prohibit the importation, sale, acquisition, disposal or use of fertilizers, farm feeds, agricultural remedies and stock remedies and to provide for the designation of technical advisers and analysts.¹¹⁹ These amendments will

¹¹⁷ Refer to the GrainSA Fertilizer Report (2011) page Vii, accessible at <https://www.namc.co.za/wp-content/uploads/2017/10/Value-Chain-Study-of-the-South-African-Fertiliser-Industry.pdf> last accessed on 18 March 2019.

¹¹⁸ GrainSA Fertilizer Report (2011) page Vii, accessible at <https://www.namc.co.za/wp-content/uploads/2017/10/Value-Chain-Study-of-the-South-African-Fertiliser-Industry.pdf> last accessed on 18 March 2019.

¹¹⁹ https://www.environment.gov.za/sites/default/files/docs/remedies_stockremedies_act36_of1947.pdf last accessed on 18 March 2019.

aid effective regulation in the fertilizer industry if enforcement mechanisms are put in place.

The trends show that South Africa is importing increasing amounts of fertilizer on an annual basis to satisfy the local demand. Reliance on imports can have a negative effect on prices and therefore also on producers' ability to produce affordable food for the country.¹²⁰ It is recommended that the government consider mechanisms to revitalize the local fertilizer production industry. As a starting point, it is recommended that the fertilizer market is prioritised by the government or the private sector to channel investment towards building local capacity.

DAFF and The National Department of Transport must initiate a coordinated strategy to build an efficient transport system, as a cost-effective approach to transport ammonia and derivative products. This will increase access and uptake by farmers, including emerging farmers.

Seeds

As noted in the research paper, certain seed markets such as maize are highly concentrated and further, there hasn't been new market entry of seed companies observed over time. In this regard, there is a likelihood that this concentration may lead to anti-competitive behaviour in the sector by incumbent firms to the disadvantage of farmers who require seeds as a critical input. Therefore, there is a need for farmer market support to ensure competitive outcomes are achieved in the sector. Government and industry associations are key stakeholders that should work towards empowering emerging farmers with the necessary support to access quality seeds for them to produce quality output and to be able to compete in the market effectively. Access to finance coupled with market support is, therefore, one of the critical aspects for emerging farmers. The emerging farmers could also buy seeds in groups to obtain favourable prices and to counter the potential market power of large multinational seed companies.

¹²⁰ Ibid.

Agricultural machinery

There are several barriers facing emerging farmers which are related to agricultural machinery. For example, emerging farmers experience challenges of affording and accessing agricultural machinery such as tractors, harvesting tools, processing utensils and basic farm implements such as spades, hoses and water cans. The South African market for agricultural machinery is centred around agricultural tractors as the majority of agricultural machinery demanded is agricultural tractors. In this regard, it is imperative to create avenues for smallholder farmers to become commercially sustainable. These may include an incubation period focused on developing new entrants and creating a productive mindset, education on technology, farming practices and mentorships to support skills development.

Large agricultural machinery manufacturers, such as John Deere, can support initiatives for local production of basic machinery, parts and components. They should also consider producing a range of affordable machinery for emerging farmers. Furthermore, there should be joint ventures with local parties who understand the South African market dynamics. For instance, South Africa did not have local manufacturing capacity for automotive vehicles, but it started with the local manufacture of parts and components which will now evolve to the manufacture of automotive vehicles. This is the same type of trajectory that should be applied in the agricultural sector.

The Government should act as the wholesale purchaser and distributor of agricultural machinery in the funds that they offer, such as AgriBEE, MAFISA and CASP. Furthermore, the government can offer discounts on the machinery that is used by emerging farmers.

Poultry

The industry is concentrated and dominated by fully integrated broiler and egg producers. Access to feed and the cost of feed, access to day-old chicks and the cost of day-old chicks pose barriers to entry for emerging farmers. Emerging farmers also do not have access to adequate infrastructure (energy, transportation and water supply systems).

The government must concurrently build production capabilities with support for investment in capital equipment, new production systems and human resources to build efficiencies and competitiveness along the entire value chain.¹²¹ It must also implement measures to lower the cost of inputs for chicken producers (grains, feed, consistent and affordable electricity supply, and consistent water supply). Stakeholders recommended that farmers organise themselves into groups to share infrastructure as a means to reduce the cost. In addition, agricultural extension officers can be better utilised as a conduit to upskill emerging farmers.

The aim is to assist emerging farmers to contribute a larger share to the national product. A larger number of emerging farmers could be better supported within the informal value chain, where there are opportunities to grow demand, particularly in rural areas, where these smallholder producers typically operate. The BFAP study suggests that in order to revitalise former investments and support emerging chicken farmers to the benefit of both producers and consumers, not all smallholder producers need to deliver into the formal chicken value chain. Development does not necessarily mean 'large scale commercial'. In line with the Agri-parks ideology, the informal sector has a considerable role to play in the development of the rural economy through the production of local food. Optimisation of this chain to improve availability and reduce the cost of inputs (feed and day-old chicks) will narrow the current gap in production costs, allowing a less expensive end-product for consumers.¹²²

Stakeholders recommended that a Presidential Commission of Inquiry is established to unpack the challenges facing emerging farmers in the industry and develop a targeted programme that involves the key role players.

¹²¹ https://www.thedti.gov.za/parliament/2017/SA_Poultry_Sector.pdf .

¹²² A collaborative report by the Bureau for Food and Agricultural Policy and the National Agricultural Marketing Council 'Evaluating the competitiveness of the South African broiler value chain' (2017) at page 7, accessible at <https://www.bfap.co.za/evaluating-the-competitiveness-of-the-south-african-broiler-value-chain/> last accessed on 18 March 2019.

Logistics

Logistics are highly influenced by issues of space and distance. In this regard, the emerging farmers experience difficulty in transporting their produce from the farm gate for distribution in small towns and rural areas with poor road infrastructure. Therefore, poor rural infrastructure is regarded as a major impediment to the free operation of markets.

Transnet and the Department of Transport and Public Works must initiate and build an efficient rail transport system, as a cost-effective approach to transport agricultural products. There should be a strategic approach to allocate funds to transport companies and input suppliers operating on key routes to market.

It is recommended that emerging farmers organise themselves into collective groups to share the cost of logistics. This will allow farmers to reduce transport costs and be able to get their produce to the market. In this regard, Emerging farmers can apply for an exemption from the provisions of the Competition Act.

Grain Storage

The research reveals that emerging farmers largely do not own grain storage silos and this affects their profitability. Emerging farmers in the grain market are not moving forward because they do not have access to finance and title deeds (collateral), which is needed to purchase inputs and infrastructure, such as silos, tractors, planters and fertilizers. Grain storage associations are best placed to leverage their relationships with members to share storage infrastructure with emerging farmers. The research revealed success stories from the transformation initiatives undertaken by GFADA in terms of creating linkages with input suppliers and upskilling of emerging farmers. These include a maize project, where GFADA works with the co-operatives and assists with subsidies, soil correction and sampling and mentorships.

The government also has a role to play. Stakeholders submit that the fragmentation in government across different departments and institutions undermines the implementation of practical initiatives.¹²³ On the issue of infrastructure, some of the stakeholders indicated that it is not a coordination issue, but rather a decision making and implementation issue. The authors submit that in order to implement policy and achieve effective decision-making and pro-competitive outcomes, there must be a coordinated framework of participation between the relevant role players, including government departments, associations and private partners, which outlines their respective mandates and coordinated approach.

The government should unlock access to finance which will allow for the means to purchase inputs and infrastructure. It should build infrastructure geared for emerging farmers near access to transport networks. It is cheaper to deliver grain through rail rather than road. There are railway lines into rural communities where silos are standing on the sidelines of the railways. The research reveals that the lack of an efficient rail transport system is impeding on the transport of grain from these communities. Increased transport costs lead to increases in food prices. Improvements in transport networks and the potential for exports (stakeholders identified potential channels through the Port Elizabeth port) should be a priority of the National Department of Transport and Public Works. It must also be complemented with human resource skills management. However, if the finance issue is not resolved it will serve no use to build silos. Industry stakeholders caution that building silos that are left vacant due to inadequate production and skillset of farmers will not assist. According to stakeholders, agribusinesses and seed companies will install silos in rural areas if there is production.

Furthermore, emerging farmers should organise themselves into collective buyer groups to pool their needs (“bulk buying”), share silo storage and apply for an exemption from the provisions of the Act, discussed later. Industry associations, such as GFADA, train emerging farmers on negotiation skills to achieve cost-effective supply contracts with suppliers. These initiatives must be supported and extend to other types of crops.

¹²³ S Dube, R das Nair, M Nkhonjera and N Tempia ‘Structural transformation in agriculture and agro-processing value chains’ (30 April 2018) CCRED at page 25.

Another practical solution is linking farmers with large producers and exporting companies that already have access to critical infrastructure and international markets. This is called contract farming and requires the participation of private partners in the sector. The government could incentivise large producer-exporting companies to partner with smallholder producers (as has happened in Mexico and China). Large companies can extend technical services and information on production and standards to smallholder farmers. In return, the large companies may be provided with tax breaks, subsidies for investments in storage facilities.¹²⁴

Exemption from the application of the Competition Act

The structural transformation of the sector requires supporting investments along the value chain in productive capabilities, including in inputs and infrastructure such as pack-houses, storage facilities, cold chain facilities, transport and logistics.¹²⁵ Some stakeholders recommended that the government must invest in infrastructure and provide it to farmers at a discounted price. However, some stakeholders indicated that generally contracts with the government are not negotiated at a discount price. Instead, the solution may be for farmers to negotiate collectively.

The research accepts that there may be some need for coordination among emerging farmers in the agricultural sector within a defined framework so that their collective engagements do not fall foul of the Competition Act. Collective farmer groups of this nature are not exempt from the Competition Act. Unless the group meets the requirements and is granted an exemption in terms of section 10 of the Competition Act, it will remain under the scrutiny of the competition authorities in South Africa because its conduct (such as price fixing and the sharing of confidential information of competitors) will fall within the purview of the competition authorities. The group is required to substantiate a ground for the exemption, which may include the objective of promoting the ability of small businesses or historically disadvantaged persons, to become

¹²⁴ S Dube, R das Nair, M Nkhonjera and N Tempia 'Structural transformation in agriculture and agro-processing value chains' (30 April 2018) CCRED at page 26.

¹²⁵ S Dube, R das Nair, M Nkhonjera and N Tempia 'Structural transformation in agriculture and agro-processing value chains' (30 April 2018) CCRED at page 24.

competitive or that the exemption will allow for a change in productive capacity necessary to stop the decline in an industry.

From the standpoint of agricultural policy reform, the issue is not the existence (or market position) of cooperatives but rather their conduct in the market. It is argued that cooperatives should be exposed to the same controls as all firms regarding price fixing, market sharing, output restriction and other anti-competitive practices.¹²⁶ In other words, bulk silo facilities owned and operated by cooperatives must be made available to all potential customers on the same terms.¹²⁷

Contract Farming

Contract farming arrangements for smallholder farmers involve a production contract that is tailored to the type of raw commodity supplied and stipulates the volume of supply, the quality, price and delivery date.¹²⁸ Input suppliers (seeds, fertilizer, finance and transport) should undertake to support the development of smallholder contract farming. They can do this by customising smallholder farmer input packages.¹²⁹ In South Africa, examples of smallholder contract farming are found in the tea, fruit, sugar, flour, cotton, vegetable, timber, tobacco, mariculture and beverage industries.

There is no specific policy to promote contract farming linkages that include smallholder farmers in South Africa's agro-processing supply chains.¹³⁰ Therefore, there is a role for government through policy interventions to implement contract farming projects that will improve the commercial future of small-scale farmers. The policy is required to encourage agribusiness to undertake investment in smallholder contract farming projects.¹³¹

¹²⁶ Competition Commission Policy Brief No. 2 (31 March 2000) 'Should the Competition Commission be concerned about the agricultural sector in South Africa?' at page 4.

¹²⁷ Ibid at page 4.

¹²⁸ S Dube, R das Nair, M Nkhonjera and N Tempia 'Structural transformation in agriculture and agro-processing value chains' (30 April 2018) CCRED at page 3.

¹²⁹ Ibid.

¹³⁰ J Kirsten, K Sartorius, I Kamwendo, M Madola and M Likulunga 'Policy issues for exploiting contract farming as a tool for empowering smallholder farmers in Southern Africa: A case study of South Africa, Zambia and Malawi' (August 2015) accessible at <https://www.fanrpan.org/policy-issues-exploiting-contract-farming-tool-empowering-smallholder-farmers-southern-africa-case> last accessed on 18 January 2019 at page 2.

¹³¹ Ibid at page 4.

The key players in the project would include agribusiness, the government, input suppliers, farmer associations and research institutions. Agribusiness should be the first line initiators of contract farming projects that require the provision of a range of inputs.¹³²

Agribusiness could receive a tax break or subsidy if certain volumes or numbers are achieved with respect to smallholder supply chains.¹³³ A project-by-project approach should be adopted to initiate a contract farming project, through smallholder farmer associations who can act as a conduit for developing the necessary structures and to facilitate coordination among the relevant role players to provide inputs such as land, water and equipment.¹³⁴ The government must develop the necessary legislation to encourage contract farming and facilitate access to inputs such as finance, land and infrastructure.

8. Conclusion on barriers to entry and expansion

In conclusion, the paper finds that there are barriers to entry and expansion facing emerging farmers in accessing crucial inputs and infrastructure in farm agriculture. From the case studies, it is evident that the barriers for emerging farmers persist in accessing land and water rights, although the government is undertaking initiatives to address these challenges. Emerging farmers further face constraints in relation to logistics and agricultural machinery. There are also several barriers observed in the wool market as well as in markets where the competition authorities have previously made interventions such as poultry, fertilizer, red meat, seeds and grain.

Lack of coordination between key departments responsible for water and land rights (title deeds) act as a barrier for emerging farmers, as access to water and land rights are interrelated. Emerging farmers also encounter challenges regarding logistics, such as incurring significant transport costs due to constant fuel price hikes and distance of getting their produce to markets. The cost of imported agricultural machinery due to a weaker local currency and exchange fluctuations is a constraint to effective competition.

¹³² Ibid at page 3.

¹³³ Ibid.

¹³⁴ Ibid at page 4.

Challenges facing emerging farmers in the wool market include access to infrastructure such as shearing shed facilities, shearing equipment and tools as they have an impact on the quality of wool produced. In the red meat industry, there are behavioural barriers as a result of vertical relationships and anticompetitive conduct by incumbent firms in certain levels of the red meat value chain, which could lead to foreclosure effects of other market players both upstream (farmers) and downstream (wholesalers and retailers). The high market concentration in certain seed markets remains a competition concern. The research reveals that the lack of knowledge about seed options which would be best suited for a farm, as well the cost of quality seed is a challenge for emerging farmers.

The barriers to entry facing emerging farmers in the fertilizer market include the escalating price of fertiliser and the concentration of fertilizer producers which strengthens their ability to coordinate their activities and engage in collusive conduct. In the poultry market, the cost of inputs for chicken producers (grains, feed, consistent and affordable electricity supply, and consistent water supply) raise barriers to entry. Emerging farmers still face challenges accessing grain silo infrastructure.

Access to agricultural inputs and infrastructure will be unlocked if emerging farmers have access to finance and linkages to input suppliers are created. The sub-services in the value chain will flow if funds are made available. The research proposes recommendations that, if implemented, can assist emerging farmers to overcome these barriers to entry and strengthen farm agribusiness linkages for the development of smallholder agriculture in South Africa.

-End-