IMPACT OF COVID-19 ON AGRICULTURE AND FOOD IN THE WESTERN CAPE

WORKING DOCUMENT (Version 2)
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1. INTRODUCTION

Over the past couple of days it became clear that, in the face of the Covid-19 pandemic, panic buying by consumers has depleted certain stocks in supermarkets. Specifically popular were toilet paper as well as food with a long shelf life such as cereal products as well as tinned and frozen food. It is evident that this behaviour amounted to stockpiling and that it was driven by the fear that food may become unavailable in certain communities or unaffordable to the average consumer.

What is food insecurity? In their annual SOFI publication of 2019, the FAO indicates that food security exists with “adequate access to food in both quality and quantity (FAO, 2019). The South African Government includes four dimensions which can be used to structure the National Policy on Food and Nutrition Security. These are:

a) Adequate availability of food.
b) Accessibility (physical, social and economic means) of food.
c) Utilisation, quality and safety of food.
d) Stability of food supply (DAFF, 2013).

During its strategic planning process the WCDoA has identified food security and safety as one of the four outcomes which it needs to achieve over the next five years. To this end a causality argument were developed and as part of the problem tree four fundamental causes for food insecurity were identified. These are:

a) Lack of availability
b) Instability
c) Lack of access
d) Poor utilisation.

In order to address these problems, a Theory of Change (TOC), indicating how inputs and activities will lead to outputs and eventually to the desired outcome, were developed. In the process potential output and outcome indicators were also developed (see WCDoA, 2020).

It is clear from these definitions and planning documents that the availability of, and access (including ability to pay) to, food is extremely important for food security. It is exactly this concern, that food may not readily be available or that individuals cannot access food (e.g. due to the lockdown) which has led to the recent bouts of panic buying. However, what is the real situation pertaining to the availability of food in South Africa? How could the outbreak of Covid-19 have an impact on food availability and accessibility in South Africa over the short and medium term? What strategies could be followed to ameliorate these risks? These are some of the questions which will receive attention in this paper.
2. SOME REALITIES OF THE FOOD SYSTEM IN SOUTH AFRICA

In the Introduction of this paper it was highlighted that South Africa has experienced significant bouts of panic buying over the last couple of weeks. However, what is the real situation pertaining to food in South Africa? The purpose of this Section will be to address some of these questions.

South Africa is a surplus producer of food

It is important to note that South Africa is a surplus producer of food with the value of food exports exceeding imports with a significant margin. The main export crops include citrus fruit, wine, grapes, deciduous fruit, maize, etc. and over the last few years the country has become a net exporter of beef. On the import side whiskey is the most important imported product, followed by rice, poultry and wheat (note that products such as rice and wheat are largely non-perishable). Furthermore, large parts of South Africa experienced good summer rainfall and a bumper crop of 15,5 million tons of maize (the 2nd largest maize crop in history) is expected to be harvested this season (harvesting season to start in April). In the winter rainfall area, the harvest of table grapes, stone fruit (e.g. peaches and nectarines) and pears has been completed with only about 15% of the apple harvest still to come and citrus harvesting soon to start. For the rest of the year marketing of fruit will continue from Controlled Atmosphere (CA) cold storage. Volumes of vegetables are also adequate and South Africa became a net exporter of beef a few years ago (BFAP, 2020). It follows that there should be no fear of any shortage of food over the short term.

Global food supply benefitted from a decade-long growth spurt

The global real (deflated) price of food have shown a steady decline over the past decade. Indeed, it is currently at the same level as in the 1960’s and 1970’s (Figure 1).

![Deflated Global Food Price Index from 1961 – 2019 (2002-2004=100)](image)

Source: FAO (2020)
This decline in the deflated price over the past few years is the result of the supply of agricultural products consistently exceeding demand over the past decade. It follows that, at a global level, stocks of food is at a sound level for the immediate future.

**South Africa’s food value chains are complex**

One cannot talk about the sustainability of food availability without paying attention to food value chains. A much simplified model of agricultural value chains can be found on Page 95 of the Department’s Strategic Plan (WCDoA, 2020) and more detailed breakdowns for ten agri-processing commodities are provided in a report commissioned by the WCDoA (see OABS, 2015). A schematic overview of South Africa’s complex value chains is provided in Figure 2 and more details of the discussion underpinning this analysis is available in BFAP (2020c). An analysis of vertical price transmission in two South African value chains was done by BFAP (see Louw et al., 2017).

![Figure 2: Schematic representation of South Africa’s agricultural food supply chain. Source: BFAP (2020d)](image)

In short, it can be stated that the value chains of South Africa’s food production is complex and more often than not there is a strong international interface at both the downstream and upstream parts of the chain. After all, about 66% of the value of the Western Cape’s agricultural production is annually exported and South Africa is traditionally an importer of agricultural technology (e.g. machinery, chemicals, plant material, certain fertilizers). Although own production for own consumption does take place in certain instances, most households in South Africa is dependent on food supplies from the market (formal, informal or social) for household food security. In a comparison between the wheat-to-bread and the maize-to-maize meal value chains, it was found that, although price transmission in the former is more complete than in the latter, price transmission is symmetrical in both instances (i.e. price increases and decreases are passed through the value chain at a comparable rate).
Informal trade plays an important role in food distribution

The importance of the informal sector in the food distribution of South Africa is illustrated by the information in Table 1 and Figure 3. Approximately 50 percent of Cape Town’s population lives in Khayelitsha, Mitchell’s Plan and on the Cape Flats. However, a simple search of the distribution of stores of one supermarket chain (a similar trend is observed from other supermarket chains) reveals that the density of the population does not reflect the distribution of supermarkets. It follows that, although the food distribution systems has developed significantly since the situation analysed by Karaan and Myburgh (1992), the current formal trade does not adequately covers the demand in the less affluent areas of the City of Cape Town.

<table>
<thead>
<tr>
<th>Region</th>
<th>Population</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tygerberg</td>
<td>771,743</td>
<td>18%</td>
</tr>
<tr>
<td>Blaauwberg</td>
<td>255,913</td>
<td>6%</td>
</tr>
<tr>
<td>Northern Region</td>
<td>343,627</td>
<td>8%</td>
</tr>
<tr>
<td>Khayelitsha/Mitchell’s Plain</td>
<td>1,315,281</td>
<td>30%</td>
</tr>
<tr>
<td>Helderberg</td>
<td>255,273</td>
<td>6%</td>
</tr>
<tr>
<td>Cape Flats</td>
<td>853,055</td>
<td>20%</td>
</tr>
<tr>
<td>Table Bay</td>
<td>273,115</td>
<td>6%</td>
</tr>
<tr>
<td>Southern Region</td>
<td>254,024</td>
<td>6%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4,322,031</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Quantec (2020)

The poorest part of society spend the biggest part of household income on food

There is a major inverse relationship between the income of households and food as a share of household expenditure (see Figure 4). It follows that the poorest (Group 1)
spend 40% of their household income on food, whilst the wealthiest (Group 10) only spend 5% on food. It is common knowledge that the lockdown, as a result of the Covid-19 Pandemic, has led to substantial job losses; particularly for those without a regular job and whom are dependent on piecework. The result is that the poorest sections of the South African society will be the most vulnerable to any disturbances as a result of Covid-19. On the one hand they will be the most exposed to any increase in food price/decrease in household income and on the other hand they do not have the means to build any meaningful stock of food.

Furthermore, it should also be remembered that consumers in Gauteng (11%) and the Western Cape (12%), on average, spend a smaller share of their household income on food than in Limpopo and Kwa-Zulu Natal (both 18%) as well as Mpumalanga, North-West and Northern Cape (all 17%) (BFAP, 2020b).

![Figure 4: Consumption spending for South African households in 2020](image)

Figure 4: Consumption spending for South African households in 2020
Source: BFAP (2020b)

From a commercial perspective, it is also fairly easy to negate the importance of poor households. After all, according to BFAP (2020b), the 30% poorest households in South Africa only contributes 13% to total food expenditure in South Africa, whilst the 20% most affluent households contributes 39% to total food expenditure.

**Food items purchased differs according to income level**
It is also important to note that the food items purchased by households differ substantially according to their income level. For instance, whereas chicken is the most important source of animal protein in three of the categories, it is surpassed by beef in the case of affluent households (see Table 2).

**Food production varies according to local conditions**
Of South Africa’s 82.5 million ha utilised by commercial farming, more than 63 million ha (77%) is exclusively dedicated to animal production. Only 9.5 million ha (12%) is suitable for arable farming and 1.5 million ha (2%) is under irrigation. A further 1.3 million ha is utilised by small-scale farming in former homelands (DAFF, 2019). It follows
that it is not strange that South Africa is often classified as one of the driest countries in the world and why the availability of irrigation water is of such crucial importance for food production. The distribution of the area under dryland and irrigated cash crop production, overlaid with the national land capability classes of South Africa, is provided in Figure 5.

Table 2: Dominant food expenditure items for main socio-economic sub-segments in South Africa.

<table>
<thead>
<tr>
<th>Low income households</th>
<th>Lower middle-income households</th>
<th>Upper middle-income households</th>
<th>Affluent households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicken (13%)</td>
<td>Chicken (14%)</td>
<td>Chicken (12%)</td>
<td>Beef (11%)</td>
</tr>
<tr>
<td>Maize meal (12%)</td>
<td>Maize meal (9%)</td>
<td>Beef (9%)</td>
<td>Chicken (9%)</td>
</tr>
<tr>
<td>Brown bread (8%)</td>
<td>Brown bread (7%)</td>
<td>Brown bread (6%)</td>
<td>Milk (5%)</td>
</tr>
<tr>
<td>Rice (5%)</td>
<td>Beef (6%)</td>
<td>Maize meal (5%)</td>
<td>Mutton, lamb (3%)</td>
</tr>
<tr>
<td>Granular sugar (4%)</td>
<td>Rice (4%)</td>
<td>White bread (4%)</td>
<td>High-sugar food (3%)</td>
</tr>
<tr>
<td>Beef (4%)</td>
<td>Granular sugar (4%)</td>
<td>Milk (4%)</td>
<td>Brown bread (3%)</td>
</tr>
<tr>
<td>Edible oil (4%)</td>
<td>White bread (4%)</td>
<td>Rice (3%)</td>
<td>Fish (3%)</td>
</tr>
<tr>
<td>White bread (3%)</td>
<td>Milk (3%)</td>
<td>Granular sugar (3%)</td>
<td>White bread (3%)</td>
</tr>
<tr>
<td>Potato (3%)</td>
<td>Edible oil (3%)</td>
<td>Eggs (2%)</td>
<td>Eggs (2%)</td>
</tr>
<tr>
<td>Milk (3%)</td>
<td>Fish (2%)</td>
<td>Fish (2%)</td>
<td>Maize meal (2%)</td>
</tr>
</tbody>
</table>

Source: BFAP (2020b)

Note: Percentage in brackets indicates share of item in household food expenditure.

Figure 5: Geographical distribution of land capability in South Africa.
Source: BFAP (2015)
It is important to keep in mind that only land classes I, II and III is suitable for dryland crop production with the result that the main crop production areas is by and large concentrated in the South-Western, along the seaboard and in the North-Central parts of the country. The central part of South Africa is only suitable for animal husbandry if no irrigation water is available.

It is further important to keep in mind that the geography, climate and soil conditions determines the envelope of the possible. Or, in other words, determine which products can be produced where. For instance, in the most recent “normal” production season of 2016/17, 42% of South Africa’s maize was produced in the Free State and 19% in North West provinces, whilst in the same year 57% of wheat production was from the Western Cape, followed by 16% in the Free State and 14% in the Northern Cape (mainly under irrigation) (DAFF, 2019). Similarly, apple production is mainly concentrated in the Western Cape Province and the production of table and wine grapes is largely in the Western and Northern Cape provinces. The implication is that, although South Africa is a surplus producer of food, the agricultural production regions in South Africa is largely commodity specific and unequally dispersed over the country. The result is that the transport of food over the country is an inevitable necessity of our food system.

**South Africa’s population is concentrated in particular areas.**

The distribution of South Africa’s population is provided in Figure 6. It is clear that the population densities is the highest in Gauteng, around Cape Town and along the Eastern seaboard of the country.

*Figure 6:* South Africa’s population demographics

Source: BFAP (2020c)
**In summary**

The purpose of this section was to identify a number of important characteristics of the South African food system. It is clear that South Africa is a surplus producer of food, with active export and import of products leading to full range of food being available on the domestic market. At a global level food prices has been declining in real terms over the past decade indicating relatively good production seasons leading to surplus production and stock building. It follows that South Africa has a complex food value chain with the international interface playing a key role at both sides of the chain. Despite the maturity and complexity of this chain, informal traders still play a dominant role in certain areas. It is to remember that the poorest households in our society spend approximately 40% of their income on food, whilst in the case of the most affluent it is only 5%. For this reason it should be no surprise that the food items purchased differ between the various income groups. As climate, geography and soil types differ substantially across the country, its food value chain allows for the distribution of food to areas of demand, which is concentrated in the South-West, North-Central and along the Eastern seaboard. However, it must be recognised that there often are a number of challenges to efficiently and effectively distribute food to deep rural areas.

### 3. HOW COVID-19 IS DISRUPTING THE SOUTH AFRICAN FOOD SYSTEM

The purpose of the previous section was to provide a broad overview of the food system in South Africa. One of the big concerns at various levels is the extent to which Covid-19 (by some called a typical “black-swan”) may lead to a disruption in this food system and, eventually, to challenges pertaining to the availability and accessibility of food to all sections of our society. The purpose of this Section is to highlight some of these disruptions that need to be considered during this debate.

**Bottlenecks at, and closure of, ports**

It has become a general trend for countries to close down the movement of people across borders (international and domestic) and in response to the Covid-19 outbreak. However, whilst borders are closed for human movement, it tends to remain open for the distribution of goods and, in particular, for essential goods such as food.

Nevertheless, despite ports remaining open for goods, in a number of instances the efficiency with which goods are moved via ports has become a problem. This may be the result of voluntary measures (e.g. lockdown and social distancing) or as the result of involuntary realities (e.g. Covid-19 infections may lead to the unavailability of key people and/or equipment).

Following the lockdown, Transnet Port Terminals has reduced its berthing capacity to 30% of normal. This led to a backlog and it could take up to 25 days for one ship to load its cargo in two or three South African harbours. It is evident that this delay has an impact on fruit quality as well as the timing of fruit arriving on export market. The situation has subsequently been ameliorated to an extent, but in Cape Town Harbour only two berths are currently operating and not sufficient containers are coming back
into the system via imported goods. This situation can only be exacerbated with the citrus harvesting season soon to start.

**Disruption of air traffic**
Air traffic restrictions are also one of the first actions taken by a number of governments. Although these restrictions are predominantly targeted at limiting/banning the movement of people, it also have an impact on the movement of goods. As the cargo space of aircraft is seldom fully utilised by passenger cargo, the remainder is normally available for freight.

Due to the high cost (and increasing environmental impact) of cargo being distributed by air, this space is usually utilised by small, light and high value products. In the case of agricultural products, it is normally highly perishable products or products which needs to be in the market at a specific time (e.g. the first product of the season) which are being sent by airfreight.

Over the past few weeks the cost of air freight has increased from $1.80/kg to $3.00/kg. If this is combined with the impact of a weakening Rand, it is evident that export and import of food products by air has become close to unviable and that it will definitely have an impact on the price of high-value imported food products.

**Importing countries prioritising goods**
Although it is not quite common yet, it is foreseen that importing countries may start to prioritise essential goods in order to make the most effective use of scarce natural and human resources. For instance, clearing of fresh fruit and vegetables may receive priority above products with a relatively longer shelf life.

**Farm inefficiencies abroad.**
An interesting development in developed countries is a developing shortage of temporary agricultural labour. The Economist (2020) reported that Germany this year needs approximately 300,000 farm workers from outside its borders which it cannot recruit due to measures preventing the movement of people. France is in need of 200,000 temporary workers over the next 3 months and The Netherlands and Belgium are sitting with similar problems. In Poland a large part of the 1.3 million Ukrainians working on its farms left the country before its borders closed leading to a critical shortage of farm labour.

The lack of farm labour may have a significant impact on European and American agricultural production this summer and it is a trend, with potentially both positive and negative impacts for South Africa, to be closely watched over the next couple of months.

**Disruption of domestic value chains**
It was argued in Section 2 that South Africa has complex food value chains and a whole range of instances could be foreseen which could disrupt these value chains.
Disruption could be caused by technical or social breakdowns and it is not unforeseen that an outbreak of Covid-19 in a particular distribution centre or in a packing shed may lead to a closedown of that particular element of the system too.

Disruption of domestic value chains will have the implication that certain products may be in surplus in particular areas of the country, whilst there may be a shortage of the same products in other parts. Most severely impacted will be products with a high level of perishability. It is important to remember that there is no city or town in South Africa that could be totally self-sufficient in terms of the production of food.

It is also expected that the potential disruption of value chains may have the implication that some of the actors in the value chain will introduce contingency plans as well as investments to limit risk. This may lead to higher levels of mechanisation with subsequent job losses.

**Social unrest**

Over the past few years the number of “service delivery protests” (incidence of social disobedience) has increased and there is no reason why it will not happen again. Social unrest may be triggered by any of a number of eventualities of which some may be protests against the conditions or implementation of the lockdown, (perceived) shortages of basic goods in particular areas or a panic reaction against a localised outbreak of Covid-19.

It is foreseen that social unrest may have a disproportionally big impact on the food supply chain in vulnerable urban areas. Experience during the past few years has shown that it is usually a particular township, which will become a no-go zone with the result that essential services cannot be delivered in such areas. In this instance, it will be food that cannot be delivered to the most vulnerable groups in our society.

From an agricultural perspective, social unrest often occurs in areas close to the main transport routes (e.g. the N2 near Grabouw or the N1 at De Doorns). This, in turn, not only leads to a breakdown in supply chains, but it may also prevent workers reaching farms for crucially important activities. In the same breath general crime and theft on farms may be part of social unrest and at the same time leads to under-investment in farming with associated job losses. This, in turn, will strengthen occurrences of social unrest.

**On-farm outbreak of Covid-19**

To date most of the people testing positive for Covid-19 are living in urban areas and to a certain extent a large number of farms are in the fortunate position that they are natural isolation units. However, over the past few years it has become increasingly common for parts of the workforce living off-farm and in the case of intensive crops farms are highly dependent on seasonal labour being transported in from nearby towns or settlements.

Hence, it is clear that it is not unforeseen for an outbreak of Covid-19 to occur on any particular farm (or amongst its workforce living off-farm) and it is the farms producing high-value products or those in the middle of the harvesting season that are the most
vulnerable. As the structure of farming is by nature an example of small and medium enterprises, such an outbreak may have a limited impact on the system, but it will have a devastating effect on the sustainability of any individual farm. It follows that farms should put contingency plans in place which may include labour-replacing mechanisation over the medium to longer term.

To mitigate risk, and in response to the Covid-19 disaster regulations, it has become common practice for farmer to introduce social distancing and hygiene measures. However, it is important to acknowledge the implementation of these measures come with direct as well as indirect costs. Direct costs would include expenditure on personal protection equipment (PPE) such as masks, hand sanitiser, and even additional transport costs in order to remain within the transport regulations. Indirect costs often result from inefficiencies which had to be introduced to comply with social distancing norms.

**Inability to import key inputs**

Although it is a net exporter of food, South Africa has traditionally been a net importer of farming technology. These technologies ranges from machinery and machine parts, agricultural chemicals (growth regulators, herbicides and pesticides), certain types of fertilizers to packing material and new plant material. The situation has already been experienced where assembly lines for motor vehicles came to a standstill around the world due to the fact that essential electronic parts could not be imported from Asia. This variable may be realised in the instance where the impact of Covid-19 decimates the production of certain products in countries or where production is redirected into the production of alternative products of more immediate importance.

At this stage anecdotal evidence suggests that some key chemicals, equipment and parts are getting scarce. However, the biggest impact will probably only be observed over the medium to longer term as stocks of fertilizer, chemicals and machine parts are depleted. Over the longer-term it will have a definite impact on the replacement of equipment, but it may create the scope for local innovation.

**Lockdown/diversion of production capacity**

Closely related to the previous is the situation where exporting countries may place a ban on the exports of certain products or where production capacity is diverted to alternative use. For instance, this could be the case where either chemicals, electronics or machine parts are diverted for medical use.

This may lead to the situation where production capacity on farms may be influenced negatively. Interestingly, it may create the space for local innovation or where older technology became relevant again.

**Inefficiencies in input supply chains**

Very few farms are totally self-sufficient in their production process. In most instances some form of inputs is required from other farmers (e.g. animal feed, seed, etc.) or from other sources (e.g. services, fertiliser, equipment, etc.). It can be foreseen that these inputs may be available, but it can become difficult to reach farms as a result.
of regulations preventing trade or disease preventing the movement of particular inputs.

As a general rule of thumb, farms with short production cycles (e.g. broilers, feedlots, vegetables) will be more exposed to breakdowns in input supply chains than those with longer supply chains. Similarly, farms purchasing inputs on the spot market (e.g. calves for feedlots) will be more exposed than farms with established input suppliers.

Many farms’ permanent and seasonal labour are being transported in from nearby towns or settlements and for the required production, harvesting and post-harvest handling activities on the farm. Although movement of farm workers are allowed, in practice there are several challenges in the practical implementation, which impact on the number of workers present at the work place, as well as whether they arrive on time at the start of the working day.

**Lockdown leading to job losses**

One of the immediate effects of the Covid-19 outbreak is that a large number of people had to take a cut in income. In certain instances, whole households are left without any income over the short term. Some categories of employment will be able to earn an income from home and in other cases a business may eventually be able to catch up with lost production by working double shifts. Nevertheless, there are a large number of businesses which will not be able to catch up on lost income; after all, one cannot eat two dinners at a restaurant in one night.

The work force without fixed employment arrangements (contracts) are those most severely exposed to job losses due to the lockdown. Employees with fixed arrangements could apply for benefits from the Unemployment Insurance Fund (UIF), be allowed to take special leave or, as last resort, take their (payed) annual leave during the lockdown. None of these options are available to people working on a casual basis. It is unfortunate that a large number of these people are also living in the most vulnerable communities.

**Weakening exchange rate**

South Africa is in the unfortunate position that it was dealt a double blow; the impact of Covid-19, with the associated lockdown, has been exacerbated by Moody’s downgrading of South Africa’s credit rating. Although the USA and Europe is also experiencing fully-fledged outbreaks of Covid-19, the US Dollar (and to a lesser extent the Euro) has traditionally been considered reserve currencies. Gold, which has previously fulfilled a similar role and could have come to South Africa’s aid, has lost its glimmer. The result is that the Rand is currently weakening and it is not sure at what level it will stabilise and whether any recovery will take place.

A weakening exchange rate is a little bit of a double-edged sword. On the one hand it will lead to the situation where exporters will receive better prices for their products. On the other hand costs in the value chain will immediately increase (e.g. shipping, warehousing, etc.) and, over the longer term, the cost of inputs will also increase; particularly in the situation where, over the longer term, the exchange rate may stabilise at substantially lower rates than the levels before the outbreak of Covid-19.
Slowdown in South Africa’s economy
There is little doubt that South Africa’s economy will go into a recession. At this stage the only question which remains is how deep the recession will be and how long it will last.

The main implication of the slowdown is that there will be less money in circulation with the result that consumers will have less money to buy essential goods. Although food is one of the basic human needs, one could probably expect that the impact may be leading to consumption patterns becoming more basic (i.e. moving “downwards” in the hierarchy provided in Table 2). Evidently, the implication is also that the most vulnerable parts of our society will remain longer without the necessary means to purchase food and, in the process, remain dependent on social interventions for longer periods of time.

Slowdown in the global economy
As is the case in South Africa, one could expect a slowdown in the global economy with the same questions pertaining to depth and duration. Furthermore, there may appear to be an inverse correlation between damage to the economy and the extent to which preventative measures (e.g. nature and extent of the lockdown) is implemented.

This slowdown in the global economy may also not be consistent across all countries. For instance, the drop in the oil price will have a significant impact on the economies of oil producing countries in Africa. At this stage Africa is the biggest market for certain fruit cultivars (e.g. Golden Delicious apples) with the result that alternative markets will have to be found.

The result is that there may be a change in demand patterns abroad. Existing markets may be in need of different products and new markets may be developing for existing products or current markets may be closing. In the case of other (non-essential) products (e.g. flowers), demand has all but disappeared and it is not clear how long it will be before the demand for “luxury” products may return.

Changing consumer patterns
It is interesting how Covid-19, and its impacts, are changing in different groups of society. One of the recurring narratives is the “good” of the pandemic on earth, how pollution is disappearing and how earth can “breathe again”. At a practical level anecdotal evidence suggests that people’s eating habits are changing and that more fresh produce (fruit and vegetables) are being consumed; particularly in developed countries. It also remains to be seen how shopping habits may change with an increasing number of consumers now getting used to on-line shopping.

How long this trend may last is unclear, but in future one could expect increased emphasis on environmental concerns pertaining to food products; particularly for exports to traditional markets. This would be most severe in the case of products of animal origin for which no mercy should be expected regarding the application of health and safety regulations.
However, the changing consumer patterns may also have an impact on both the domestic and international markets. It is for the industry to promote the health impact of an increase in the consumption of fresh produce.

**Government failure**

It is expected of government to provide a number of essential services in the food chain from producer to consumer (e.g. food safety regulations). In a number of instances Acts of Parliament designate these functions to government institutions and it may not be delegated to private institutions. In other instances, governments of importing countries demand certification by government officials from exporting countries.

Government officials are not immune to Covid-19 and it is inevitable that key officials will contract the disease. If whole units of essential government services are incapacitated, it may have a devastating effect on food chains. For this reason, it must be expected of every government institution to take the necessary precautionary steps and to have relevant business continuity plans in place.

**South African lockdown**

All indications are currently that the South African “lockdown” will continue beyond 16 April 2020 and extension periods of up to four months are mentioned. At the same time questions are being raised pertaining to changes in the severity of the measures being implemented. For instance, will non-essential industries (wine, cotton, flowers, etc.) be allowed to resume normal operations on the domestic market as well as pertaining to trade or will it continue to be excluded from the economy during lockdown?

The answer to these two questions will have definite implications for the severity of the impact of Covid-19 on the Agricultural Sector and food value chains in South Africa. The longer and more severe the lockdown, the bigger the impact on national and household food security, the economy of the country as well as the ability of farms to operate once the lockdown is lifted.

**Emerging from the lockdown**

Closely related to the previous question is the uncertainty pertaining to how South Africa will emerge from the lockdown. It is difficult to foresee the situation where the President announces on any particular day that the lockdown is over and that life could continue as in the past.

The likelihood is higher for measures implemented under the lockdown to be lifted gradually. The particulars and sequencing of the lifting of these measures will have an impact on the recurrence of a Covid-19 outbreak, the food system of South Africa and the sustainability of the agricultural production capacity of the country.

Producers must plan for a situation where “normal” activities will not commence at once and where labour may not be available for specific tasks. Although the current harvesting season may be completed for a number of industries, the restrictions during
this period may lead to labour shortages for tasks such as pruning which may have an impact on the harvest during subsequent seasons.

**Inconsistent application of lockdown regulations**
The purpose of lockdown is to minimise social contact between members of society and in this way to “flatten the curve”. To this end lockdown regulations have been introduced, but a number of essential services were exempted from lockdown. In normal circumstances any piece of legislation is always open for interpretation and even more so in cases where the text was drafted in a hurry and under pressure; as was the case with the lockdown regulations. It is clear that the scope for interpretation increases the further up the value chain a service is from the essential service or product.

In the end the interpretation of a regulation is left to the official on the ground whom has to make a decision whether a particular activity is allowed or not. The result is wide discrepancies in the application of regulations between different regions. This, in turn, leads to uncertainty which has an impact on economic decisions and it also contributes to wastage of resources.

**Lockdown abroad**
The Corona virus was first reported in Wuhan, China, which became the first epicentre of Covid-19. It subsequently spread around the world with countries such as Italy, Spain and now the United States of America overtaking China in terms of the number of positive cases. There is currently almost no country without any Covid-19 cases and each country determines its own strategy.

Most countries in the world, at some stage or another, implements one or another form of lockdown. The nature of these lockdowns differs in severity and duration between the various countries and the nature and sequencing of emerging from the lockdown is also not consistent. Of particular concern is countries which prevent the movement of essential goods over international borders.

The variety of the nature, severity and sequencing (within and temporal between) of lockdowns between countries will have an effect on the movement of food and essential inputs. The magnitude, severity and duration of each will depend on the domestic needs of each country.

**In summary**
The purpose of this section was to document, describe and anticipate some of the disruptions currently being ascribed to the Covid-19 outbreak. The effects ranges from disruptions of domestic and international supply chains to the failure of production capacity in production units. One should also not underestimate the effects such as job losses and a slowdown in the local and international economy. A key variable which still may have a severe impact is the extent and severity of lockdowns as well as how different countries will sequence the emergence from lockdown. Finally, it remains unclear how the Covid-19 pandemic will impact on next year’s season.
4. THE IMPACT OF COVID-19 ON THE SOUTH AFRICAN FOOD SYSTEM

The purpose of the first section of this working paper was to identify some of the key characteristics of the South African Agricultural Sector as well as of the food system of the country. This was followed by an overview of the disruptions caused by Covid-19. The purpose of the current Section will be to analyse the impact of the Covid-19 outbreak on the food system in South Africa. The relationship between the various disruptions caused by the Covid-19 outbreak and its eventual impact is illustrated in Table 3. Each of these impacts will be discussed in more detail below.

Table 3: Impact on the South African Agricultural Sector of disruptions caused by Covid-19

<table>
<thead>
<tr>
<th>DISRUPTION</th>
<th>Shortage on domestic markets</th>
<th>Long term</th>
<th>Vulnerable communities</th>
<th>Fresh produce wasting</th>
<th>Loss of market share abroad</th>
<th>Shortage of inputs</th>
<th>Falling farms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bottlenecks at, and closure of, ports</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Disruption of air traffic</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Importing countries prioritising goods</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farm inefficiencies abroad</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disruption of domestic value chains</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social unrest</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>On-farm outbreak of Covid-19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inability to import key inputs</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lockdown/diversion of production capacity</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inefficiencies in input supply chains</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Lockdown leading to job losses</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weakening exchange rate</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Slowdown in South Africa’s economy</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slowdown in the global economy</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Changing consumer patterns</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government failure</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South African lockdown</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emerging from the lockdown</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inconsistent application of regulations</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Lockdown abroad</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
**Short-term shortage of goods on domestic markets**

Although most ports around the world are closed to non-citizens, it remains open for goods and, in particular, for essential goods. However, it is clear that some bottlenecks do develop and in a number of instances the availability of containers is of concern. Similarly, as air traffic is curtailed around the globe, the availability of surplus cargo space, normally used by high-value/low volume consumer goods, have dwindled significantly.

Two other potential disruptors, which may have an effect on the short-term availability of food products, have to date not had a significant impact. Domestic distribution channels are functioning efficiently and government agencies remains in place to provide the necessary health and safety certification; albeit with a reduced work force.

To date the only immediate effect of Covid-19 on the short-term availability of food is that “panic buying” has resulted in all products in supermarkets being exceptionally fresh as shelves are restocked with new products. Nevertheless, there are a few instances where specific brands is taking longer than expected to be replenished, but in those cases alternatives are usually available. In one or two instances niche or luxury products have not been replenished yet; normally due to the fact that it is imported and suitable space are not available yet.

One aspect which needs to be closely monitored is the availability of food in rural or remote areas. Certain towns (e.g. Murraysburg and Merweville in the Central Karoo) are not well connected to the food value chain and as a general trend people tend to go to main centres on a monthly basis to purchase food. In other instances, people took the decision to spend the lockdown period in towns which are normally classified as “holiday areas”. In some of these towns, just before lockdown, conditions resembled a situation normally associated with the festive season. The problem is that the food supply chains in these towns are not geared to deal with such an influx of people during this time of the year and shortages may develop. (The situation in vulnerable urban communities will be discussed separately below).

At this stage it is sufficient to monitor the availability of food in the formal retail trade and special attention should be provided to the situation in remote areas.

**Long-term shortage of goods on domestic markets**

The same factors, as pertaining to the short-term, is also relevant to the long-term availability of food on the domestic market. In addition to these short-term factors, a number of other elements need to be considered in order to determine the longer-term impact. At this stage no major shortages has developed which will have an influence on the availability of key farming inputs.

Of concern is that, as some elements of most electronic components gets imported from Asia, it is increasingly becoming difficult to get hold of more sophisticated equipment. At the same time some instances have been reported where irrigation equipment could not be obtained due to a specific interpretation of the lockdown
regulations. These shortages may have a negative impact on the ability of the Agricultural Sector to provide an adequate food supply over the long term (it may disrupt the planting season).

Another element which needs to be considered is the status of Covid-19, and associated measures, in countries supplying South Africa with key food products. Of particular relevance is products such as rice (Thailand) and chicken (Brazil). Furthermore, the weakening exchange rate may have a negative impact on the price of imported food products and to this end food price inflation needs to be monitored.

At this stage there are not yet any major concerns pertaining to impact of Covid-19 on the long-term availability of food in South Africa. However, it will be important to monitor the continued import of key inputs into the agricultural production process as well as the continued trade in food products for which South Africa is dependent on imports.

**Food insecurity in vulnerable communities**

Although is clear that the lockdown regulations has been observed with various levels of efficiency in some of the most vulnerable communities of South Africa, no serious outbreaks of social unrest has been observed to date. However, this situation may change as the lockdown continues and the situation needs to be monitored on a continuous basis. The result is that food value chains continue to operate as efficiently as could be expected under the circumstances.

Accurate data is not available, but one can state without doubt that a lot of wage earners has lost their income over the past few weeks. It is clear that the South African economy will also be hit hard with the result that it is not certain how long it will take before the economy recuperate enough to be able to re-absorb those whom has lost their jobs.

To this end the right approach is being followed by creating a range of measures to support the most vulnerable in society. This ranges from making UIF benefits more accessible as well as introducing direct and indirect measures to make food available.

However, bigger emphasis could be placed on introducing some form of voucher or food coupon system. This would ensure that existing food distribution systems are utilised with as little as possible disruption of markets. It will also diminish the role of government in the economy.

**Wasting of fresh produce**

It could be expected that any disruption in the complex value chains of the Agricultural Sector will inevitably lead to wastage of fresh produce. This could either be in the form of the inability to complete harvests, bottlenecks developing at the sea and air ports of the country, instances where importing countries refuse to unload products or where a slowdown in the domestic or international economies mean that products are not reaching retail outlets.
To date no serious cases has been observed where fresh produce has gone to waste. Although there are a number of challenges (e.g. bottlenecks in Cape Town harbour and shortages in certain types of containers) fresh products appears to be flowing as good as could be expected under the circumstances.

The only exception to this observation is in the cut-flower industry where the transport and sale of fresh flowers are not considered to be an essential good. However, it must also be recognised that the demand (international and local) for flowers has declined to close to zero over the past couple of weeks. This situation can be traced back to changes in spending priorities of consumers due to Covid-19. Although flowers are not being considered to be a food product, it does make a contribution to the cash flow of some farms. This may have an indirect impact on food security.

The expectation is often raised that “surplus food” should be donated to communities/households in distress. This would indeed be a worthy cause to pursue, but it must be remembered that the food comes at a cost. Even harvesting and transporting food to a central point will not be for free and for this reason it will be important to consider mechanisms to cover (part of) the costs incurred by farmers. However, it must also be stated that it will be to the detriment of the long term social sustainability of the Agricultural Sector if huge quantities of agricultural products, fit for human consumption, would be seen to be wasted during a period of crisis such as currently being experienced.

**Loss of market share abroad**

One of the biggest long-term challenges which the South African Agricultural Sector will face is if it loses market share abroad. As it will sow doubt on the reliability of South African supply, it will be particularly difficult to regain lost market share in those instances where South Africa’s competitors could maintain their exposure in markets abroad.

Lost market share may be the result of bottlenecks in distribution channels as well as instances where the purchasing patterns of consumers are changing. It may also be the result of government failure (lack of capacity to certify exports) or as a direct result of lockdown regulations by the South African government. Another possibility may be that the authorities in importing countries may have different priorities with the result that imported products are not allowed into particular countries.

Due to the fact that alcoholic beverages were not classified as an essential good, the Wine Industry is currently running the biggest risk of losing market share abroad. The flower and wool industries are running similar risks, but their risks are ameliorated by the fact that the global market for flowers are close to non-existent and China, as the main market for South African wool, is only slowly coming out of its own lockdown.

For the immediate future the situation pertaining to the Wine Industry need to receive close scrutiny.
**Shortage of farming inputs**

Although South Africa is a net exporter of agricultural products, it is at the same time a big importer of agricultural technology. This is also the case of the Western Cape where roughly 66% of the value of agricultural production is exported. Imports of farming inputs ranges from agricultural chemicals, fertilisers, micro nutrients, plant material and machine parts at both the level of primary and secondary production. Also included are essential services necessary for agricultural production.

Disruption of the availability of essential inputs could be the result of disruption in supply chains on the one hand or exporting countries not allowing essential goods to leave their shores. It could also be foreseen that domestic inefficiencies (e.g. a shortage of animal feed or plant material from nurseries) could lead to essential farm requisites not being available or that changes in the exchange rate would make it impossible to obtain certain inputs.

At this stage anecdotal evidence suggests that shortages of certain chemicals and equipment are developing. This will not necessary have an impact on the current availability of food, but it may have an impact on preparations for the next harvest. Over the medium to long term this will be exacerbated by the weakening exchange rate potentially playing a major role in the availability of farming inputs. It follows that it will be important to closely monitor imports of key inputs required to plant the crops for the next season.

**Failing farms**

One of the biggest threats which will have an impact on the availability of food in South Africa is when primary and secondary production facilities are starting to fail. Failing may be either in the form of financial ruin or as a result of certain technical issues.

From a financial perspective, it is clear that the majority of the trends and effects of Covid-19 will have some or other impact on the financial viability of farms. As it is a given, it will not be discussed in more detail.

From a technical perspective it can be foreseen that social unrest or an on-farm outbreak of Covid-19 may lead to essential staff not being available to run the farm. Another matter may be the unavailability of key farming inputs (discussed above) or a situation where a slowdown in the South African economy would deal a deathblow to individual farms. Over the longer-term, it will be an important challenge for farmers to ensure that there will be a continuing demand for their products.

At this stage the biggest threat to farming remains from a financial perspective. It follows that the financial health of farms need to be monitored and, in instances where private financial institutions may not be able to provide any more support, government will have to investigate alternative measures. A range of measures from various private and public entities are available, but new and more intrusive measures may need to be introduced if a number of farms fails at the same time.
5. SUMMARY AND CONCLUSION

The purpose of this working paper was to investigate the immediate and long-term impact of Covid-19 on the Western Cape Agricultural Sector as well as on Food supply systems. The introduction provided an overview of the main components of food security whilst the second section highlighted some key characteristics of the South African Agricultural Sector as well as food demand in the country. This was followed by an analysis of the trends or effects which may be observed as a result of Covid-19 after which the impact of these were discussed. In the process seven key impacts were identified which needs to be monitored. A summary of these can be found in Table 4.

Table 4: Status of Covid-19 impact on the Western Cape Agricultural Sector

<table>
<thead>
<tr>
<th>IMPACT</th>
<th>STATUS</th>
<th>ACTION REQUIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-term shortage of goods on domestic markets</td>
<td>Green</td>
<td>Monitor availability of food in rural areas and especially in remote communities.</td>
</tr>
<tr>
<td>Long-term shortage of goods on domestic markets</td>
<td>Green</td>
<td>Monitor imports of farming inputs as well as food price inflation of imported products.</td>
</tr>
<tr>
<td>Food insecurity in vulnerable communities</td>
<td>Yellow</td>
<td>Provide direct and indirect assistance to the most vulnerable households.</td>
</tr>
<tr>
<td>Wasting of fresh produce</td>
<td>Green</td>
<td>Monitor the status of fresh produce and put mechanisms in place to acquire “surplus” food.</td>
</tr>
<tr>
<td>Loss of market share abroad</td>
<td>Green</td>
<td>Monitor the export status of the Wine Industry and support relevant initiatives.</td>
</tr>
<tr>
<td>Shortage of farming inputs</td>
<td>Yellow</td>
<td>Monitor the availability of imported farming inputs as well as domestic input supply chains. Industries and importers/suppliers coordinate bulk purchase of essentials.</td>
</tr>
<tr>
<td>Failing farms</td>
<td>Green</td>
<td>Monitor the financial and technical health of farms.</td>
</tr>
</tbody>
</table>

Finally, it is important to note that the Covid-19 pandemic does not only have potentially negative outcomes for the Agricultural Sector. On the one hand it has highlighted the importance of sustainable food production for the long term sustainability of our country. This message should be strengthened and used to ensure continued support to the Agricultural Sector.

At the same time it may also create opportunities abroad. There is a clear change in consumer patterns, which may result in a higher demand for fresh fruit and
vegetables; at the core of the Western Cape Agricultural Sector. We should also not ignore the fact that farms in our main export markets are experiencing a number of challenges which, in turn, may create opportunities for local producers.
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