



***THE IMPACT OF COVID-19 IN THE AGRICULTURAL SECTOR AND
THE SKILLS IMPLICATION THEREOF***

Abstract

Agriculture plays a significant role in the economy, employment and food security. The COVID-19 pandemic has affected not only the agricultural sector but all the sectors across board. Furthermore, the pandemic is a global crisis thus research has shown that COVID-19 poses a threat on human health and the economy. It is against this background that this research was conducted to investigate the impact of COVID-19 and the skills needed in the agricultural sector due to COVID-19. This study was conducted in South Africa and the following sub-sectors were included the research, namely Red Meat, Fibre, Seed, Poultry, Sugar, Aquaculture, Horticulture, Milling, Pet Food and Animal Feed, Grains and cereals and Pest control. The method of sampling used was a non-probability technique which involved convenience sampling. The data collected resulted in a total number of 100 stakeholders that responded to the survey. Moreover, the results of this study demonstrated that COVID-19 had a negative impact on a substantial proportion of the respondents whereas only 10% of the respondents were not affected by the spread of the virus. In terms of marketing 58% of the respondents could not market their produce since the national lockdown was implemented as means of flattening the curve of the spread of COVID-19. The results further analysed the employment in the sector, job losses due to the pandemic were as follows; 77,9% were from the small size organisations 21,6% were from medium size organisations and only 0,5% were from large size as the involuntary consequence of COVID-19. The research findings also showed that health and safety was identified as a vital skill in the agricultural sector related to COVID-19 as 31 % of the respondents listed it as an emerging skill, whilst 22,9% of the respondents listed it as priority skill and 22% of the respondents listed health and safety as top-up skill needed in their organisations.

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Acronyms

Acronym	Description
COVID-19	Coronavirus Disease 2019
GDP	Growth Domestic Product
ICT	Information and Communication Technology
SARS	South African Revenue Service

1. Background

COVID-19 is taking its toll on the world, causing deaths, illnesses and economic dejection (World Bank, 2020). Beginning of December 2019, cases of pneumonia with an unknown cause were reported at the World Health Organisation office in China (WHO, 2020), The pathogen that causes the viral pneumonia was identified as coronavirus known as severe acute respiratory syndrome–coronavirus 2 (SARS-CoV-2) in January 2020, (NICD,2020).

As of 6 March 2020, globally 98 192 cases have been detected and confirmed in 87 countries; in the mainland Africa there were 19 confirmed positive cases COVID-19 and only one positive case of COVID-19 was confirmed in South Africa (WHO,2020). Soon after, the first positive case was detected and confirmed, the number of COVID-19 cases had risen to 61. With continuously rising numbers of confirmed cases the President of South Africa, Mr Cyril Ramaphosa, declared a national state of disaster (SA coronavirus, 2020). As the unintentional consequence of the epidemic the President announced a 21-day national lockdown and declared number of regulations to be put in place during the lockdown (SA government, 2020).

The lockdown regulations imposed permitting only essential business to operate and travel restriction by closing borders except for the transportation of food and essential goods; social distancing was practiced by restricting movement, banning events and gatherings except for funerals and closing of public places as well as schools and universities. Additionally, liquor and tobacco movement and sales were prohibited (SA coronavirus, 2020).

The widespread of COVID-19 pandemic has changed the business environment for many organizations around the world, and has highlighted the importance of being able to adapt and set up crisis management in order to survive situations of uncertainty (World Economic Forum, 2020). From past pandemics that the world has experienced, it has been shown that quarantines have an impact on human activities and economic growth; but, the effect also occurs in agricultural activities (Siche, 2020). However, alarmed by a potential rise in food insecurity during the COVID-19 pandemic, many countries are increasing special efforts to keep agriculture operating safely as an essential business (World bank, 2020). Correspondingly, with other countries South Africa declared agriculture as essential business and it is spared from the lockdown regulations (SA government, 2020).

Although the Agricultural sector was exempt from the regulations, not all sub-sectors were operational during lockdown level 5, sub-sectors such as the horticulture (winery and ornamental), tobacco and wool amongst others were prohibited from operating (Agriorbit, 2020). Notwithstanding that other agricultural sub-sectors were not operational during lockdown level 5, the agricultural sector had a positive contribution

to the GDP in the first quarter of 2020 as it contributed 0,5% to the GDP (Stats SA, 2020).

The imposed lockdown took a toll on food producers, with hotels and restaurants closed they face large losses on perishable and nutritious food as buyers have become limited and consumption patterns shifted and (World bank, 2020 and Economic time, 2020). It has been reported that the fresh food producers have experienced cancellation of orders from industry outlets (Floral daily, 2020) which could be due to banned events and gathering as well as transportation line shutdowns and the demand for high-end meat cuts has dwindled to the point that some feedlots are not buying-in cattle. In addition, border closures and movement restrictions are intensely impacting farmers' access to inputs like seeds, fertilizers and agrochemicals (WFO, 2020) and without seed, fertiliser and crop protection harvesting will stutter and the next harvest will fail (Spratt, 2020).

In addition to assessing the impact of COVID-19 on food access, production and economic performance of the agriculture sector as a catalyst for food security, the contribution of COVID-19 among other factors on the decrease of employment in the sector also need to be observed. In the fourth quarter of 2019 agriculture employed 885 thousand people, however, 21 000 jobs were lost in the agriculture sector in the first quarter of 2020 (Stats SA, 2020).

In an attempt to understand the turmoil effect of COVID-19, AgriSETA commissioned a study with an aim of investigating the impact of COVID-19 on the agricultural sector and the skills implications thereof. Moreover, the study looked at emerging skills, priority skills, and top-up skills as a results of COVID-19. Thus, the report presents the finding of the research study.

2. Problem statement

Several reports indicates that agriculture plays a significant role in reducing poverty and food insecurity (SA government, 2020; FAO,2016 and DAFF, 2011) and agriculture offers employment and opportunities for sustaining livelihoods (Lestrada-Jefferis, 2000). Due to the role that the agricultural sector play in South Africa, the sector was deemed as essential service during the national lockdown. However, reports shows that other sectors experienced a lot of challenges due to the outbreak of the pandemic, therefore AgriSETA took initiative to look at the impact of COVID-19 on the agricultural sector and the skills implications. It was crucial for AgriSETA to undertake this study for the skills interventions offered by AgriSETA to remain relevant.

3. Aim

The aim of this study is to investigate the impact of the of COVID-19 pandemic and skills needed on workplace in the agricultural sector.

4. Objective

The objectives of the study were:

- I. To determine the impact of Covid-19 on the agricultural sector.
- II. To discover COVID-19 skills implications in the agricultural sector

5. Material and methods

5.1. Data collection

The data was collected through online survey on google forms between May and June 2020. AgriSETA stakeholders were sent a link via email and short message service (SMS) to complete the online survey.

5.2. . Data Population

A total of number of 102 AgriSETA stakeholders participated in the online survey that was shared with the agricultural industry bodies. The respondents covered all nine provinces of South Africa namely Eastern Cape, Free State, Gauteng, KwaZulu-Natal, Limpopo, Mpumalanga, North West, Northern Cape and Western Cape. The following sub-sectors were represented in the survey: Red Meat, Fibre, Seed, Poultry, Sugar, Aquaculture, Horticulture, Milling, Pet Food and Animal Feed, Grains and cereals and Pest control.

5.3. Sampling

The sampling method used was convenience sampling, as the study depended on the willingness of the stakeholders to participate. Etikan (2016) describes convenience sampling as a type of nonprobability or non-random sampling where members of the target population that meet certain practical criteria, such as easy accessibility, geographical proximity, availability at a given time, or the willingness to participate are included for the purpose of the study.

5.4. Data analysis

Data was analysed using Microsoft excel 2016.

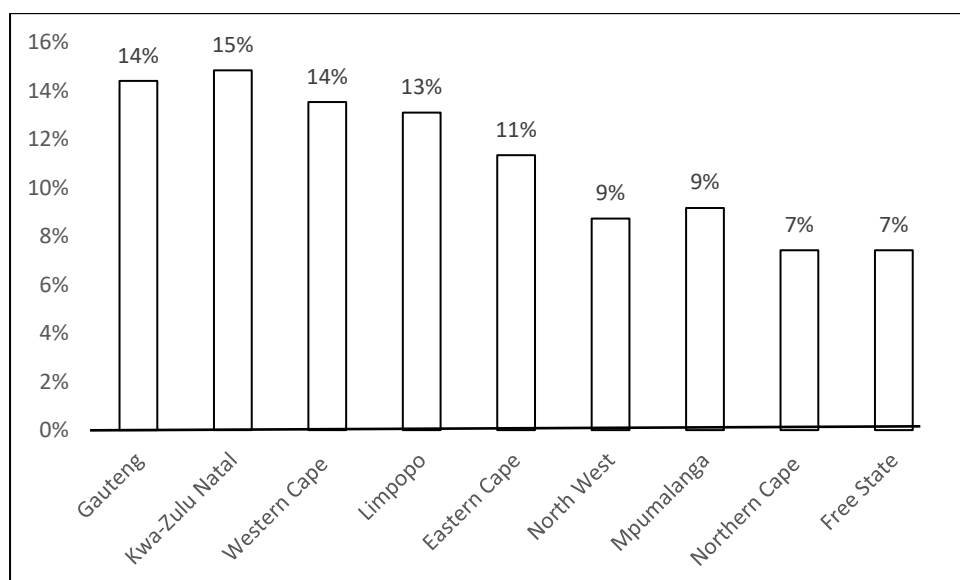
6. Results and discussion

6.1. Demographic information

6.1.1. Provincial distribution

Figure 1, illustrates provincial distribution of organisations that participated in the study. The results show that Kwa-Zulu Natal (15%) had the highest percentage of participants followed by Western Cape and Gauteng (14%) and Limpopo (13%), however Free State and Northern Cape (7%) had the least percentage of participation.

Figure 1: Provincial distribution of the respondents

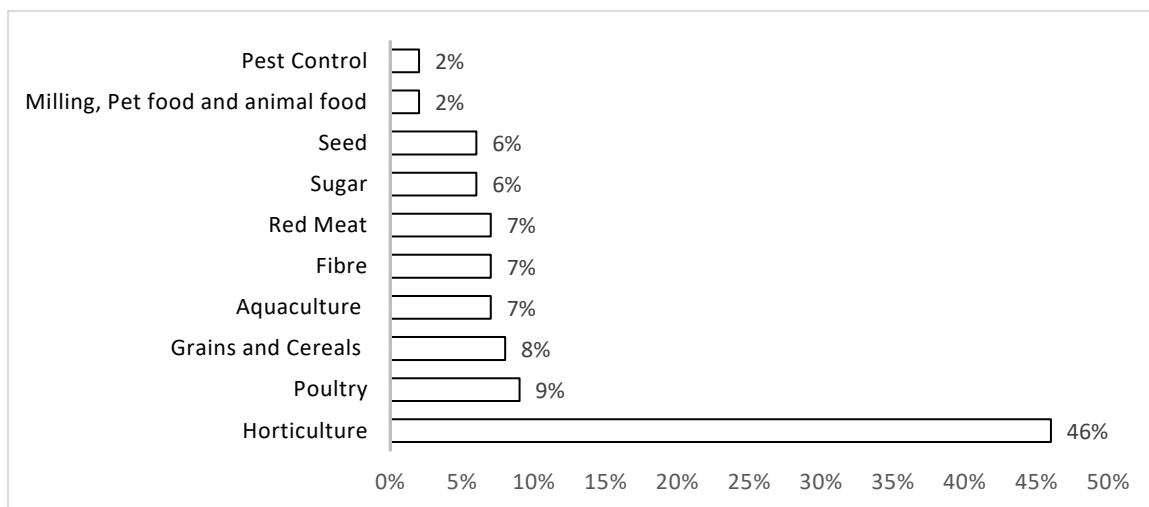


6.1.2. Sub-sectors analyses

Agricultural sector has 41 sub-sectors that are categorized according to their agricultural and economic focus. However, AgriSETA grouped the 41 sub-sectors together and formed these 11 sub-sectors namely: Red Meat, Horticulture, Grains and Cereals, Fibre, Poultry, Aquaculture, Milling, Pet Food and Animal Feed, Pest Control, Seed, Sugar and Tobacco. The results show that of the 11 sub-sectors only 10 sub-sector participated excluding Tobacco sub-sector. The reason for not participating might be attributed to the fact that the subsector (Tobacco) was not allowed to operate during the national lockdown. Horticulture (46%) sub-sector had the highest percentage of participants, followed by Poultry and Grains and Cereals sub-sectors,

however Pest Control and Milling, Pet food and animal feed (2%) sub-sectors had the least percentage of participants as illustrated in figure 2.

Figure 2: Participation per sub-sector



6.2. Impact of COVID-19

6.2.1. Organisations affected by COVID-19

The results show that of the organisations that participated on the study, 90% were negatively affected during lockdown level 5 and only 10% of the respondent indicated that they were not affected by COVID-19 as illustrated in figure 3. Furthermore, table 1 indicates that of the respondent that were negatively affected by COVID-19, the majority were representing Horticulture sub-sector (47%), followed by Poultry (10%) sub-sector, on the other hand Pest control and Milling, Pet Food and Animal Feed had the least percentage of respondents that indicated that they were affected by COVID-19. Restrictions of alcohol sales and movement as well as prohibiting ornamental industry from operating during the national lockdown, as they were listed as non-essential services, could be the reason for the high percentage of Horticulture entities that indicated that they were negatively affected.

Figure 3: Organisations affected by COVID-19

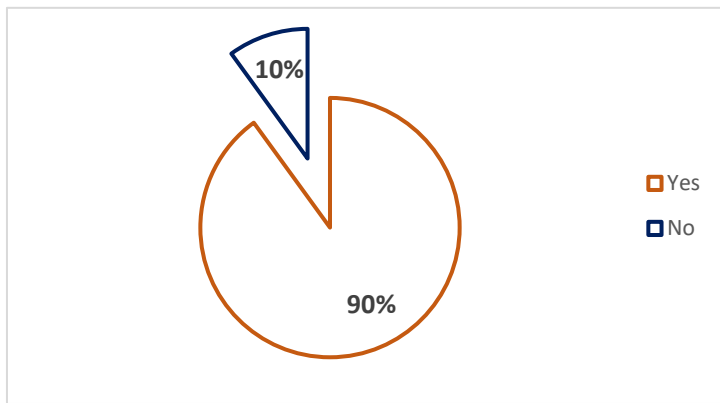


Table 1: Sub-sectors affected negatively by COVID-19

Sub-sector	Percent
Horticulture	47%
Poultry	10%
Grains and Cereals	8%
Fibre	8%
Sugar	7%
Red Meat	5%
Aquaculture	7%
Seed	5%
Pest Control	2%
Milling, Pet food and animal food	1%

6.2.2. Impact of COVID-19 on marketing activities

Enterprises are typically classified in different categories; in this study they are classified according to number of employees. Small size enterprises employ 10 to 49 employees, medium size enterprises employ 50 to 149 employees and large size enterprises employ 149 or more people. Figure 4 shows that of the organisations that participated in this study, 58% could not market their produce/products during lockdown and only 42% were able to market their produce. Of the total organisations that could not market their produce/products, 83,3% were small size enterprises, followed by large size enterprises (13,3%) and medium size enterprises (3,3%) as illustrated in figure 5.

Figure 4: Overall organisations that could not market their produce/products

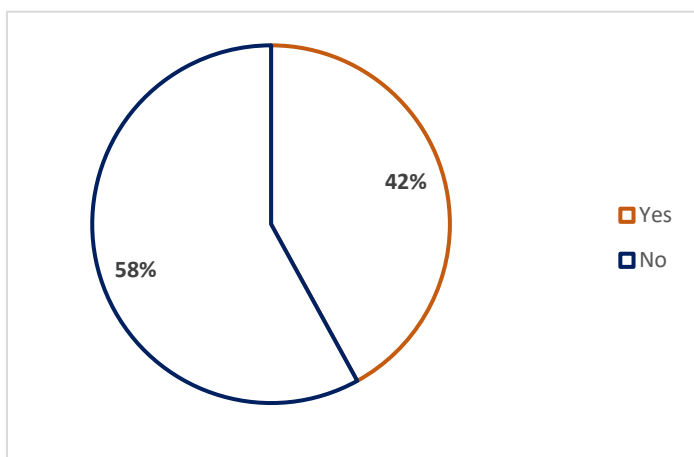
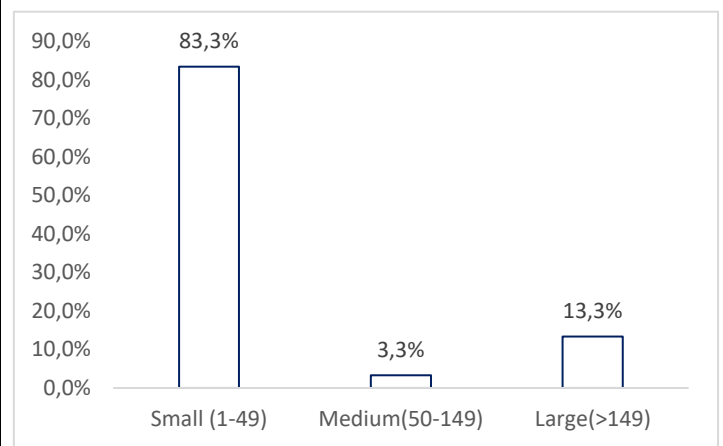


Figure 5: Organisations that could not market their produce/products per company size



6.2.3. Contribution of COVID-19 to unemployment

The International Monetary Fund (2020) predicts a further increase in the unemployment rate to 35.31 % in Dec 2020 due to the effects of COVID- 19. The agricultural sector is anticipated to be one of the sectors to be affected especially for the sub-sectors such as Tobacco and Horticulture (ornamental and wine) which were prohibited from operating. Figure 6 shows that COVID-19 had a negative impact on the employment in the agriculture sector.

The results show that small size entities retrenched more employees, as 77,9% that were retrenched were from the small size entities followed by 21,6% from medium size and less than 1% from large size enterprises. The high percentage of retrenchment from small entities may well be because of the organisations that could not market their produce/products small size organisations had the highest percentage as illustrated on figure 5. Moreover, Figure 7 illustrates that lower level position (59%) had the highest percentage of employees who were retrenched due to COVID-19, followed by employees that held medium level position (23%) and senior level positions (18%) had the least percentage of employees that were retrenchment.

Figure 6: Retrenchment per company size

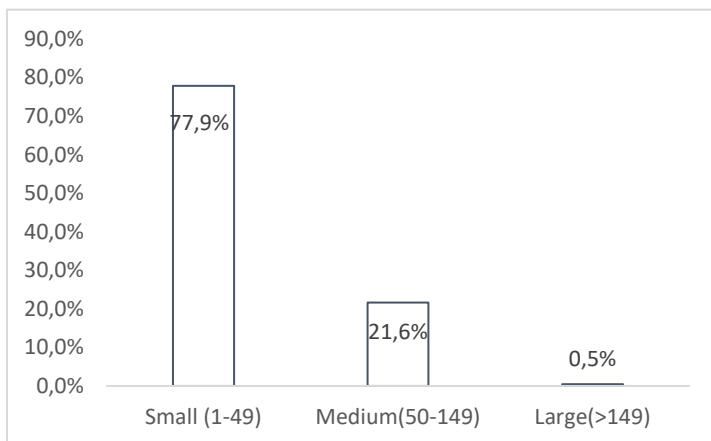
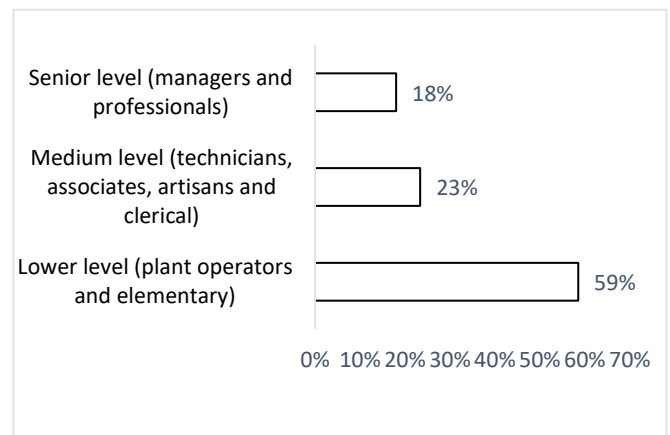


Figure 7: Retrenchment per occupational level



6.3. COVID-19 skills implication

6.3.1. Emerging skills in the agricultural sector due to COVID-19

The respondents were asked to list skills which the demand for is increasing, due to COVID-19. Table 2 below illustrates thirteen skills that were listed by the respondents as emerging skills in their organisations. The five most listed skills by the participants are as follows: (a) Health and safety skill, (b) Advanced computer skill, (c) Information and communication technology, (d) Communication skill and (e) Disaster management.

Table 2: Emerging skills in the sector

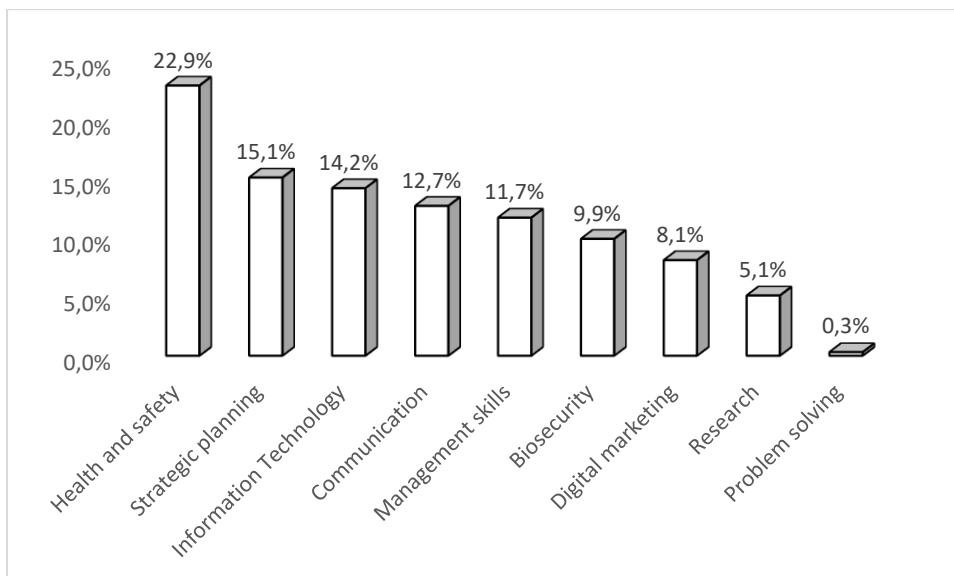
Emerging skills	Percentage
Advanced computer	24%

Communication	8%
Digital marketing	3%
Disaster management	6%
Food safety	4%
Health and safety	31%
ICT	10%
Leadership	1%
Management	3%
Negotiation	3%
Organisation	3%
Risk management	1%
Strategic planning	3%

6.3.2. Priority skills in the agricultural sector due to COVID-19

Figure 8 show the skills that the respondents regards as priority skills in their organisation as a result of COVID-19. The results show that the five most listed skills were: (a) Health and safety skill (22,9 %), (b) Strategic planning skill (15,1%), (c) Information technology skills (14,2%), (d) Communication skill (12,7%) and (e) Management skill (11,7%). On the other hand, Research (5,5%) and Problem skills (0,3%) were the least mentioned priority skills as illustrated on the figure below.

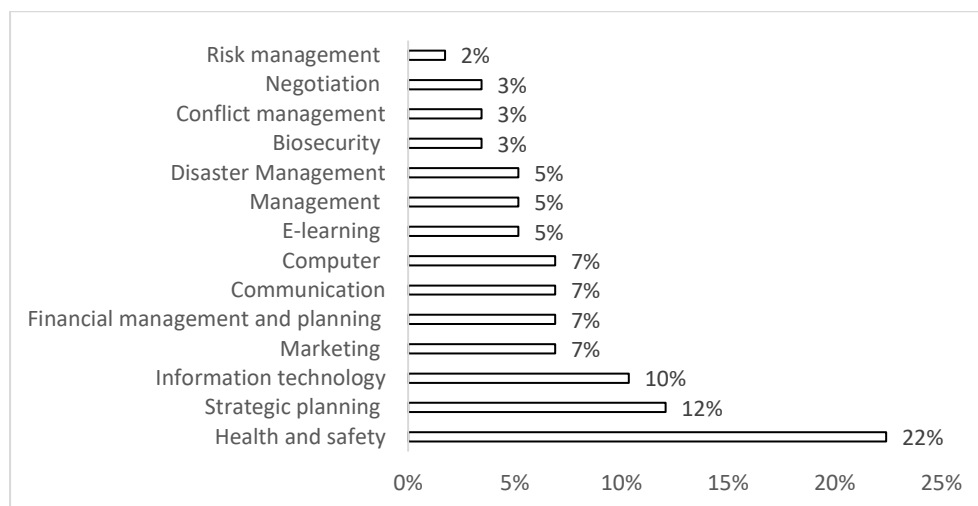
Figure 8: Priority skills in the agricultural sector



6.3.3. Top-up skills in the agricultural sector due to COVID-19

The respondents were asked which skills do their employees need to add on or improve on, in order to be able to function amidst the pandemic. Figure 9 illustrate 14 skills that organisations listed as top-up skills that their employees need due to COVID-19. Nonetheless, the most listed skills were: (a) Health and safety (22%) followed by Strategic planning (12%) and Information technology (10%).

Figure 9: Top-up skills needed by the respondents



7. Conclusion and recommendations

The results show that COVID-19 had a negative impact in the agricultural sector. Furthermore, the results show that 58 % of the organisations could not market their produce, and an average of 33% of people who worked at organisations that participated in the study lost their job. The results correspond with the statistics of unemployment reported by Stats SA. A drop in employment in the agriculture sector in quarter 1 of 2020 has been noted where employment in the agriculture sector decreased by approximately 21 000 employees, however StatsSA (2020) has argued that the employment figures on the quarterly labour force survey released for quarter

1 of 2020 may not be indicative of the impact of COVID-19 as the report includes employment up to the end of March 2020.

Moreover, the results indicated that small sized organisations experienced the harsh impact of COVID-19 the utmost, as the results shows that small size organisations had highest percentage of retrenchment as well as the highest percentage of organisations that could not market their produce/products during the national lockdown. Although large-size organisations had the second-high percentage of organisations that could not market their product, they had the least percentage of retrenchments.

In terms of skills that are emerging and critical during the presence of the pandemic, the results showed that health and safety is the most needed skill due to COVID-19. Therefore, it is recommended that AgriSETA and other relevant role players prioritise the emerging (table 2) and priority skills (figure 8) during skills development grant allocations. It is also recommended that further research be conducted for coherent conclusion as the number of organisations that responded to the study is greatly low when compared to the number of organisations that are registers with SARS.

8. References

Africa News, (2020) Coronavirus South Africa: COVID-19 impact on the economy [online]. Available from <https://www.africanews.com/2020/05/12/coronavirus-south-africa-covid-19-impact-on-the-economy//>

Agriobit. (2020) The effects of the COVID-19 pandemic on agricultural employment in South Africa. South Africa.

Department of Agriculture, Forestry and Fisheries. (2011) Food security. Pretoria, South Africa.

Etikan, I. (2016) Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*.

Food and Agriculture Organisation. (2016) Sustainable agricultural development for food security and nutrition: what roles for livestock?

Lestrada-Jefferis, J. (2000) Employment trends in the agriculture. Pretoria, South Africa.

Maliszewska, M. Mattoo, A. and van der Mensbrugge, D. (2020) The potential impact of COVID-19 on GDP and Trade.

National Institute of Communicable Diseases. (2020) First case of covid-19 coronavirus reported in SA. [Online] Available from: <https://www.nicd.ac.za/first-case-of-covid-19-coronavirus-reported-in-sa/>

SA Coronavirus. (2020) Essential services during the lockdown period. [Online] Available from <https://sacoronavirus.co.za/2020/03/20/essential-services-during-the-lockdown-period/>

SA Coronavirus. (2020) Statement by president Cyril Ramaphosa on measures to combat COVID-19 epidemic. [Online] Available from: <https://sacoronavirus.co.za/2020/03/15/statement-by-president-cyril-ramaphosa-on-measures-to-combat-covid-19-epidemic/>

South African Government. (2020) President Cyril Ramaphosa: Escalation of measures to combat Coronavirus COVID-19 pandemic. [Online] Available from: <https://www.gov.za/speeches/president-cyril-ramaphosa-escalation-measures-combat-coronavirus-covid-19-pandemic-23-mar>

South African Government. (2020). Agriculture, land reform and rural development. [Online] Available from: <https://www.gov.za/about-sa/agriculture>

Sprott, M. (2020) Closing borders during COVID spells disaster for Africa. [Online] Available from: <https://www.businesslive.co.za/bd/opinion/2020-06-10-closing-borders-during-covid-spells-disaster-for-africa/>

Statistics south Africa. (2020) Growth domestic product first quarter 2020. Pretoria, South Africa.

Statistics South Africa. (2020) Quarterly Labour Force Survey first quarter 2020. Pretoria, South Africa.

World Bank. (2020) Food Security and COVID-19. [Online] Available from: <https://www.worldbank.org/en/topic/agriculture/brief/food-security-and-covid-19>

World Economic Forum. (2020) The ongoing impact of COVID-19 on global supply chains. [Online] Available from: <https://www.weforum.org/agenda/2020/06/ongoing-impact-covid-19-global-supply-chains/>

World Farmers Organisations. (2020) COVID-19 pandemic outbreak: overview of the impact on the agricultural sector.

World Health Organisation. (2020) Pneumonia of unknown cause – China. [Online] Available from: <https://www.who.int/csr/don/05-january-2020-pneumonia-of-unknown-cause-china/en/>

World Health Organisation. (2020). Coronavirus disease 2019 (COVID-19) situation report.

