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Will COVID-19 Reverse the Gains Made in Occupational Health and Safety in the Mining Sector in South Africa?

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ABSTRACT

This paper reviews the possible impact of the Corona Virus (COVID-19) pandemic on the Mining and Mineral Industry (MMI) in South Africa. It examines the possible impact of COVID-19on the industry milestones on Occupational Health and Safety (OHS) agreed at the industry tripartite summit in 2014 which had ambitious targets of reaching zero harm in the industry and minimising occupational diseases by 2024. The paper used secondary data from the department of mineral resources. The analysis showed that (1) the industry has already missed some of the industry milestones towards the 2024 targets such as zero fatalities by 2020 and many other targets in health are also lagging behind. (2). PTB remains the dominant occupational diseases in the mining sector in South Africa constituting about 50% of major occupational diseases in the sector. (3) COVID-19 Positive continue to increase in the sector and it is being seen as a new epicentre for COVID-19 in the country despite the mandatory guidelines for OHS in the sectorin terms of the Mine Health and safety Act (MHSA) published by the Department of Mineral Resources and Energy (DMRE) to respond to COVID-19. There is a need for the industry stakeholders to work together to reduce the impact of COVID-19 on the sector and improve occupational health outcomes towards the 2024 targets.

Key Words: COVID-19, Mining, Occupational Diseases

1. INTRODUCTION

Generally researchers in both academia and practice agree that the MMS is one of the most risky and hazardous occupations globally. The situation is more hazardous in underground mining (Bagherpour et al., 2015b; Verma & Chaudhari, 2017). According to (Yilmaz & Alp, 2016) an average of, 2 million fatal accidents occur worldwide in the MMS. This means an average of two workers die every minute because of occupational accidents globally. In South Africa, health and safety issues remain severe despite the efforts

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made in improving health and safety in the MMI. The Mining sector in South Africa has continued to aim at improving health and safety in the sector and this is evident through various tripartite agreements between labour, government and employers over the years. The most recent agreement was made in 2014 with focus to get to zero harm in the industry by 2024 and to eliminate certain occupational diseases in the sector. Though the industry is closer to its targets now than it was in 2014, there is evidence that the industry has missed some of the targets and ismost likely not going to meet some of the targets. The situation could be made worst with the current situation of the Corona Virus (COVID-19). This articles examines the health and safety challenges in the SA mining sector in relation to the potential impact of the COVID-19 on the health and safety of employees and the possible exacerbation of OHS issues in an industry that is already dealing with severe health and safety issues. The paper presents the OHS issues in SA mining sector, the 2024 targets and progress made, and how the advent of COVID-19 could make this worse. The paper then makes conclusions and recommendations on how the various stakeholders can deal with reducing the impart of COVID-19 on the 2024 industry targets.

1.1. OCCUPATIONAL HEALTH AND SAFETY IN THE MMS

Mining practices generate numerous conditions that have huge consequences on human safety and health. These safety and health problems emanate as a result of biological, chemical, psychosocial and physical risk factors. Because the nature of the MMI sector being extractive, it faces some of the toughest industry challenges in relation to health and safety Gunarathne et al. (2016). The novel Coronal Virus, 2019 (COVID-19) was declared a global public health pandemic after its rate of spread expanded across 100 countries and geographic regions in a short time. This virus is said to cause lower respiratory track disease. The disease was first called the Novel Corona Virus Pneumonia (NCP) by the Chinese Government, following its outbreak. The World Health Organisation (WHO) then changed the name of the disease to the Corona Virus 2019 COVID-19). However, the International Committee on Taxonomy of Viruses renamed it SARS-Cov-2. As of June 02, 2020, the total numbers of confirmed cases globally were 6,451,966. In South Africa the confirmed cases on the same day were 35,812, there were 12741 recoveries and 524 COVID-19 related deaths in South Africa according to the South African Government (SA Government, 2020). Over 500 of the positive cases in South Africa are in the mining sector and the trend is increasing as the industry gear up towards 100% operations capacity and South Africa moves to Lockdown Level 3 from the First of June 2020.

While the health and safety of mine workers continues to be a serious persistent and costly problem globally (Mabika, 2018), COVID-19 might make health and safety worse in the sector if not properly managed. Both advanced and low income economies continue to battle with issues health and safety of workers (Pagell, Veltri, & Johnston, 2016). Occupational health and safety remains a priority for policy makers and all other stakeholders in South Africa. The application of health and safety measures in the MMI depends on how OHS is defined in the country Balderson (2016). In South Africa following the outbreak of the COVID-19 Pandemic courts have ruled that the Department of Mineral Resources and Energy must Gazette COVID-19 as an occupational health hazard in terms of the Mine Health and Safety act. This means that from a regulatory point of view, industry is expected to comply with the legislation and follow the rules to ensure the health and safety of the miners. This is also in line with the provisions of the MHSA that mandates employers to ensure the health and safety of employees, contactors and any other stakeholder on

the mine. South Africa in adopting the MHSA also shifted towards a risk management approach to health and safety in the MMS. Despite these regulatory initiatives and what the mining companies are doing to improve the health and safety in the MMI, issues of mine health and safety persist and remain costly in South Africa and globally (Mabika, 2018).

2. COVID-19 AND OHS ISSUES IN THE SAMI

Following the outbreak of COVID-19 in SA , the mining industry has been at the forefront of developing interventions, guidelines and measures to deal with OHS issues in the sectorduring and after COVID-19. There has been a number of interventions to guide OHS in the SAMI from regulatory requirements of the Mine Health and Safety Act (29/1996) to the new Guidelines for a Mandatory Code of Practice on the Mitigation and Management of COVID-19 Outbreak (DMR, May, 2020) and other WHO and NICD guidelines. Prior to the new comprehensive and mandatory guidelines document on dealing with COVID-19 in the MM, the industry through the tripartite came up with a guideline to ensure that the industry preparesto deal with COVID-19 in the mines. However the mandatory guidelines by the DMR are legal and binding in terms of Section 9(2) of the MHSA. The guidelines apply to all categories of employees in the SAMI and provide minimum requirements and best practices for the compilation of a COP for the prevention, mitigation and management of COVID-19 outbreak in the mining sector. The guidelines mandates mine to draft COPs to manage COVID-19 and it also defines the process of developing these COPs:

- A COVID-19 COP drafting committee needs to be specified on all mines in South Africa. This must be in line with the specifications of S9 (4) of the MHSA- consultation with the OHS committee must be done before the drafting committee is selected.
- There must be a section with general information about the mine: commodity, mining method, risks in the mine, unique features and any other relevant information.
- Terms must be clarified. The drafting committee must avoid jargon and abbreviations that are not in common use or that have not been defined.
- There must be appropriate COVID-19risk management in terms of section 11 of the MHSA. In terms of S11 (3) (4) the employer must identify and eliminate possible risk to COVID-19 and where risk cannot be eliminated provide the appropriate PPE to employees.
- Key elements to be addressed in the COP include the following
    - Risk assessment and review
    - Start-up and on-going procedure for mines
    - COVID-19 Management Programme
    - Monitoring and reporting
    - Compensation for occupationally acquired novel corona virus (Covid- 19)

These new regulations and the MHSA are in line with research that shows that safety and health in the mining sector can be improved through government policies and safety regulations Geng and Saleh (2015). However, despite the increased policies and regulations governing health and safety in the mining sector, different types of accidents including fatal ones continue to occur in the MMI sector in SA and globally Sanmiquel et al. (2015). The situation is worrying with the outbreak of the COVID-19 globally. In South

Africa, since the first case of COVID-19 was identified in the mining sector, the numbers of cases continue to grow. There has been increased calls for the MMS to accelerate testing and to ensure that the guidelines on COVID-19 in the MMI are implemented. However, the sector already has issues with OHS and lack awareness of various risks by miners, lack of appropriate education and training on occupational health and safety issues Lynas (2015:3) and this could be made worse by the outbreak of COVID-19. According to the WHO, globally most health and safety issues faced by mine workers can be attributed to competing socio-economic demands, lack of expertise and training in safety measures, and inadequate equipment (WHO 2003).

2.1 COMPOSITION OF THE MAIN OCCUPATIONAL DISEASES IN SOUTH AFRICAN MINING SECTOR

According to the DMRE, 2018), there was an overall decrease of 9.32% in occupational diseases in SA mines between 2016 and 2017. According to the DMRE (2018), airborne pollutant over exposure in the MMS has reduced from 3.66% of the total 323 365 employees at risk in 2016 to 3.52% of the total of 345 465 employees at risk in 2017. Noise overexposures reduced from 0.87% of the total 333 430 employees at risk in 2016 to 0.22% of the total 348 420 employees at risk in 2017. Thermal heat over exposures increased by 2.81% of the total of 139 209 employees at risk in 2017 compared to 2.47% of the total of 270 278 employees at risk in 2016. An overall reduction in over exposures to occupational hygiene stressors has been noted. Cold continues to maintain zero overexposure year on year since 2013. The DMRE also notes an overall improvement in occupational disease surveillance in the sector, mainly due to increased compliance, an increase in the reporting of diseases, and early recognition of occupational diseases in an effort to eradicate lung diseases and prevent HIV new infections in the sector in terms of the tripartite milestone agreements in the sector.

According to Figure 1, the main occupational diseases in the MMI include Pulmonary Tuberculosis (PTB), Noise Induced Hearing Loss (NIHL), Silicosis, Silico TB and other diseases. However, figure one shows us that PTB remains the dominant OHS disease in the MMI and constituted 50% of the main OHS disease in the MMI in 2018 up from 41% in 2008. It would be important for the industry to understand the possible impact of COVID-19 on the health and safety of mine workers especially on those with underlying health conditions. A majority of the positive COVID-19 cases in SA and also in the MMI are males and it will be important to understand how their lifestyles including habits like smoking or other underlying factors will impact on the health and safety of employees in the sector in the era of COVID-19.

Examining the sector occupational diseases reported, gold mines decreased by 8%, coal decreased by 11%, diamond decreased by 58%, copper decreased by 57%, chrome decreased by 23%, manganese decreased by 39% and iron ore decreased by 94% in 2017. However, within the same period, platinum and all other mines increased by 18% and 8% respectively when compared to the previous year. This statistics are both far from the industry milestone targets and still shows that there continue to exist issues in health and safety in the MMS sector and these could be made worse by the outbreak of COVID-19 and move the industry further away from the 2014 summit targets for 2024. It must be noted that some of the summit milestones have already been missed and there is a possibility to move further away from summit targets due to the outbreak of COVID-19.

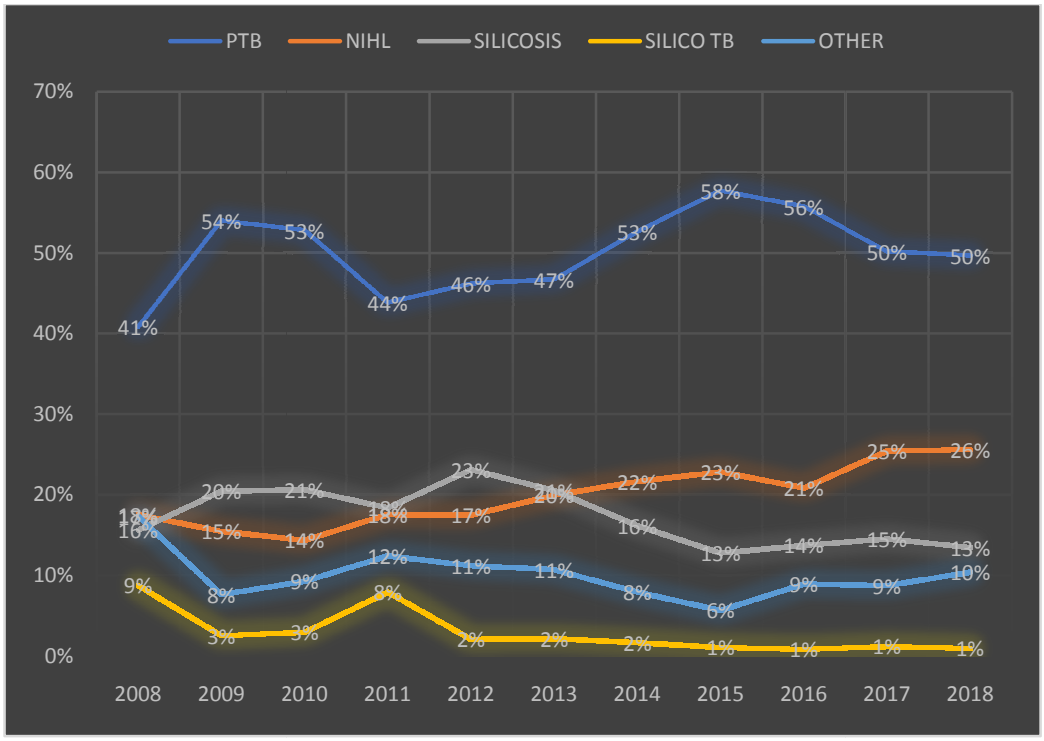

Figure 1. Main Occupational diseases in the Mining and Mineral Industry in South Africa (DMRE, 2019)

3. CONCLUSION

Mining is an important economic sector in South Africa and employsover 500,000 employees, contributes to over 5% of the GDP. Mining also has other indirect contributions to the economy with mining outputs such as coal being required as inputs into other strategic sectors such as energy. Over the years the mining sector has continued to deal with issues of OHS and to improve the health of employees especially in underground mines through technology advances, more risk management, the use of PPEs, education and other interventions. Data from the Department of Mineral Resources and Energy shows that there has been an overall decrease in occupational diseases in the sector over the years. However, the decrease lags behind sector milestone targets set out in the 2014 tripartite agreement. The outbreak of COVID-19, in SA has led to regulations declaring COVID-19 an occupational hazard in the MMI and the DMRE in May, 2020 drafted regulations and mandatory guidelines for all employers in the industry to follow in order to deal with COVID-19 in the mines in South Africa. However, the trend of positive COVID-19 cases in the industryis increasing and could get worse if appropriate measures are not implemented fast enough to isolate the positive cases and prevent any asymptomatic cases from going underground and ensuring that the currentmandatory guidelines on COVID-19 for the MMI are implemented. The high occupational diseases burden in the industry with PTB constituting over 50% of the major occupational diseases in the industry, is already a challenge that the industry has been dealing and this could be made worse due to the outbreak of COVID-19 and move the industry further from its 2014 industry agreement and 2020 targets and various milestones on improving health and safety and ensuring zero harm in the MMI. There is a need for sector stakeholders to work together to ensure that the potential impact of COVID-19 in the sector is minimised.

CONFLICT OF INTEREST STATEMENT

I Vivian A. Atud, declare that this research paper titled "Will Covid-19 Reverse the gains Made in Occupational Health and Safety in the Mining Sector in South Africa?" is my own independent academic research work aimed at provoking thoughts around the possible impact of Covid-19 on the Mining Sector Occupational Health and Safety targets for 2024. I am the director of Atud and Associates Research organisation and we do independent research advisory to the South African Mine Health and Safety Council (MHSC). But this research paper is not sponsored by the MHSC and I have not received any financial support from any other source for this research. I am also a Research Fellow at the Scholl of Graduates Studies and Interdisciplinary Research at the University of South Africa and this paper has not received any funding from any source.

REFERENCES

1. Bagherpour et al., 2015b; Safety Risk Assessment of Iran's Underground Coal Mines Based on Preventive and Preparative Measures. Human and Ecological Risk Assessment: An International Journal Volume 21, 2015 - Issue 8
2. Balderson, D. (2016). Safety defined: A means to provide a safe work environment. Professional Safety, 61(5), 63-68. Retrieved from https://www.onepetro.org/
3. Geng, F., & Saleh, J. H. (2015). Challenging the emerging narrative: Critical examination of coalmining safety in China, and recommendations for tackling mining hazards. Safety Science, 75, 36-48. doi: 10.1016/j.ssci.2015.01.007
4. Gunarathne et al. (2016). Fostering social sustainability management through safety controls and accounting :A stakeholder approach in the mining sector. Social sustainability management Vol 29, 2
5. DMR. (2018). Department of Mineral Resources, 2018 Annual Report. Available at: https://www.dmr.gov.za/resources Accessed 29 November 2019
6. ILO (2013) Occupational Safety and Health. https://www.ilo.org/dyn/legosh/en/f?p=14100:1100:0::NO::P1100_ISO_CODE3,P1100_YEAR:ZAF,2013
7. Lynas, 2015. Lynas half year results and financing agreement. Lynas Corp. <https://www.lynascorp.com/Announcements/2015/Lynas%20Half%20Year%20Results%20And%20Financing%20 Agreement%20-%2013%20March%202015.pdf>.
8. Mabika B. (2018). Improving workers' safety and health in the Zimbabwean mining and quarrying industry. Walden Dissertations and Doctoral Thesis. Walden University.
9. Pagell, Veltri, & Johnston, (2016). Managing Safety and Operations
10. Republic of South Africa. (1996). Mine Health and Safety Act 29 of 1996. Government Gazette No. 967. 14 June 1996 Available at: https://www.gov.za/sites/default/files/gcis_document/201409/37027gen1103.pdf Accessed 30 December 2019
11. Republic of South Africa (2020) Corona Virus Portal . https://www.gov.za/speeches/minister-zweli-mkhize-confirms-total-34-357-cases-coronavirus-covid-19-1-jun-2020-0000. Accesses June 2, 2020.
12. Republic of South Africa (2020) Mineral Resources and Energy, Department: Mine Health and Safety Act (29/1996): Guidelines for a Mandatory Code of Practice on the Mitigation and Management of COVID-19 Outbreak . Government Gazette Vol 659 no. 43335. May 2020.
13. Sanmiquel et al. (2015). Study of Spanish mining accidents using data mining techniques. Safety Science. Volume 75, June 2015, Pages 49-55
14. The Effect of Joint Management System Practices on Safety and Operational Outcomes. Journal of Occupational and Environmental Medicine: March 2016 - Volume 58 - Issue 3 - p e80-e89
15. Verma & Chaudhari, 2017). Safety of Workers in Indian Mines: Study, Analysis, and Prediction. Occupational health and Safety Institute. Volume 8, Issue 3, September 2017, Pages 267-275. https://doi.org/10.1016/j.shaw.2017.01.001
16. Verma & Chaudhari, 2017). Safety of Workers in Indian Mines: Study, Analysis, and Prediction. Occupational health and Safety Institute. Volume 8, Issue 3, September 2017, Pages 267-275. https://doi.org/10.1016/j.shaw.2017.01.001
17. WHO. (2003). The World Health Report, 2003. Available at: https://www.who.int/whr/2003/en/whr03_en.pdf Accessed 26 November 2019.
18. WHO(2020) Corona Virus Disease (Covid-19) pandemic. https://www.who.int/emergencies/diseases/novel-coronavirus-2019, accessed 1, June 2020
19. Yilmaz, F. & Alp, S. (2016). Underlying factors of occupational accidents: The case of Turkey. Open Journal of Safety Science and Technology 6(1):1-10.