

Sector Study: Quarrying



Prepared for: Mining & Beneficiation Workstream

:

Prepared by:

Name : Daniel Thwala
Position : Sector Specialist: Manufacturing
Contact number : +27 65 586 4178 / +27 31 368 9604
Email : daniel@tikzn.co.za
Website : www.tikzn.co.za
Date : 30 November 2021

Table of Contents

1. INTRODUCTION.....	3
2. THE GLOBAL INDUSTRY OVERVIEW.....	3
3. INDUSTRY VALUE CHAIN.....	4
4. GLOBAL TRADE.....	5
5. GLOBAL OUTLOOK.....	6
6. OVERVIEW OF THE SOUTH AFRICAN QUARRYING SECTOR.....	7
6.1 TRADE DYNAMICS.....	7
6.2 MARKET DEVELOPMENTS.....	9
6.3 SWOT ANALYSIS OF THE QUARRYING SECTOR.....	10
7. GOVERNMENT INTERVENTIONS.....	11
8. OPPORTUNITIES FOR KWA-ZULU NATAL.....	12
REFERENCES.....	14

1. INTRODUCTION

Quarries are a vital part of our economy as they enable the construction industry and subsequently infrastructure development. The demand for quarry products is mainly driven by the construction industry, which comprises of residential and non-residential buildings as well as civil construction. The South African quarrying sector is made up of large number of players, such as global cement producers like Lafarge and Dangote, local companies like PPC and AfriSam, and many small, medium and micro enterprises. This report provides an in-depth analysis of the global quarrying sector and further looks at the South African market. A local market analysis is also covered indicating the recent developments together with the trade dynamics. The report concludes with identifying opportunities that the province of Kwa Zulu Natal can leverage on to further develop and sustain the sector.

2. THE GLOBAL INDUSTRY OVERVIEW

Quarrying refers to surface mining that is intended for the production of sand, limestone, clay, dimension stone and aggregates, which can be gravel or crushed stones. This sector forms part of the mining industry since its products are excavated from the ground. The quarrying products are predominantly used for the primary construction of monuments and buildings.

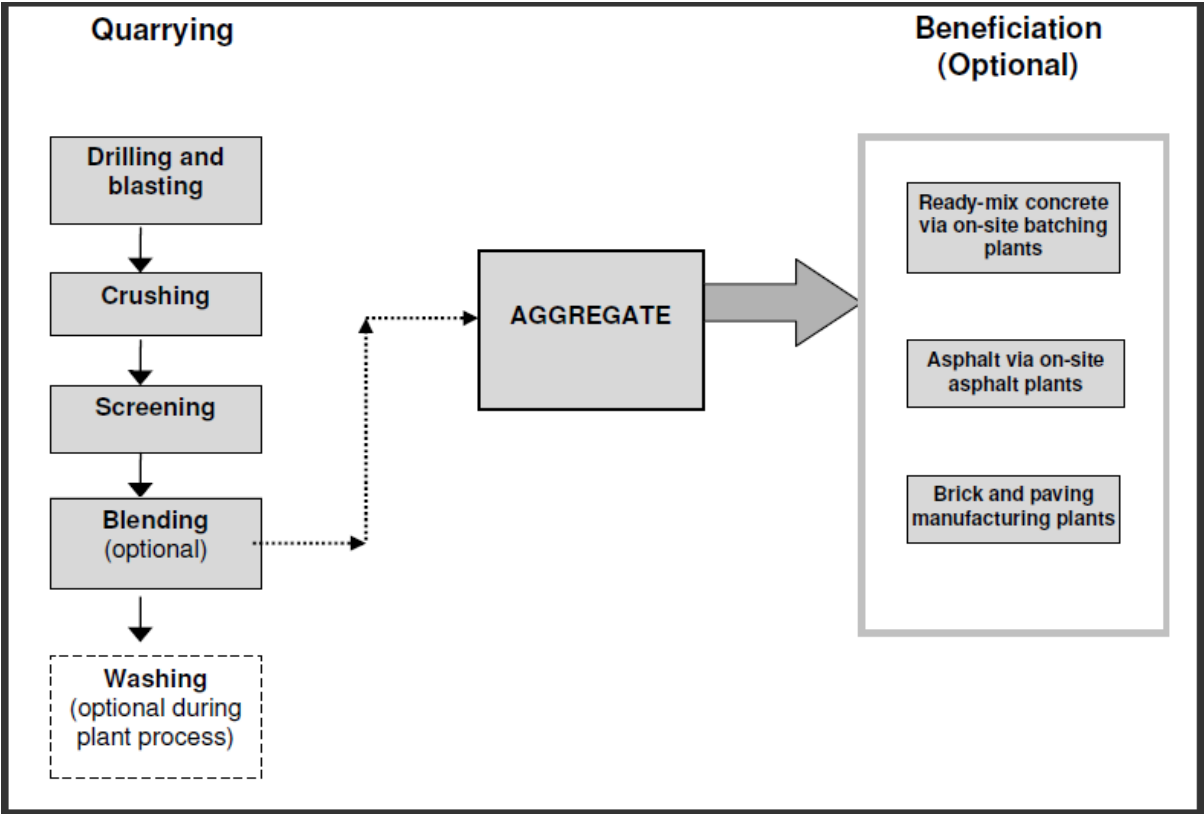
The quarrying market is highly fragmented, with a large number of small players dominating the market. Currently, the key players within the sector are focusing on expanding their operational and business presence through strategic acquisition of emerging companies. According to BusinessWire (2021) the quarrying industry was valued at \$8 billion in 2020, representing a compound annual growth rate (CAGR) of 1.2% since 2015. The industry is expected to grow to \$11,1 billion by 2025 and further reach \$14,3 billion by 2030.

In 2020, Asia Pacific was the largest market for the global quarrying industry accounting for 58% of the total market, followed by Europe at 26%. Globally, major companies in the quarrying sector include, *inter alia*, Vulcan Materials Company; Martin Marietta Aggregates Inc; Cemex SAB de CV; Carmeuse Lime & Stone Inc and Adelaide Brighton Ltd.

3. INDUSTRY VALUE CHAIN

Quarrying of stones is completely different from mining in that mining is an underground operation whereas quarrying is carried out on exposed surface of natural rocks. Most hard rock materials used to produce coarse aggregate are sourced from open pit quarries and waste dumps. In most cases, quarrying usually requires drilling and blasting, after which the rock is extracted by means of bulldozers and draglines. The broken rock is then transported to a processing facility and the material goes through several stages of crushing and sizing. In certain instances, blending is necessary to produce in accordance with customer specifications. A good concrete aggregate must be clean, chemically inert, durable, hard, homogenous, and roughly cubic in shape after crushing and of a size grade suitable to make concrete of the desired physical qualities. Figure 1 below shows the value chain of a quarry.

Figure 1: Quarrying Value Chain

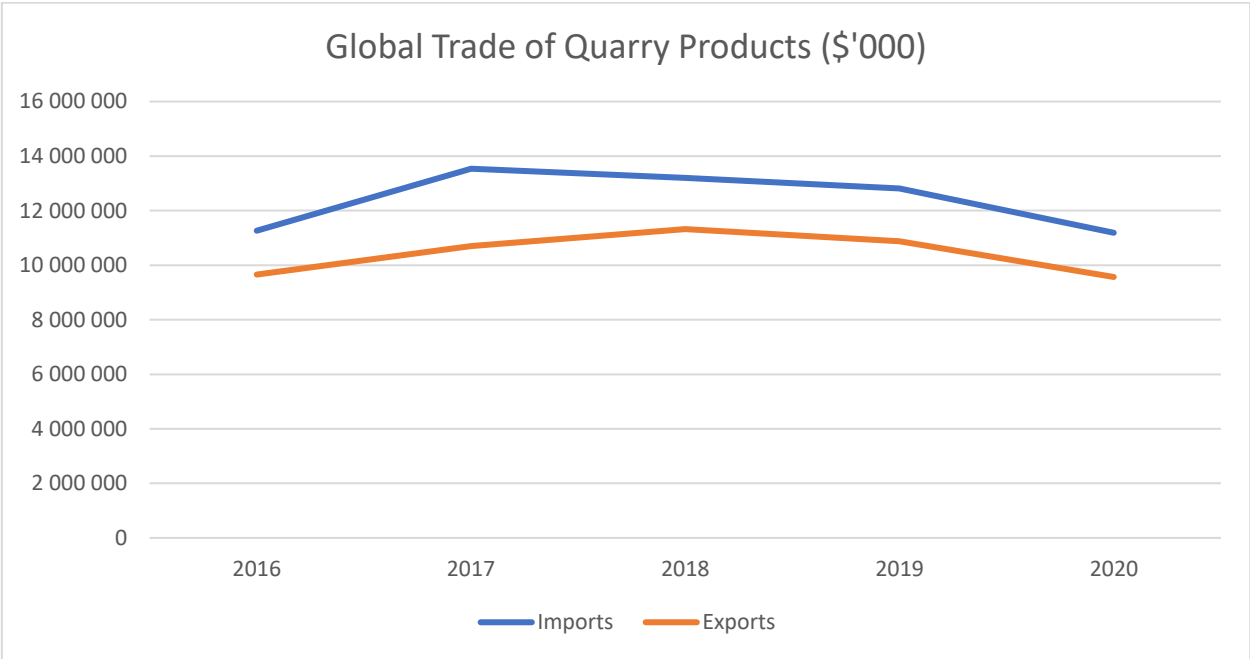


Source: DMRE, 2012

4. GLOBAL TRADE

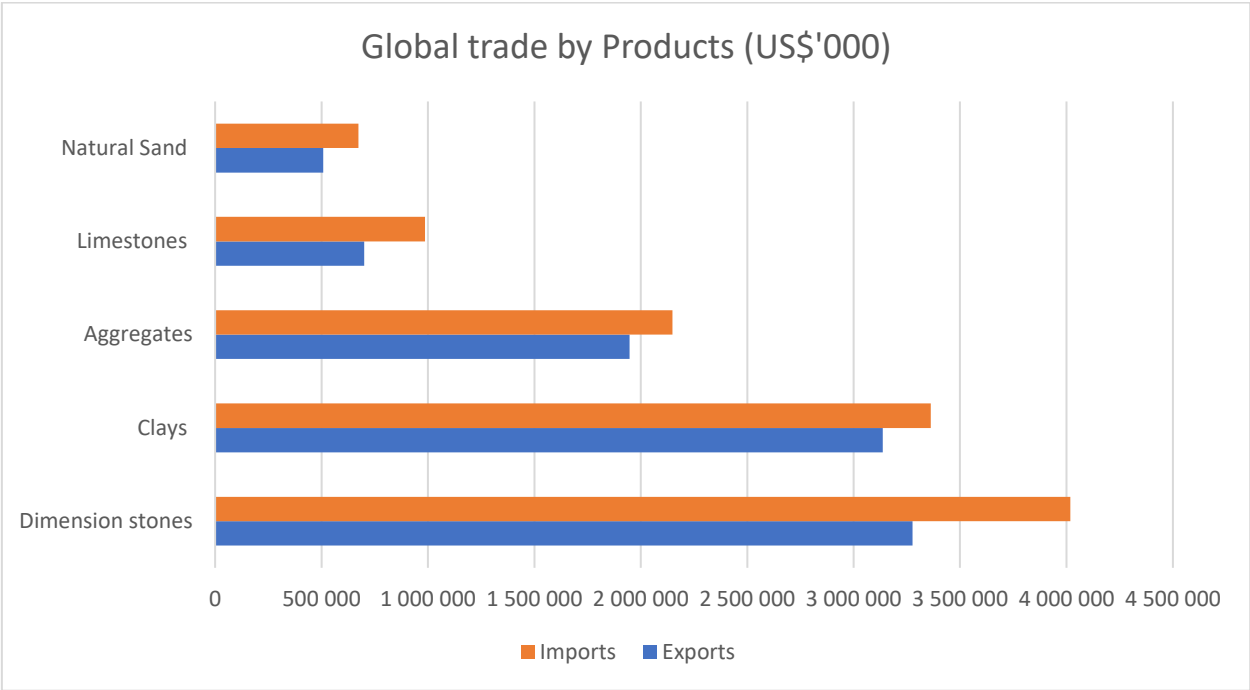
Global trade of quarry products in 2020 amounted to US\$ 20 billion with imports accounting for 54% whilst exports accounted for the remainder. Between 2016 and 2020, total export and import of quarry products increased marginally by annual averages of 0,5% and 0,2% respectively. Major contractions were experienced in 2020 which are mainly attributed to reduced construction activities as a result of the global COVID-19 pandemic. Figure 2 below shows total imports and exports of quarry products. Dimension stones, clay and aggregates are the major trade drivers collectively accounting for 87% and 85% of total exports and imports respectively. Figure 3 below shows total trade of quarry products by product.

Figure 2: Total trade of quarry products



Source: International Trade Centre, 2021

Figure 3: Quarry products



Source: International Trade Centre, 2021

5. GLOBAL OUTLOOK

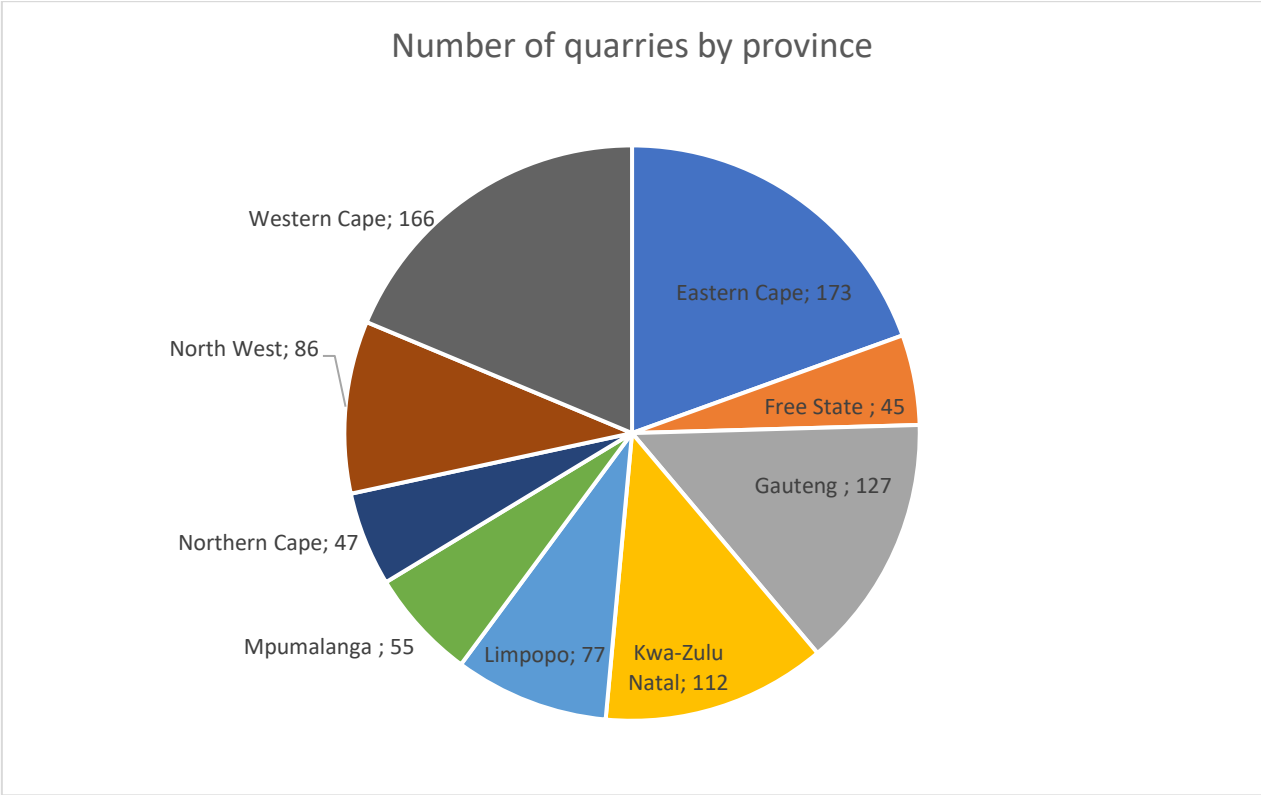
The COVID-19 pandemic had unintended consequences on the supply chain of the construction industry and subsequently the quarrying sector as governments globally imposed lockdowns and suspended economic activities in an attempt to contain the virus. Manufacturing and supply of construction materials, including stone mining and quarrying were largely affected as facilities were shut down and the movement of people and goods were restricted.

The outlook for the global quarrying industry remains positive as infrastructure development remains key on the post COVID-19 stimulus agenda. Investment in new infrastructure, such as hospitals, schools, renewable energy, and digital networks, has the potential to create jobs and deliver tangible assets that can fuel long-term economic growth. In 2021, total output value of infrastructure investment in 2021 amounted to US\$3,4 trillion and it is expected to grow by 4,9% on average between 2022 and 2025 (PR Newswire, 2021). This bodes well for the quarrying sector as the demand for quarry products is predominantly driven by infrastructure construction.

6. OVERVIEW OF THE SOUTH AFRICAN QUARRYING SECTOR

In South Africa, various quarry products are available and products such as concrete aggregate are usually found in abundance around most of the major centres of development. The South African quarrying sector is made up of large number of players, such as global cement producers like Lafarge and Dangote, local companies like PPC and AfriSam, and many small, medium and micro enterprises involved in the production of quarry products. According to DMRE (2020), there is a total of 888 operating quarries in the country. Figure 4 below shows the geographical spread of quarries in the country.

Figure 4: Number of quarries by province



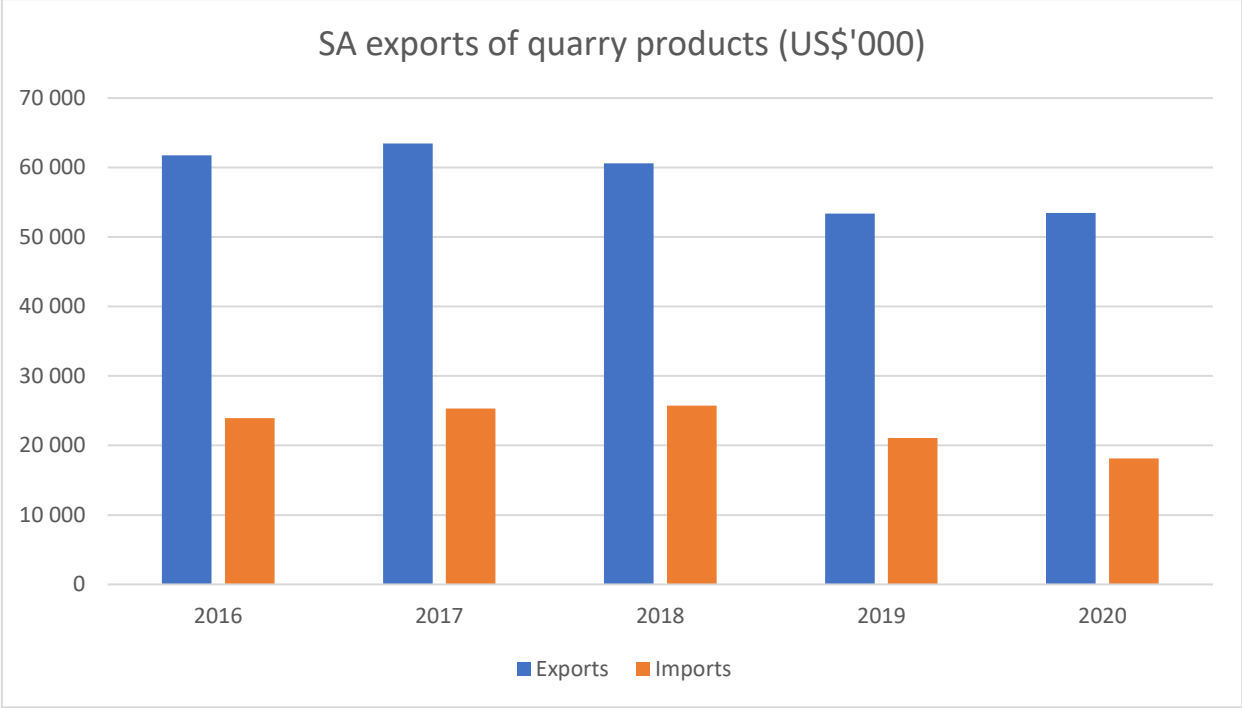
Source: DMRE, 2020

6.1 TRADE DYNAMICS

South Africa is the net exporter of quarry products. In 2020, export of quarry products amounted to US\$ 54 million, representing a marginal increase of 0,2% from 2019. Imports on the other hand, amounted to US\$ 18 million in 2020, which represents a decline of 14% from 2019. Between 2016 and 2020, South Africa exports and imports contracted

by 3,4% and 6,1% on average respectively. Figure 5 below shows South African exports and imports.

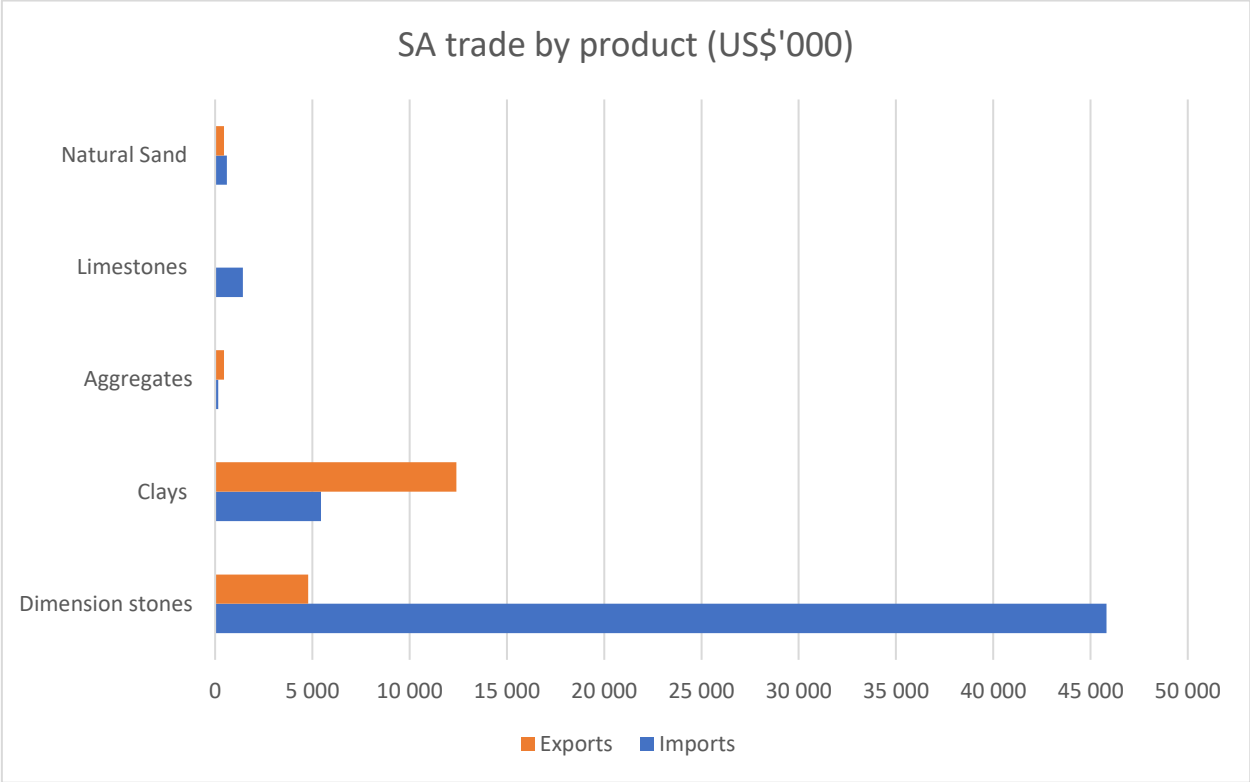
Figure 5: SA exports of quarry products



Source: International Trade Centre, 2021

Overall, South African export of quarry products accounted 0,6% of global exports whilst imports account 0,2% of global imports. Dimension Stones and clays are major trade drivers accounting for 71% and 25% of total trade respectively. Dimension Stones and clays are major trade drivers accounting for 71% and 25% of total trade respectively. Figure 6 below shows exports and imports of quarry products by product. Major export destinations for South African quarry products include China, Zimbabwe and Lesotho while major source markets include China, Brazil and Lesotho.

Figure 5: SA exports of quarry products



Source: International Trade Centre, 2021

6.2 MARKET DEVELOPMENTS

Demand for quarry products in South Africa is mainly driven by the construction industry, which is comprised of residential building, non-residential building, and civil construction. The South African construction industry has been on steady decline since 2017. The cause of the construction industry’s decline has been mainly attributed to the reduced government infrastructure spending, a depressed economy, less foreign investment due to ratings downgrades and the rising costs of materials. Recently, the COVID-19 pandemic and subsequent lockdowns also significantly impacted the industry resulting in 18% contraction in industry value in 2020 (Stats SA, 2020).

South Africa remains the largest infrastructure market in Sub-Saharan Africa, and it is expected that construction will recover as downward pressures of the COVID-19 pandemic on the industry ease. Although fiscal consolidation by government can exert downward pressure on public infrastructure spending which is a key driver of growth in South Africa’s construction industry, there are plans to counterbalance this by attracting

private investment into infrastructure sector and also to accelerate projects that are currently underway. Some of the nationwide infrastructure development projects that are currently underway, includes, *inter alia*, the following:

- As of September 2021, construction is under way on the R1,65 billion Msikaba bridge in South Africa's Eastern Cape province. A joint venture between local construction firm Concor and Portugal-based Mota-Engil is responsible for the construction of the 580m long bridge. The cable-stayed bridge is likely to be completed by the end of 2025 or in early 2026.
- In August 2021, the South African National Roads Agency (Sanral) awarded H&I Construction a R237 million contract to complete the remaining upgrade work of 27km of the R61 road from Bayiza to Mthatha Airport in the Eastern Cape province. The project was re-tendered in late 2020, after the initial contract was terminated in August 2019 due to non-performance by the previous contractor. Construction is due to start in September 2021 with completion expected in November 2022.
- Sanral is due to complete the construction of a R640 million ring road project in Limpopo Province in June 2022. The works include the construction of an 8km greenfield single carriageway to direct traffic from the N1 section 29 alignment just south of Musina towards the existing alignment in the north. The majority of the earthworks and storm infrastructure works associated with the project have been completed.

6.3 SWOT ANALYSIS OF THE QUARRYING SECTOR

Strengths

- South Africa has adequate reserves of quarry products across the country.
- Large well-established companies with global presence are already operating in the country.
- Strong government support aimed at transforming the sector.

Weaknesses

- Demand for quarry products is mainly driven by developments within the construction industry, whose health is determined by the state of the economy, and investment in major infrastructure developments.
- The government's ongoing focus on social spending coupled with weak revenue growth means state-driven projects are slow to progress.
- High capital investment and operating costs as well as a highly regulated industry, which may serve as deterrents to new entrants.
- Skills shortage in certain discipline within the sector.

Opportunities

- The government has announced the stimulus package to drive infrastructure development as part of the post-COVID-19 recovery.
- South Africa is the net exporter of quarry products, and this bodes well for the sector to diversify its market and not completely rely on local demand.

Threats

- Continuous increases on operating costs, particularly, electricity, water, and labour costs.
- Possible delays in government's infrastructure spending.
- Labour disputes are rife in the country and potentially impacts infrastructure projects.

7. GOVERNMENT INTERVENTIONS

The South African government has a number of policy and legislative interventions aimed at growing and sustaining the quarrying sector. These interventions are briefly outlined below.

Mineral and Petroleum Resources Development Act (MPRDA)

The MPRDA, came into effect on May 1, 2004, and governs the acquisition, use and disposal of mineral rights in order to and correct imbalances in the mining sector caused

by apartheid. This act brings South Africa in line with other countries such as Canada, Australia and the US, where the state acts as the custodian of the mineral rights on behalf of its people, and these rights are rented out to companies.

Broad-Based Black Economic Empowerment Charter for the South African Mining and Minerals Industry (Mining Charter III)

The Mining Charter III covers seven main elements, namely; ownership, mine community development, procurement, beneficiation, house and living conditions, human resource development and employment equity. The objectives of this charter are to:

- Promote equitable access to the nation's mineral resources to all the people of South Africa;
- Substantially and meaningfully expand opportunities for Historically Disadvantaged South Africans (HDSA) including women, to enter the mining and minerals industry and to benefit from the exploitation of the nation's mineral resources;
- Utilise the existing skills base for the empowerment of HDSAs;
- Expand the skills base of HDSA's in order to serve the community;
- Promote employment and advance the social and economic welfare of mining communities and the major labour sending areas; and
- Promote beneficiation of South Africa's mineral commodities.

Preferential Procurement Policy Framework Act

The act empowers the Department of Trade, Industry and Competition (DTIC) to designate industries, sectors and sub-sectors for local production at a specified level of local content in line with national development and industrial policy goal. Effective from 04 November 2021, the government has banned the use of imported cement in state-awarded contracts to allow locally produced cement.

8. OPPORTUNITIES FOR KWA-ZULU NATAL

The province currently has 112 operating quarries making it number 4 province with most quarries nationwide. Of the 112 quarries currently in the province, 101 are currently involved in the production of aggregates and natural sands while the remainder are

involved in producing clays, dimension stone and limestones. The opportunity for local quarries is two-fold. Firstly, to supply the export market, particularly within the Sub-Saharan Africa region as governments rollout infrastructure development programmes as part of their strategies to stimulate economic growth post COVID-19. Secondly, to supply local market as plans to accelerate infrastructure development are in the pipeline particularly in industries such as energy, water, transport, human settlements and telecommunications. This bodes well for the local quarrying market and allows an opportunity to integrate small scale miners into the value chain.

REFERENCES

BusinessWire. 2021. Stone Mining and Quarrying Global Market Opportunities and Strategies to 2030 [Online] Available from:

<https://www.businesswire.com/news/home/20210924005385/en/Stone-Mining-and-Quarrying-Global-Market-Opportunities-and-Strategies-to-2030---ResearchAndMarkets.com>

International Trade Centre. 2021. [Online] Available from:

<https://www.trademap.org/Index.aspx>

PR Newswire. 2021. Global Infrastructure Construction Outlook Report 2021-2025: Focus on Roads, Railways, Power and Electricity, Water and Sewerage, and Airports and Other Infrastructure Sectors. [Online] Available from: <https://www.prnewswire.com/news-releases/global-infrastructure-construction-outlook-report-2021-2025-focus-on-roads-railways-power-and-electricity-water-and-sewerage-and-airports-and-other-infrastructure-sectors-301403714.html>

Statistics South Africa. 2020. Electronic Data. [Online], Available from: <http://www.statssa.gov.za/>

The Department of Mineral Resource and Energy. 2012. Review of the South African sand and aggregate industry. Pretoria

The Department of Mineral Resource and Energy. 2020. Operating mines and quarries and Mineral processing plants in the Republic of South Africa. [Online] Available from: <https://www.dmr.gov.za/mineral-policy-promotion/operating-mines>