KENYA ASSOCIATION OF MANUFACTURERS
Driving Global Competitiveness

60 YEARS OF ADDING VALUE

BUILDING, MINING & CONSTRUCTION

SECTOR PROFILE

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The main rationale of the KAM BMC sector profile is to highlight key action areas to address challenges hampering the growth of the sector as we aim to transform Kenya into a industrial led economy

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MESSAGE FROM KAM BMC SECTOR CHAIR

The Building, Mining and Construction Sector represents a diverse but closely linked sub-sectors. It comprises four sub-sectors - Building and Construction Accessories; Cement Manufacturing; Precast and Ready-Mix Concrete; Quarry and Mining.

In 2019, the Constructions sector contributed 5.6% to Kenya's GDP, whereas the Mining and Quarry industry contributed 0.7%. Increased spending by government on major infrastructural projects such as the Standard Gauge Railway (SGR) and expansion of road networks across the country saw the sector's Compounded Annual Growth Rate (CAGR) increase by 13.8% from USD 3.1 billion in 2015 to USD 5.2 billion in 2019(KNBS).

The mining industry grew at a CAGR of 9.6% from USD 0.5 billion in 2015 to USD 0.8 billion in 2019, largely driven by the early oil pilot scheme for which 240,000 barrels were explored over a two-year period. We hope that the ongoing exploration of oil in Kenya's Lokichar Basin will drive the growth of mining and quarrying industry.

Vision 2030,Kenya Industrial Transformation Program(KITP) and Big 4 Agenda as some of key Government policy document that underscore the importance of the sector in the country development agenda for job and wealth creation.

Unfortunately, the Sector continues to face challenges that hinder its growth. These include low competition rates of construction projects; lengthy procurement procedures; disharmony in laws, polices and regulations; low technology uptake; lack of project financing packages offered by financial institutions; inadequate skilled and competent workforce and lack of a standard monitoring and evaluation workforce.

We hope that government shall put in place policies and regulations that promote local content in the sector, to enable sector players to be involved in the ever-increasing infrastructural developments across the country.

Winnie Ngumi
Building, Mining and Construction Sector Chair

MESSAGE FROM THE KAM CEO

The Building, Mining and Construction Sector is a strategic pillar of any country's economy.

Population increase leads to more needs for infrastructure, including roads and houses. Materials used for these developments are drawn from withing (cement, concrete, building accessories) and outside (steel, timber) the sector. Therefore, the sector's importance to the economy cannot be underscored.

Despite its potential to contribute significantly to the country's GDP, it is yet to reach its full capacity. This is attributed to a number of challenges that the sector continues to grapple with.

This Profile gives a highlight of these challenges, and recommendations to drive the sector's growth. We hope that all stakeholders, including government and private sector shall work together to further nurture this critical pillar of our economy.

Developing a strong Building, Mining and Construction Sector has the potential to spill over into other sectors of our economy, leading to job and wealth creation.

Phyllis Wakiaga
KAM Chief Executive

1. INTRODUCTION

The Building, Mining and Construction Sector represents a broad, diverse but closely linked sectors - Building and Construction Sector and Mining Sector. Under Kenya Association of Manufacturers (KAM), Building, the Mining & Construction Sector has representation from four subsectors namely Building and Construction Accessories, Cement Manufacturing, Precast & Ready-Mix Concrete, and Quarry and Mining sub-sectors (Table1).

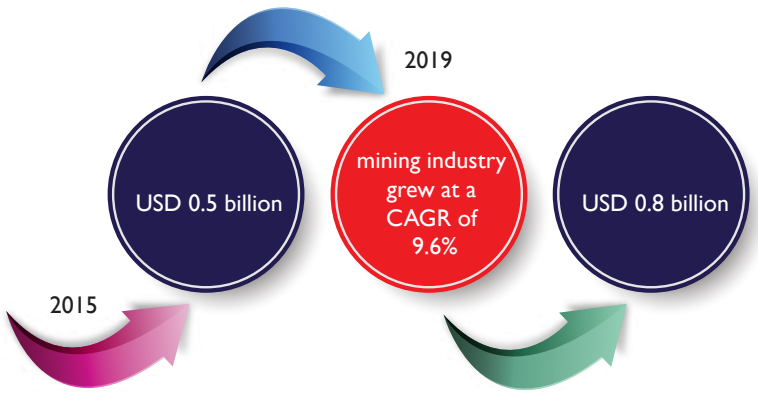
Table 1: Sub-sectors under KAM Building, Mining & Construction sector:

S/No	Sub-Sector	No of enterprises
01	Building and Construction Accessories;	45%
02	Cement Manufacturing sub sector;	10%
03	Precast & Ready-Mix Concrete Sub-Sector;	15%
04	Mining & Quarry Sub-Sector	30%

2. SECTOR OVERVIEW

In 2019, the construction, mining and quarry industry contributed 5.6% and 0.7% of Kenya's GDP respectively .The construction industry grew at a Compounded Annual Growth Rate (CAGR) of 13.8% from USD 3.1 billion in 2015 to USD 5.2 billion in 2019(KNBS). Increased spending by the Government on capital projects such as extension of the Standard Gauge Railway (SGR) line from Nairobi to Naivasha and expansion of the road network across the country drove this growth. The sector is further expected to grow due to multiple projects such as the Lamu Port and Lamu-Southern Sudan-Ethiopia Transport (LAPSSET) corridor project, rehabilitation of the current 1(one) metre gauge railway and the government's affordable housing project in line with the Big 4 Agenda, as well as the expansion of the road network, that are earmarked for roll out.

The mining industry grew at a CAGR of 9.6% from USD 0.5 billion in 2015 to USD 0.8 billion in 2019. This growth was largely driven by the early oil pilot scheme for which 240,000 barrels were explored over a two-year period. Although in its nascent stage, the ongoing exploration of oil in Kenya's Lokichar Basin will be key to the mining and quarrying industry, whose contribution to GDP has conventionally been insignificant. The proposed solutions in a white paper submitted to the State Department for Housing and Urban Development in response to COVID-19 are expected to drive the growth of this sector.



3. POLICY AND REGULATORY ENVIRONMENT

The government uses several pieces of policies and legislation to boost investment as well as manage and regulate the Building, Mining and Construction Sector in Kenya. Some of the policies, institutional and legislation are elaborated below.

3.1 Vision 2030

Vision 2030 is Kenya's economic development blueprint that aims to transform Kenya into a newly industrializing, "middle-income country providing a high-quality life to all its citizens by 2030". It recognizes the roles of the building, mining and construction sector as critical towards achieving an annual Gross Domestic Product of 10% by 2030. The Government flagged out and implemented a number projects and programs through the Second Medium -Term Plan (Second MTP 2013 - 2017) under the infrastructure sector. Key achievements included:

- Expansion and modernization of aviation facilities at Jomo Kenyatta, Moi and Kisumu International Airports, and selected airstrips countrywide.
- Completion of Berth No.19 in Mombasa.
- The first phase of Standard Gauge Rail (Mombasa to Nairobi) was completed while the construction of the second phase (Nairobi-Naivasha) is ongoing.
- Under the Road Expansion Programme, 3,250Km of roads were constructed/ rehabilitated consisting of 2,779Km constructed/rehabilitated under National Government and 471Km under County Governments, among other achievements.
- Policy, legal and institutional framework for development of Mass Rapid Transit System has been put in place. A total of six (6) stalled public buildings were completed and 299 Government building projects rehabilitated/maintained to improve the living and working conditions in Government buildings: among other achievements.

Under MTP3(2018-2022)- The government is implementing the following flagship projects, among other priority projects/programmes by the Government under MTP-3:

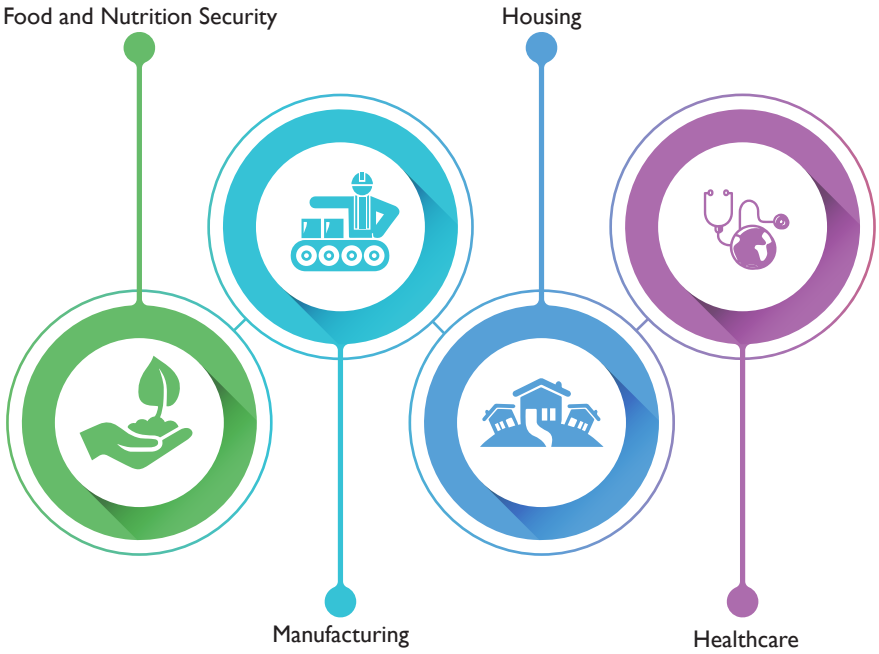
- **Expansion and Modernization of Aviation Facilities** - The programme entails completion of detailed designs and expansion/rehabilitation of Terminal 1- B, C and D at JKIA.
- **Improvement of Shipping and Maritime Facilities** - The programme focuses on expansion of the Second Container Terminal Phase II & III, development of the Dongo Kundu Free Trade Port, revamping Kisumu Port, and relocation of Kipevu Oil Terminal (KOT)
- **Expansion of Railway Transport** - It entails: construction of Standard Gauge Railway (SGR) Phase 2 (Nairobi – Malaba) which comprises Phase 2A (Nairobi –Naivasha); Phase 2B (Naivasha – Kisumu) and Phase 2C (Kisumu – Malaba); and construction of a rail link from Lamu to Miritini. In addition, the programme will include a Nairobi and Mombasa Commuter Rail Improvement project
- **Expansion of Roads Programme** with a focus to construct/rehabilitate 10,000Km of roads comprising of 2,500Km of conventional roads and 7,500Km Low Volume Sealed Roads.
- **Lamu Port South Sudan Ethiopia Transport (LAPSSET) Corridor** - The objective of the LAPSSET project is to open up Northern Kenya and provide a reliable transport corridor for Ethiopia and Southern Sudan. Under this project, the following will be implemented; extension of Isiolo Airport runway by 1.1Km to 2.5Km; surveying of international airport site and gazettement of the land for Lamu and Turkana International Airports.

3.2 Big Four Agenda

The Big 4 Agenda was announced by HE President Uhuru Kenyatta in December 2017 which targeted immediate priorities and actions between 2017 and 2022 on four areas herein refereed as pillars. These include Manufacturing, Affordable Housing, Food & Nutrition Security and Universal Health Care.

Under the Affordable Housing Pillar, the government aims to construct 500,000 Affordable Houses by 2020, creating 350,000 jobs. This is aimed at doubling the real estate & construction sector contribution to GDP to 14%.

Through the Buy Kenya Build Kenya (BKBK) policy (70% of total) for housing materials will be sourced locally. The implementation of the Affordable Housing Pillar, the Government aims at increasing investments to $1bn creating 100, 000 jobs, identify key housing components and identify manufacturers of key raw materials for the Affordable Housing project.



3.3 Construction Industry Development Policy

The Construction Industry Development Policy (2018) seeks to provide a framework for enhancing the construction industry's performance. This seeks to address the following challenges:

i. Low completion rates of construction projects.
ii. Lengthy procurement procedures.
iii. Low access to affordable project financing.
iv. Inadequate harmony in policies, laws, and regulations.
v. Low technological uptake and exposure levels of stakeholders to international best practices.
vi. Use of inappropriate construction material.
vii. Poor quality of works because of poor workmanship and use of substandard materials.
viii. Unethical conduct and unfair business practices.
ix. Inadequate skilled and competent workforce.
x. Lack of a standard monitoring and evaluation framework.
xi. Inadequate capacity for enforcement of standards and regulations.
xii. Poor practices in safety and health management.

3.4 Kenya Industrial Transformation Program KITP)

Related to Vision 2030 is KITP which was launched in 2015 by the Ministry of Industry, Trade and Cooperatives (MoITC). KITP seeks to transform the manufacturing sector in Kenya for job creation and inclusive growth (Government of Kenya, 2015). Pillar three of KITP, envisions building local content for resource and infrastructure investments where construction services and materials locally manufactured will get comparative advantage.

3.5 The National Construction Authority Act No. 41 of 2011.

This is an Act of Parliament to provide for the establishment, powers and functions of the National Construction Authority and for connected purposes.[2] The Act establishes the National Construction Authority which has been given wide ranging powers as far as the industry is concerned. The definition of construction is also very wide and covers anything from buildings, roads, dams, and telecommunication apparatus amongst others[3].

3.5.1 Statutory Bodies and Industry Associations

In Kenya, the construction industry is regulated by various parastatals in addition to NCA. These institutions are mandated to manage, develop, rehabilitate, and maintain public roads, develop and maintain public buildings as well as residential houses. These institutions include National Housing Corporation (NHC), Kenya Urban Roads Authority (KURA), Kenya Rural Roads Authority (KERRA), and Kenya National Highways Authority (KENHA).

In addition to government parastatals, there are governing boards and industry associations that are mandated to regulate the market and monitor the conduct of players in the industry. These include Board of Registration for Architects and Quantity Surveyors, Engineers Board of Kenya (EBK), Architectural Association of Kenya (AAK) and the Institute of Quantity Surveyors of Kenya (IQSK).

[2] See http://kenyalaw.org/kl/fileadmin/pdfdownloads/Acts/NationalConstructionAuthorityAct_No41of2011.pdf

4. SUB-SECTORS

The Building, Mining and Construction sector represents a broad, diverse but closely linked sectors - Building Construction Sector and Mining Sector. Under Kenya Association of Manufacturers (KAM), Building, Mining & Construction sector has representation from four subsectors namely Building Accessories, Cement Manufacturing, Precast & Ready-Mix Concrete, and Quarry and Mining sub-sectors (Table1).

4.1 Cement sub-sector

There are 8 cement manufacturers in Kenya with a total installed grinding capacity of 9,924,400.00 MT per annum (Table 2). Analysis of data from Kenya National Bureau of Statistics (table 3) shows that cement production dropped marginally by 1.0 % from 6,069.9 thousand tonnes in 2018 to 5,967.2 thousand tonnes in 2019. Similarly, cement consumption and stocks dropped by 2.5% to stand at 5,933.3 thousand tonnes in 2019. Further, analysis shows that export of cement, which has been declining since 2016, decreased further from 144.3 thousand tonnes to 2018 to 60.2 thousand tonnes in 2019. On the other hand, cement imports increased by 14.6% from 23.0 thousand tonnes in 2018 to 26.4 thousand tonnes in 2019. There are two probable reasons that make cement less tradable commodity across borders:

- It is a bulky commodity implying that transport costs can wipe any profit margin.
- Partner states in the EAC have registered increased investments in cement manufacturing.

Table 2: List of Cement manufacturer, 2020

S/No	Name	Status of Operation
01	Bamburi Cement Limited	In operation
02	East Africa Portland Cement Company (EAPCC)	In operation
03	Mombasa Cement Limited	In operation
04	National Cement Limited	In operation
05	Savannah Cement Limited	In operation
06	Karsan Ramji & Sons Limited (Ndovu Cement)	In operation
07	Rai Cement Limited	In operation
08	Global Choice Limited	Not yet started
09	Safari Cement Limited	Not yet started

Data source: KAM data ,2020

[3] See: http://www.erubiengineering.com/?p=43

Table 3: Production, Consumption, Import and Export of Cement in Kenya (000 tons), 2015-2019

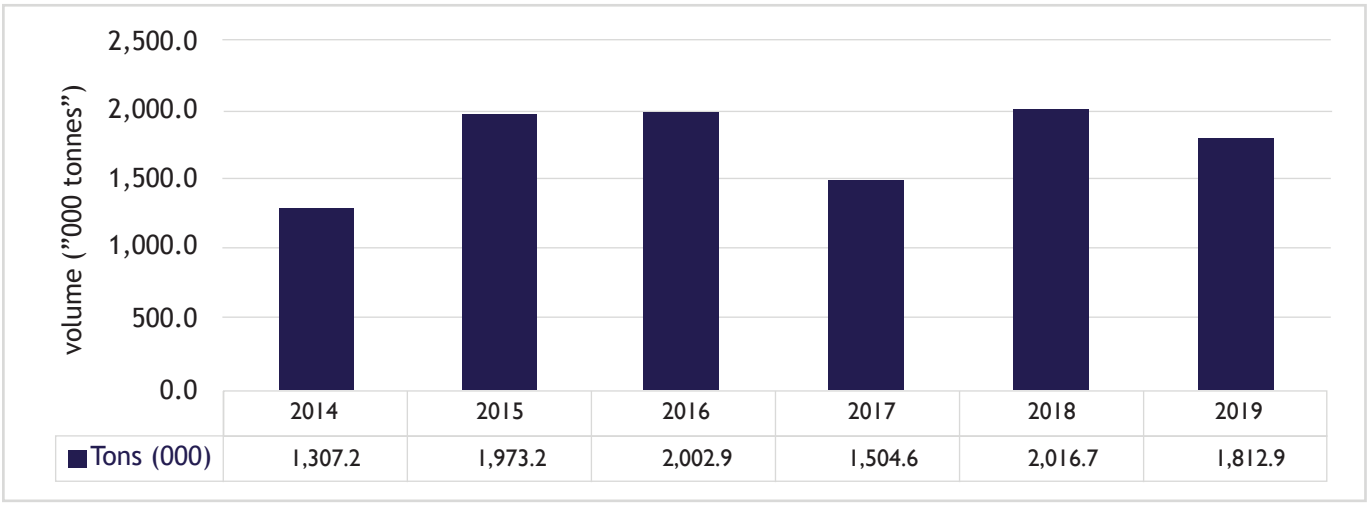
Item	2015	2016	2017	2018	2019
Production	6,352.9	6,715.4	6,230.3	6,069.9	5,967.2
Imports	37.6	15.1	14.7	23.1	26.4
Domestic Exports	681.6	420.4	388.4	144.3	60.2
Consumption & Stock	5,708.8	6,310.1	5,857.9	5,948.7	5933.3

Data source: KNBS 2020

4.1.1 Cement Clinker

One of the critical raw materials used in production of cement is clinker and constitutes about 60% of the finished cement. Demand for clinker has been increasing over the years. This is attributed to increased griding capacity among cement manufacturers - griding capacity was 9,924.4 thousand tons in 2019 (KAM,2020). According to KAM Sub-Sector data, three manufactures (Mombasa Cement, National Cement and EAPCC) have backward integrated clinker production and as of 2019 their combined capacity was 2,576 thousand tonnes of clinker per annum, mainly used for their own cement production. The other manufacturers rely on imported clinker. Figure 1 shows clinker importation, which dropped from 2,016.7 thousand tonnes in 2018 to 1,813.9 thousand tonnes in 2019.

Figure 1: Cement clinker imports in Thousand tonnes, 2014-2019



Data source: KNBS

4.1.2 Clinker Import duty rates

Cement clinker under the East Africa Community Common External Tariff attracts 10% (Table 4)

Table 4: Clinker import Duty

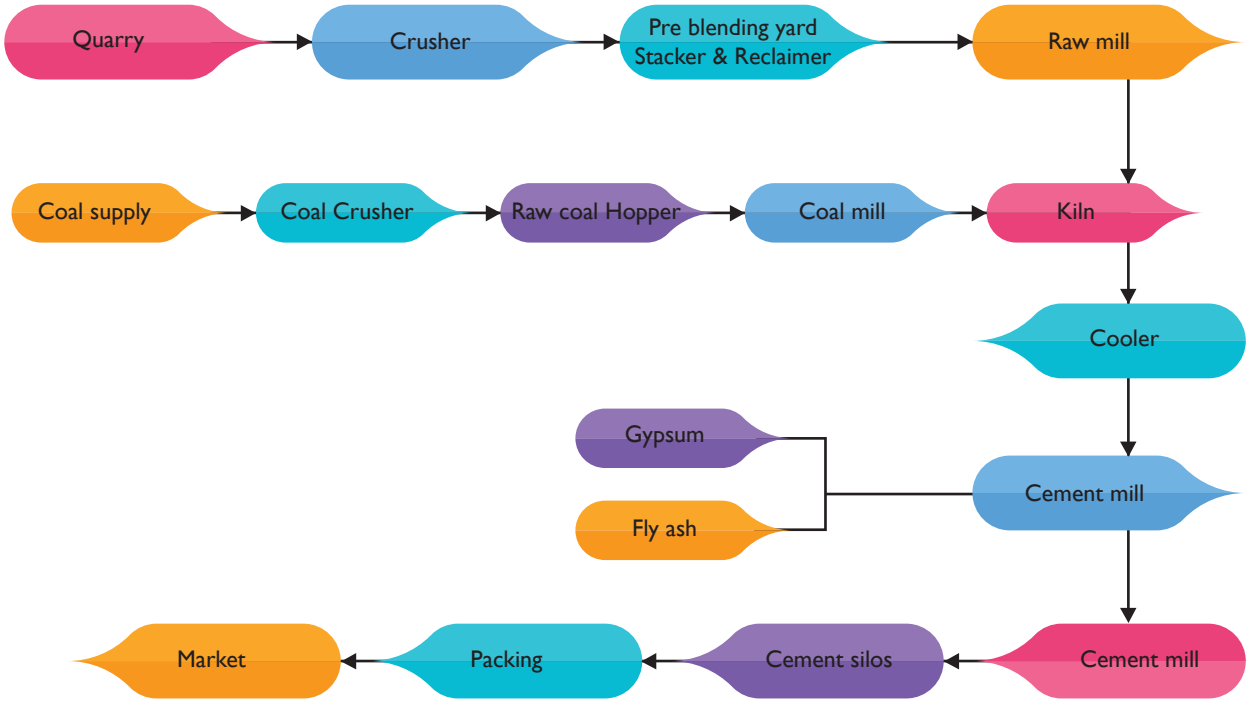
HS code	Description	Rate
2523.10.00	Cement clinkers	10%

Data source: EAC CET (2017)

4.1.3 Basic Value chain of cement production

The cement manufacturing process involves three components: the mining and preparation of inputs; the chemical reactions that produce clinker; and the grinding of clinker with other additives to produce cement. Figure 2 shows basic cement production process.

Figure 2: Basic cement Production process



Source: Authors illustration

4.1.4 Challenges facing the cement industry

Despite its strong growth prospects, the industry faces a number of challenges, including the high cost of electricity, depressed construction industry, illicit trade and inter-county levies and charges. Table 5 summarizes the cement industry player challenges and intervention required.

Table 1: Sub-sectors under KAM Building, Mining & Construction sector:

Issue	Brief description	Intervention
High cost of electricity.	Energy is a key enabler under Kenya's Vision 2030. Electricity is one of the main inputs in the manufacturing process with cement being one of the highest consumers of electricity which accounts for 40-50% of total conversion cost (KAM MPA, 2018). However, Kenya ranks amongst the countries with the highest average end user tariffs in the region. Almost all manufacturers have back-up generators indicating that outage of electricity and therefore reliability is of great concern. In this regard, the cost of manufacturing increases thus affecting the affordability of the final product.	The Ministry of Energy should come up with policies that reduce the cost of electricity and implement the off-peak power supply plan. These includes removing all taxes, levies, and charges on power bills for manufacturers to reduce the cost of power.
Depressed demand of cement.	The demand for cement has reduced as activity in the real estate sector has declined in Kenya. The real estate and construction sectors' contributions to GDP has decreased from 7.1 to 7.0 and 5.6 to 5.4 between 2017 and 2018 for real estate and construction sectors, respectively. For instance, certain changes in financial industry such as over domestic borrowing by the government and the recent repealed interest capping have seen a constrained availability of credit going to building and construction sector. This has resulted to falling number of building approvals. For this reason, the producers of cement have been forced to reduce their utilisation rate.	The government should ensure that all the planned projects including Construction of Affordable Housing Units, LAPSSET and Major infrastructure projects strictly utilize the local cement. The Kenya Mortgage Refinance Company should support affordable housing by unlocking liquidity for this pillar. This is by providing long term funds to primary mortgage lenders (Banks, Microfinance Banks & Saccos) to increase the availability and affordability of home loans to Kenyans.
Inter-county trade levies and charges	The Constitution of Kenya 2010 gave birth to devolution by creating 47 counties in the country. In order to raise their own revenues, various counties have introduced inter-county levies and charges. These are charged whenever the manufacturers are transporting their products from one county to another. This increases the cost of doing business as the businesses have to absorb such costs by increasing the price of the final products which affects the consumption negatively.	The government through the National Assembly and Senate should enact the County Own Revenue Sourcing Bill to ensure that counties do not charge unnecessary levies and charges. The single business permit should cater for all charges and levies across the counties to harmonize the inter-county trade activities.

4.2 Mining sector

After decades of negligence, the Mining industry in Kenya received prominence under the Second Medium Term Plan (2013-2018) as a key contributor to the envisaged and sustained Gross Domestic Product growth of ten (10) per cent per annum by 2030. Initially, Kenya was mapped as an agricultural zone and in previous generations, this led to reduced exploration for minerals. The mining industry is dominated by the production of non-metallic minerals encompassing industrial minerals such as soda ash, fluorspar, kaolin, and some gemstones that dominate Kenya's minerals industry. The mining sector makes a negligible contribution to the economy, accounting for less than 1% GDP, majority of which is contributed by soda ash, an important raw material in the construction sector.

4.2.1. Performance of Mining sector

a) Production

Total earnings from mineral production, as indicated in Table 6 declined by 5.5% from Ksh 30.8 billion in 2018 to Ksh 29.1 billion. Total value of the three titanium ore minerals dropped from Ksh 20.3 billion recorded in 2018 to Ksh 19.6 billion in the 2019. Ilmenite and Zircon minerals' values declined by 18.0 and 11.1% respectfully while that of Rutile mineral increased by 13.2% in 2019. Earnings from crude oil produced was KSh 1.5 billion in 2019.

Table 6: Value of mineral production in Ksh Million, 2015-2019

Mineral	2015	2016	2017	2018	2019
Soda Ash	6599.6	6227.2	6,259.7	6906.1	5,083.1
Fluorspar	1,427.7	868.8	129.7	-	-
Salt	179.8	218.5	98.9	185.2	181.0
Crushed refined soda	409.7	494.4	1,108.9	579.9	435.1
Carbon dioxide	525.6	831.8	589.4	225.8	286.9
Diatomite	70.6	75.2	79.4	87.6	51.5
Gold	978.1	970.3	1,510.8	2,041.3	1,408.0
Gemstones(cut)	36.9	77.5	128.6	107.5	84.9
Gemstones(rough)	798.4	936.0	238.3	416.5	440.0
Titanium ore Minerals	12,819.0	10,087.1	18,526.8	20,297.6	19,643.0
Ilmenite	3,763.0	2,438.7	7,719	6,617.9	5,425.0
Rutile	6,329	5,372.2	6,646	8,469.8	9,587.0
Zircon	2,727	2,276.2	4,162	5,209.9	4,631.0
Crude oil	-	-	-	-	1,483.7
Total	23,863.4	20,786.8	28,670.5	30,847.5	29,097.2

Data source: KNBS

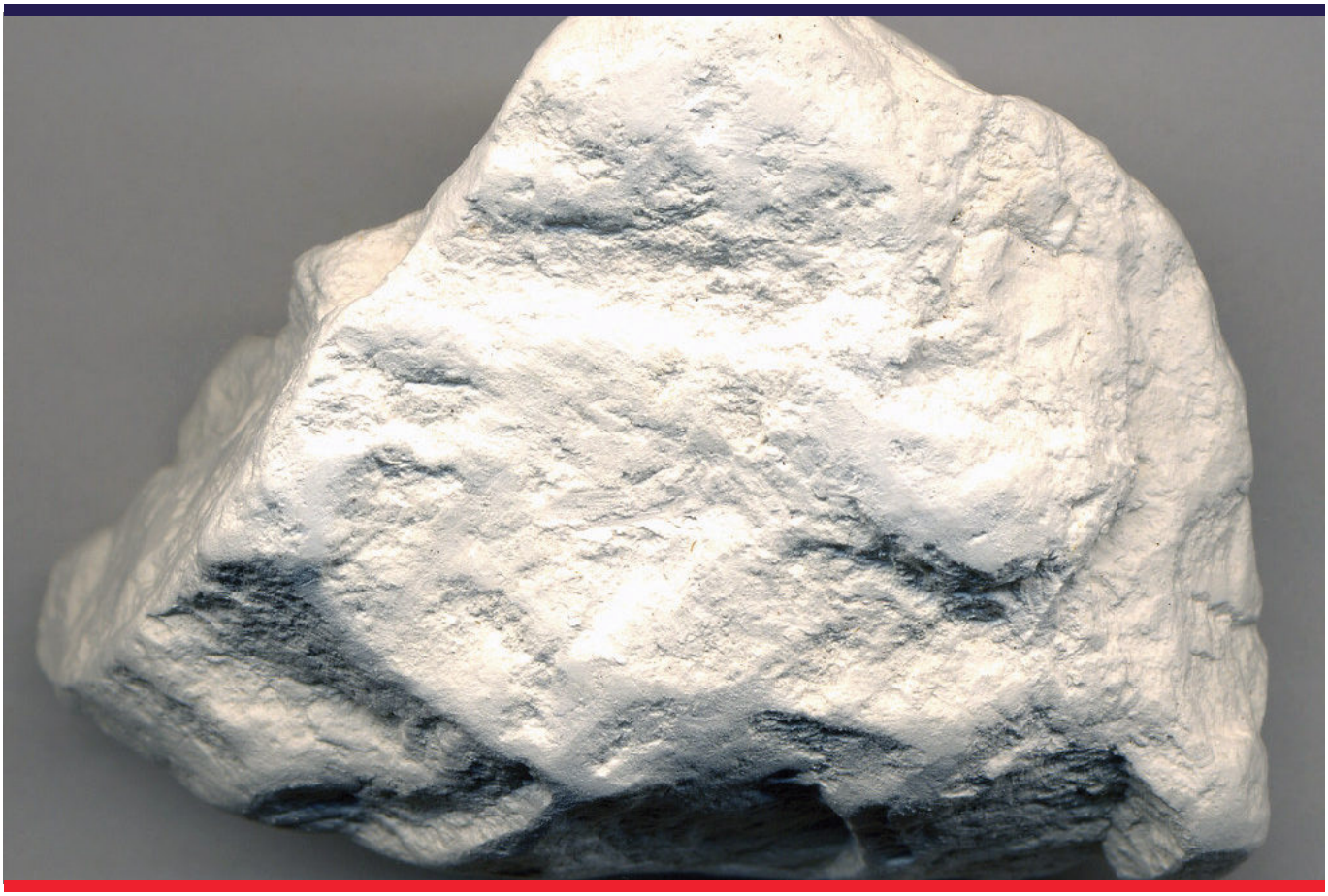
b) Exports

Table 7 presents the average export prices of soda ash and titanium ore minerals. The average price per tonne for soda ash and Titanium Ore minerals increased from KSh 22.6 thousand and KSh 27.2 thousand in 2018 to KSh 24.0 thousand and KSh 32.6 thousand in 2019, respectively

Table 6: Value of mineral production in Ksh Million, 2015-2019

Mineral	2015	2016	2017	2018	2019
Soda Ash	22,925	20,998	20,694	22,642	23,999
Fluorspar	20,368	17,313	17,795	-	-
Titanium Ore and Concentrates	19,100	17,968	25,840	27,249	32,556

Data source: KNBS



4.2.2. Reforms in the mining sector

In April 2016, Ministry of Mining launched the Mining and Minerals Policy that sets out the framework for mining activity and underpins the Mining Act, 2016. The policy takes a holistic approach to the sector, ensuring that key issues related to sustainable exploitation of natural resources such as community engagement, environmental issues, and beneficiation from mining are addressed.

Later on, in May 6th,2016, the Mining Act (2016) was assented. The Act reflects the spirit and intent of the Constitution of Kenya (2010) to ensure that activities related to mining and exploitation of minerals are beneficial to the citizens of Kenya. In keeping with the provisions of the Constitution of Kenya 2010, the Mining Act 2016 vests the ownership of minerals to the national government in trust for the people of Kenya. The law applies to all minerals, which are detailed in the First Schedule, except for petroleum and hydrocarbon gases.

4.2.3 Mineral occurrences in Kenya

Region	Minerals
Rift Valley	Soda Ash, Feldspar, Limestone Gypsum, Gemstones, Marble & Granite (dimension stone), Carbon Dioxide Gas, Fluorspar Gemstones (Baringo Ruby), Diatomite, Gypsum Gold, Chromite, Gemstones, Manganese, Vermiculite Gold
Western	Gold, Dimension stone
Nyanza	Iron Ore, Copper Iron Ore, Gold
Central	Carbon Dioxide, Diatomite Gypsum, Pozzolana, Coal, Iron Ore, Copper, Gemstones, Limestone, Magnetite Vermiculite, Gemstones Iron Ore, Manganese, Chromite
Coast	Iron Ore, Gemstones, Manganese, Graphite, Heavy Mineral sands (titanium minerals), Silica Sand, Rare Earth Elements, Niobium Titanium Minerals, Manganese, Barytes, Gypsum
North Eastern	Gypsum

Source: Ministry of Mining

[4] Flourspar mining ceased operations in 2018

4.2.3.1 Institutional establishments

Table 8 shows key Institutional changes following enactment of Mining Act, 2016.

Table 8: Institutions established under the Mining Act,2016

Institution	Role	Observation
Directorate of Mines	Supervise and promote activities related to the development of exploitation of minerals and mineral resources.	Takes up a chief role in monitoring and enforcement of provisions under the Act and works through appointed inspectors of mines.
Directorate of Geological Survey	Consolidates GoK's efforts in collection and storage of geological data related to prospecting in a national repository.	Takes up a chief role in monitoring and enforcement of provisions under the Act and works through appointed inspectors of mines.
Mineral Rights Board	Advises the Cabinet Secretary on grant, rejection, retention, renewal, suspension, revocation, variation, assignment, trading, tendering, or transfer of Mineral Rights Agreements. Other roles include regulation of fees to be paid on different minerals.	Has the power to establish additional committees to fulfil its mandate. Is headed by a Chairman and has members appointed through merit and various qualifications. CS appoints the Council of County Governors nominee and two industry professionals to sit on the Board.
National Mining Corporation	Acts as the investment body on behalf of the national government in respect of minerals.	Can acquire shares or interest in any firm, company, or other body of persons, whether corporate or unincorporated as long as they are engaged in mining activities. Initial capital to be provided by Parliamentary order National Mining Corporation Regulations are to be published.
Minerals and Metal Commodity Exchange	Exchange will facilitate efficiency and security in mineral trade transactions.	Regulations related to establishment and functions are to be published.
County office of MoM	Established by the CS and is the MoM representative in the counties with responsibility for managing as the granting, renewing, and revoking artisanal mining permits, maintaining a register of artisanal miners, and maintaining fair-trade.	Headed by an officer who reports to Director of Mines. Provides training facilities and assistance necessary for effective and efficient artisanal mining operations. Facilitates the formation of artisanal association groups or cooperatives for the miners.
County Artisanal Mining Committee	Assists the Ministry of Mining in managing mining activities in the counties together with the county office.	Includes a governor's representative and representative from the Ministry of Mining. Three (3) of its members are elected by the artisanal miner's association. Acts as NEMA's representative in the county. Act as advisors to the representative of the director of Mines in the granting, renewal, or revocation of artisanal mining permits.

Source: KPMG

4.2.3.2 Licensing

The new mining law differentiates between three major types of operations:

- Large scale operations.
- Small scale operations
- Artisanal mining operations

The table 9 below summarizes the types of licenses and permits allowed under the Mining Act 2016.

Table 9: Type of licenses and permits under Mining Act of 2016

Operations	Licence type	Eligibility	Area	Terms	Restrictions
Large scale	Reconnaissance licence	Citizen with sound mind, 18 years of age and above, and required technical and financial expertise; or corporate body registered and established in Kenya.	✓Minimum – one (1) block. ✓Maximum – 5,000 contiguous blocks.	✓ Maximum: 2 years ✓ Condition: Not renewable ✓ Non-exclusive ✓ Work commencement: 3 months from licence approval ✓ Fees: annual charge based on area of recon ✓ Reports: semi-annual and annual ✓ Amendments: Allowable on application to CS	✓Existing mineral rights. ✓Mining license approved for that area. ✓Finds and data collected are property of the Government of Kenya; at end of operations all data and records must be surrendered. ✓No subsurface work. ✓Not transferable.
	Prospecting licence	Citizen with sound mind, 18 years of age and above, and required technical and financial expertise; or corporate body registered and established in Kenya.	✓Minimum – one (1) block. ✓Maximum – 1,500 contiguous blocks	✓ Maximum: three (3) years. ✓ Condition: Renewable, not more than two (2) times, not more than three (3) years. ✓ Exclusive. ✓ Work commencement: 3 months after obtaining licence approval or at approved time in work program. ✓ Fees: None. ✓ Reports: Issued quarterly or on requirement basis by the CS. ✓ Amendments: Allowable on application to the Cabinet Secretary.	✓Minerals found belong to the national government. ✓Obligation to notify of any discoveries immediately. ✓Not transferable unless under consent by the Cabinet Secretary. ✓Work program budgets must be paid to the Ministry of Mining if work obligations are not met within stipulated time. ✓Renewals submitted 3 months before expiry. ✓Relinquishment required with each renewal: minimum of 125 blocks and not less than ½ the number of blocks ✓Contiguous prospecting licenses for the same term and mineral are consolidated
	Retention licence	Holder of prospecting license that has identified a mineral deposit with potential commerciality, but deposit cannot be developed immediately.	✓Same as prospecting license or mining license.	✓ Maximum: two (2) years. ✓ Condition: Applies to an area whole, or a part, of the area covered by a prospecting license. ✓ Condition: Renewable, once and for not more than two (2) years.	✓The Cabinet Secretary may compel the holder to apply for a mining license if discoveries are commercial and recoverable. A license may be revoked if the holder of retention license does not show just cause for declined application.

Operations	Licence type	Eligibility	Area	Terms	Restrictions
	Mining licence	Citizen with sound mind, 18 years of age and above, and required technical and financial expertise; or corporate body registered and established in Kenya. Holder of prospecting license who has notified the Cabinet Secretary of discovery in their licensed areas.	✓Same as prospecting license, reconnaissance license, or retention license.	✓ Maximum: 25 years or forecast life of the mine (whichever is shorter). ✓ Condition: Exclusive. ✓ Condition: Renewable, for maximum of 15 years or life of the mine, whichever is shorter. ✓ Work commencement: 6 months after obtaining licence approval or at approved time in work program. ✓ Reports: Issued quarterly or on requirement basis by the Cabinet Secretary. ✓ Amendments: Allowable on application to the Cabinet Secretary.	✓Cannot be issued on land, which is the subject of a prospecting licence, reconnaissance licence, a retention licence unless the applicant is holder of above licences, or a new applicant has consent from the above licences holders. ✓Renewals submitted 1 year before expiry. ✓Obligation to notify of any new/additional discoveries immediately. ✓Obligation to notify the Cabinet Secretary of: • cessation of activities – at least 6 months. • suspension – at least 3 months. • curtailment – at least one month. • or otherwise within 3 days of halting events.
	Mineral Agreements	Holder of mining license.	✓Same as mining licenses.	✓ Consultation of National Treasury required. ✓ Must be submitted and ratified by National Assembly and Senate. ✓ The Cabinet Secretary has power to negotiate. ✓ All mineral agreements shall be public and made accessible to the public.	✓Consultation of National Treasury required. ✓Must be submitted and ratified by National Assembly and Senate. ✓The Cabinet Secretary has power to negotiate. ✓All mineral agreements shall be public and made accessible to the public.
Small scale	Reconnaissance permit	Citizen or corporate body with at least 60% shareholding by citizens.	✓Non-exclusive rights	✓ Non-exclusive rights	✓If rights are over community land, must have consent from community land administrators or county governments, if community land is un-alienated. ✓Consent will be given by signing a legally binding agreement with Government or the mining rights holder, or adequate compensation given.
	Prospecting permit	Citizen or corporate body with at least 60% shareholding by citizens.	✓Minimum – not specified. ✓Maximum – 2 contiguous blocks.	✓ Maximum: 5 years ✓ Condition: Renewable, once for a maximum of 5 years	✓Doesn't specify whether rights are exclusive or non-exclusive.

Operations	Licence type	Eligibility	Area	Terms	Restrictions
	Mining permit		✓Minimum – not specified ✓Maximum – 2 contiguous blocks	✓ ✓ ✓	
Artisanal Mining	Artisanal Mining Permit	Citizen having attained age of majority belonging to an artisanal mining cooperative association or group.	✓Not specified	✓ Maximum: three (3) years. ✓ Condition: Applies to an area whole, or a part, of the area covered by a prospecting licence. ✓ Condition: Renewable, once.	✓Maximum: three (3) years. ✓Condition: Applies to an area whole, or a part, of the area covered by a prospecting licence. ✓Condition: Renewable, once.
Dealers	Minerals Dealers	Citizen or corporate body with at least 60% shareholding by citizens.	✓N/A	✓ Maximum: one (1) year. ✓ Annual expiry. ✓ Condition: Renewable. ✓ Reports: Issued quarterly noting register of dealings.	✓Bankers can deal in minerals but cannot export them.
	Diamond Dealers'	Citizen or corporate body with at least 60% shareholding by citizens.	✓N/A	✓ Maximum: one (1) year ✓ Annual expiry ✓ Condition: Renewable ✓ Reports: Issued quarterly noting register of dealings.	✓Bankers can deal in diamonds. ✓Can appoint an agent who must be registered with the Ministry of Mining. ✓May be required to post bonds or cash deposits to pay any prescribed fees or royalties which may become payable
	Export Permit	Mineral right holder Mineral Dealer Diamond Dealer	✓N/A		✓Mineral right holder ✓Mineral Dealer ✓Diamond Dealer

Source: KPMG

Key challenges facing the mining industry in Kenya

1. Access to land for exploration and mining.
2. Inadequate geological data and information
3. Mineral marketing and value addition
4. Inadequate funding
5. Environmental degradation.
6. Inadequate institutional and human capacity

4.3 Building and construction accessories sub-sectors

KAM Building and Construction Accessories sub-sector brings together the manufacturers of construction glass, ceramic tiles (wall and floor) products, marbles, roofing tiles (stone coated, clay and concrete), bricks, alternative building materials etc.

4.3.1 Ceramic tiles.

There are two major producers of ceramic tiles in the country namely Saj Ceramics and Keda (Kenya) Ceramics Limited with a combined installed capacity of 32,000,000 square meters per annum. However, Kenya imports ceramic products from other countries across the globe. Table 10 shows the list of exporting countries for a product imported by Kenya. Most of the imported ceramic tiles originate from India, China, UAE, and Europe.

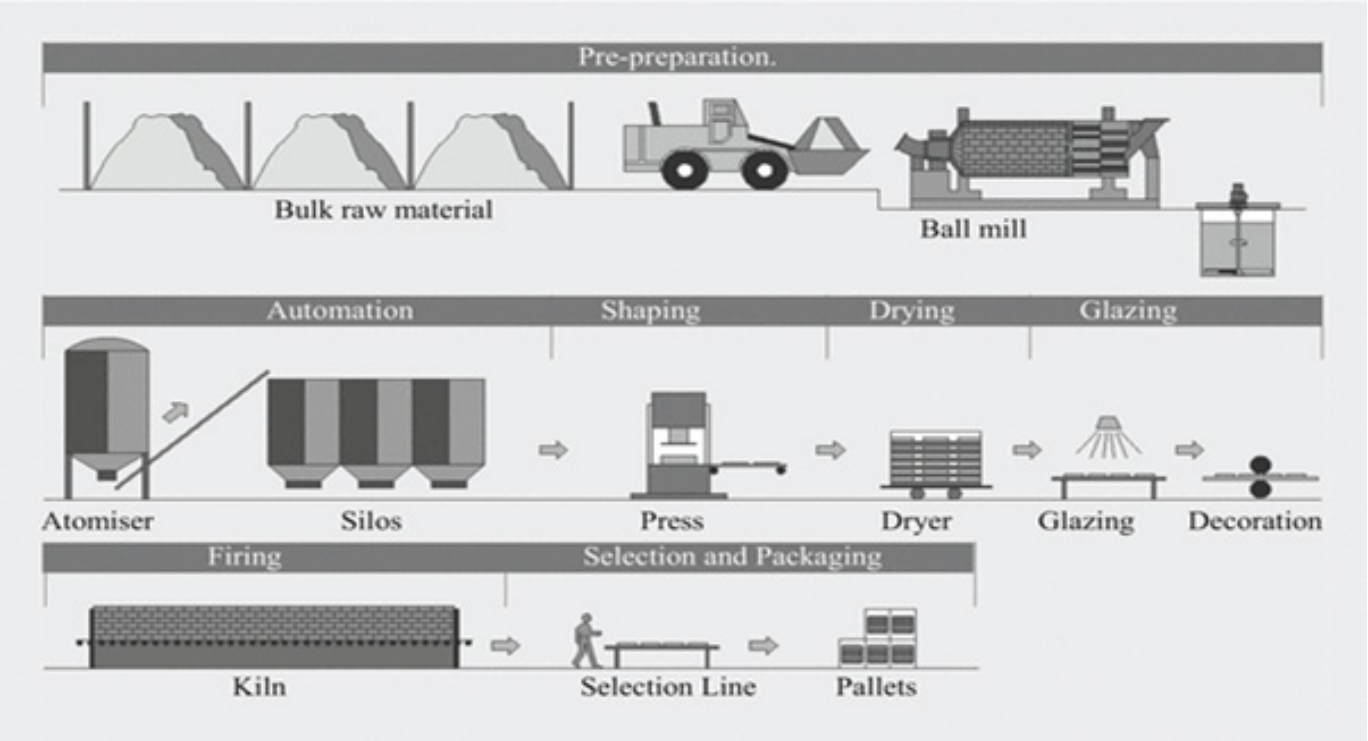
Table 10: Top suppliers of Kenya imported ceramic products.

Exporters	2015	2016	2017	2018	2019
China	53,859	60,772	43,319	32,966	27,141
India	13,180	14,082	13,925	15,748	17,269
Spain	4,587	5,390	3,747	4,680	4,085
Egypt	3,850	3,267	2,836	3,922	5,079
United Arab Emirates	3,594	2,423	2,531	2,020	1,566
Italy	1,730	1,536	1,980	2,619	3,684
Germany	1,465	1,978	1,617	1,241	3,103
South Africa	1,450	850	794	1,009	1,212
Turkey	990	930	626	846	1,060
United States of America	571	137	115	147	180
Indonesia	544	633	632	577	364
United Kingdom	543	413	181	291	312
Hong Kong, China	472	70	373	716	25
Malaysia	395	326	683	981	529
Thailand	249	715	210	218	280
France	138	36	26	39	68
Portugal	70	26	125	31	118
Others	460	974	8,578	17,806	21,873
Total imports of ceramic products	88,147	94,558	82,298	85,857	87,948

Data source: ITC

The main raw materials used to manufacture ceramic tiles are Feldspar, Silica Sand and Clay whereby 95% of raw materials are sourced locally. Figure 11 demonstrates the basic tiles manufacturing process.

Table 11: Basic process to manufacture ceramic tiles



Source: Own Conceptualization.

4.3.2 Stone coated roofing tiles

Stone coated roofing tiles are made from steel or other metals. The process of making stone coated roofing tiles involves coating metal plates with stone chips- attached to the steel with an acrylic film. This aims to make the roof more durable whilst retaining the aesthetic advantages of a more traditional roofing material. The finished tiles are then oven baked to ensure durability.

The key raw materials include: Steel Base, Aluminium-Zinc Alloy Coating, Acrylic Primer, Basecoat, Ceramic Coated Stone Granules, and acrylic over glaze. In Kenya, the industry has three major players who include Space & Style Limited, Rexe Roofing products Limited and Tiles & Carpet Limited.

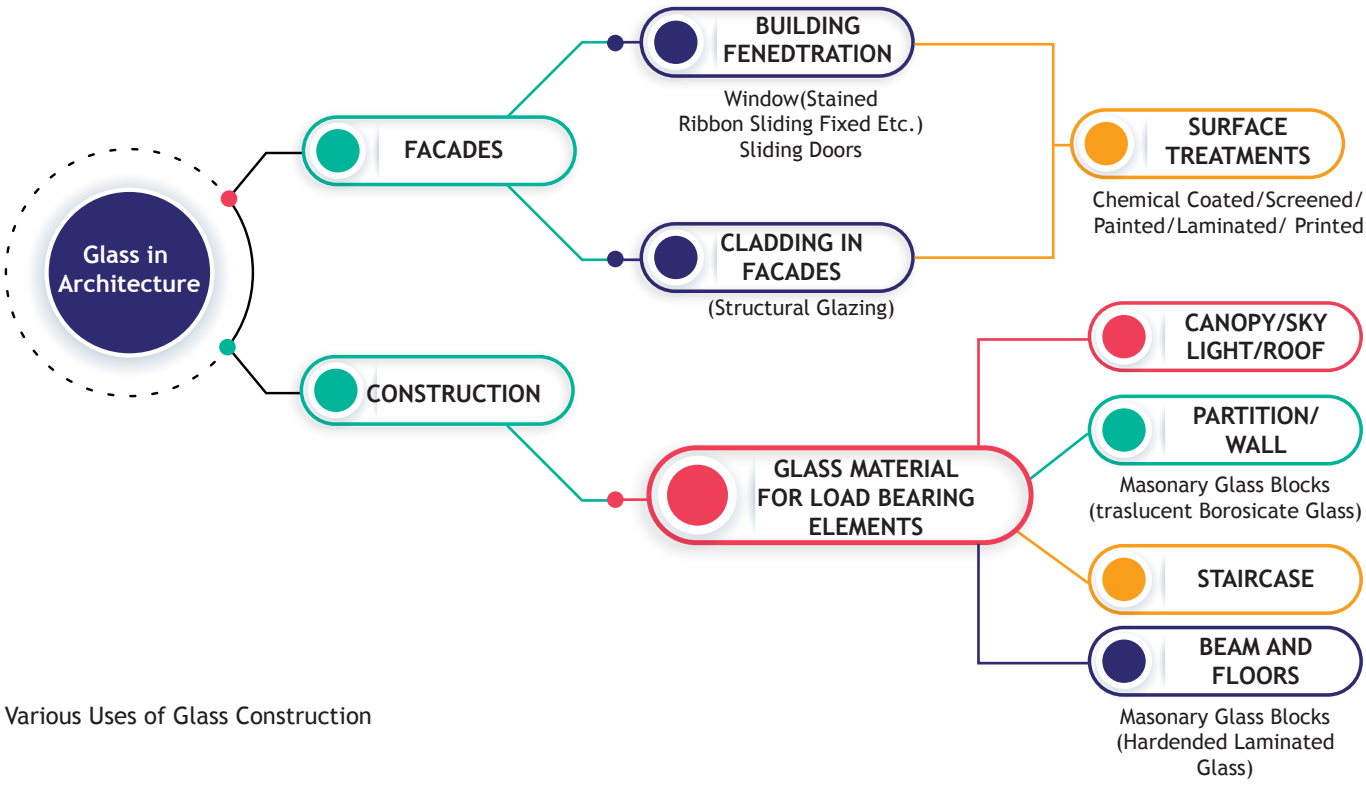
4.3.3 Glass Industry

Glass has a diverse usage - mainly in construction, automotive and packaging sectors. Figure 3 shows uses of glass in the construction industry. Production of glass involves two main methods, including the float glass process that produces sheet glass, and glassblowing that produces bottles and containers. The float glass is majorly imported from Europe, Middle East, and Egypt while for glass blowing 85% of the raw materials are sourced locally.

4.3.3.1 Construction/Architectural Glass

Construction/Architectural glass is used as a building material. It is most typically used as transparent glazing material in the building enclosure, including windows in the external walls.

The glass is also used for internal partitions and as an architectural feature. When used in buildings, glass is often of a safety type, which include reinforced, toughened, and laminated glasses.



Various Uses of Glass Construction

4.3.3.2 Types of glass

a) Float Glass:
Float glass is also called soda lime glass or clear glass. This is produced by annealing the molten glass and is clear and flat. Its modulus of rupture is 5000-6000 psi.. It is available in standard thickness ranging from 2mm to 20mm and has weight range in 6-26kg/m2. It has too much transparency and can cause glare. It is used in making canopies, shop fronts, glass blocks and railing partitions, among others.

b) Tinted Glass:
Certain additions to the glass batch mix can add colour to the clear glass without compromising its strength. Iron oxide is added to give glass a green tint; sulphur in different concentrations can make the glass yellow, red or black whereas copper sulphate can turn it blue.

c) Toughened Glass
This type of glass is tempered, may have distortions and low visibility but it breaks into small dice-like pieces at a modulus of rupture of 3600 psi. It is therefore used in making fire resistant doors. They are available in the same weight and thickness range as float glass.

d) Laminated Glass:
This type of glass is made by sandwiching glass panels within a protective layer. It is heavier than normal glass and may cause optical distortions as well. It is tough and protects from UV radiation (99%) and insulates sound by 50%. Used in glass facades, aquariums, bridges, staircases and floor slabs.

e) Shatterproof glass:
It is made by adding a polyvinyl butyral layer. This type of glass does not from sharp edged pieces even when broken. Used in skylight, windows, flooring among others.

f) Extra clean glass:
This type of glass is hydrophilic, that is, water moves over them without leaving any marks and photocatalytic. They are covered with nanoparticles that attack and break dirt making it easier to clean and maintain.

g) Double Glazed Units:
These are made by providing an air gap between two glass panes in order to reduce heat loss and gain. Normal glass can cause an immense amount of heat gain and up to 30%of loss of heat of air conditioning energy. Green, energy efficient glass can reduce this impact.

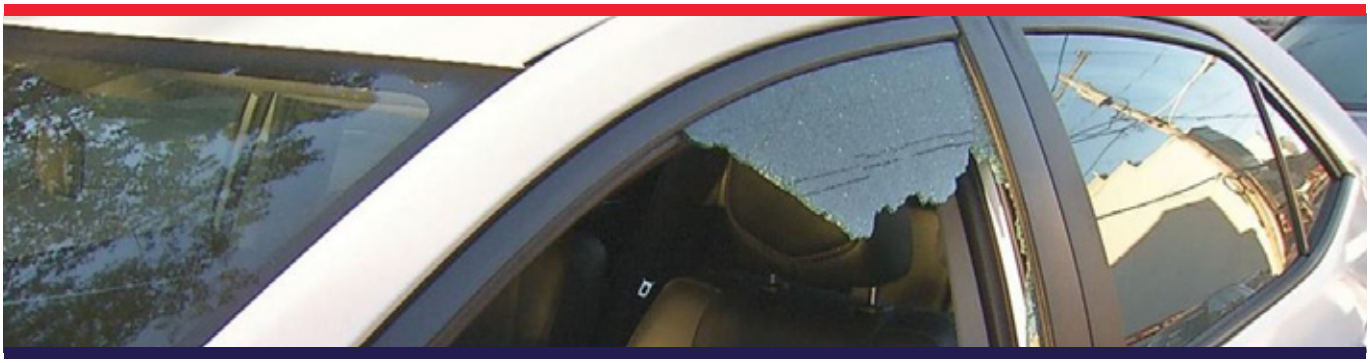
h) Chromatic glass:
This type of glass can control daylight and transparency effectively. These glasses are available in three forms - photochromatic (light sensitive lamination on glass), thermochromic (heat sensitive lamination on glass) and electrochromic (light sensitive glass the transparency of which can be controlled by electricity switch). It can be used in meeting rooms and ICUs

i) Glass wool:
Glass wool is a thermal insulation that consists of intertwined and flexible glass fibres, which causes it to "package" air, and consequently make good insulating materials. Glass wool can be used as filler or insulators in buildings, also for soundproofing.

j) Glass blocks:
Hollow glass wall blocks are manufactured as two separate halves and, while the glass is still molten, the two pieces are pressed together and annealed. The resulting glass blocks will have a partial vacuum at the hollow centre. Glass bricks provide visual obscuration while admitting light.

4.3.3.3 Automotive glass

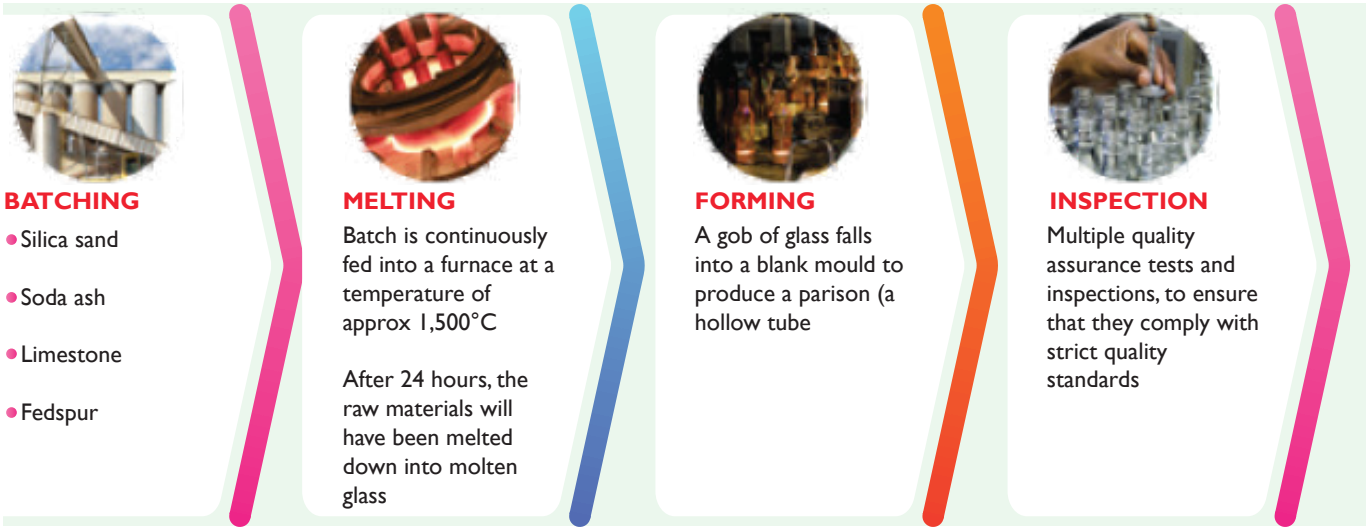
Automotive glass includes windscreens, side and rear windows, and glass panel roofs on a vehicle. The major types of automotive glass products include tempered, laminated, and double-glazed glasses.



4.3.3.4 Packaging Glass

There are Two (2) local glass manufacturers in Kenya, Consol Kenya limited established in 1987 and Milly Glass works limited established in 1992 and both directly employ 805 people. The combined installed capacity is estimated at 90,000 tonnes as of 2019. The local glass manufacturer sources approximately 85% of its raw materials locally. These include but to mention a few, sand, silica, limestone, soda-ash, and chemicals for coloring. Therefore, the industry plays a vital role in supporting and exploiting local resources. Globally, this sector has strong forward linkages to the food and beverage sector, pharmaceutical sector, and SMEs. In Kenya, the main glass users are industries in the manufacture beer and spirits, pharmaceutical sector, and non-alcoholic beverage sector.

Manufacturing process of packaging glass



Source: Own conceptualization

4.4 Precast & Ready-Mix Concrete sub sector

The sub sector consists of manufacturers of precast concrete products and ready mix ideal for use in construction sites. The precast concrete products consist of the following products: Utility structures (electricity poles), water & wastewater products, transportation & related traffic products, modular paving etc. Precast concrete is rapidly gaining a foothold in the Kenyan market. The number of companies venturing into the business have increased over the recent years.

On the other hand, ready mix concrete (RMC) (see figure 4), is a new innovation where concrete is manufactured in a batch plant with a set engineered mix design. Ready-mix concrete is a mixture of cement, sand, and aggregate prepared in the factory according to customer specifications and delivered to a client's construction site ready for use.

The preference for ready mix concrete has grown among developers in the past few years especially in high-density residential neighbourhoods due to lack of space. The solution has also grown in favour among developers putting up large-scale constructions. Kenyan cement manufacturers and dealers have grown partnerships with local concrete mixing companies to increase their capacity for the ready-mix concrete delivery business.

Figure 4: Ready mix concrete (RMC) manufacturing process

4.5 Quarry Sub-Sector:

Quarrying is one of the biggest industries in the Building, Mining and Construction sector. The Sector is commonly associated with stone excavation which is a process of extracting materials which are neither fuel nor minerals in nature from the rocks. An upsurge in demand for stone related supplies such as gravel and building stones gives rise to the need of quarrying in the building and construction sector. As a result, if the quarrying industry is adversely affected, a minimum impact would be that the costs of housing and infrastructure projects would increase while the maximum impact would entail a halt of all housing and infrastructure projects.

Under KAM, there are 15 companies with a combined installed capacity of 84 million tonnes per annum and currently operating at 21 million tonnes per annum. The quarry production such as aggregate/rock ballast are used as a raw material in manufacture of precast materials, paving blocks, concrete roofing tiles etc.

Key challenges facing quarry companies

a) Zoning
Lack of clear demarcation or zoning of Industrial and residential areas resulting in numerous conflicts between industries, residents/communities, and the Provincial Administration. The need to create zones for quarries is essential for the safety of communities due to the nature of their operations.

b) Regulatory overreach:
The sector, like many others, have recently witnessed an increase in duplication of roles between the national and county government, resulting in high costs of doing business. There is a need review and harmonize regulatory roles.

c) Mining Act (2016)
Review of the classification of quarry products are low value products and are considered under the Mining Act similar to high value minerals. In addition, high end products from the Quarry Sector are aggregate materials and not minerals.

d) High cost of electricity:
There is a need to address high production costs which affect the sector's competitiveness.

5. CHALLENGES AND POLICY RECOMMENDATIONS

Issues	Notes & Recommendation	Key stakeholder group
Unreliable and high cost of electricity	The industries in this sector are energy intensive, consuming much of the energy from the national grid. For companies seeking licences to produce their own energy, the government should ensure that there is transparency and fairness in the process. Government should also develop relevant regulation to guide operationalization of the Energy Act (2019) regarding net metering and power wheeling markets. Additionally, consider USD 9 cent/KwH for import substation for heavy industry such as glass, cement, and quarry industries.	✓Ministry of Energy
Outdated Import duty structure	A reduction in import duty for raw materials that are not locally available will ensure that locally manufactured building and construction products are cheaper than imported finished ones. This can be done through the ongoing comprehensive review of EAC CET.	✓The National Treasury ✓KRA
Outdated building code	The current building code in Kenya should be reviewed to incorporate best practices, as the current code has been a roadblock to delivery of housing projects. The current building code is outdated and is inconsistent with emerging trends and technologies. There is need to revise the current building code.	✓National Construction Authority ✓State Department of Housing and Urban Development.
Inadequate Mortgage market to finance home ownership	Challenges such as high lending rates, difficulties in property registration and titling, and the inability to access long-term financing has slowed down growth for homeownership and in turn, demand for residential buildings. A framework should be developed to grow the mortgage market. This will ensure the challenges to homeownership, especially for first-time home buyers, are resolved	✓National Construction Authority ✓CBK ✓Kenya Mortgage Refinance Company ✓Financial institutions
Lack of framework to enforce the Buy Kenya Build Kenya (BKBK) strategy	The government should develop a clear framework for the implementation of the BKBK strategy that will encourage consumers to buy locally manufactured products. In addition, government should provide a re-fencing mechanism for locally available inputs and materials in government contracts.	✓Ministry of Industrialisation, Trade and Enterprise Development
Review and harmonization of county levies and charges	The industry is plagued with numerous regulations and over taxation. Further, bodies mandated by law to regulate the sector have overlapping functions spread across multiples government ministries, regulatory bodies, and institutions, each of which derives its mandate from different polices. This has often led to duplicative, unclear roles. There is need to undertake a nation -wide review and harmonize the roles and mandates of regulatory agencies in the sector.	✓Ministry of Industrialisation, Trade and Enterprise Development ✓National Treasury ✓Council of Governors
Lack of prompt payments regulation	Late payment from the retail sector continues to be a key challenge affecting domestic market access for local manufacturers and their liquidity where the retail supermarkets have continued to contribute to such challenges. There is a need to adhere to the Code of Practice on Fair Trade practices as well as gazetting the Draft Retail Trade Sector Regulations, 2018.	✓Ministry of Industrialisation, Trade and Enterprise Development ✓Competition Authority of Kenya ✓Central Bank of Kenya
Zoning/ Encroachment in designated mining areas	Challenges in unauthorised residential buildings erected around areas that are designated as mining areas have led to businesses curtailing their expansion plans. There is a need to create zones for quarries, which is essential for safety of communities due to the nature of mining operations.	✓Ministry of Mining ✓Mining of Lands ✓Council of Governors

Issues	Notes & Recommendation	Key stakeholder group
Development finance fund to support technology upgrade	The cost of technology required for mining, production of building materials and construction is relatively costly, creating a barrier to entry for MSMEs. There is a need to have a development finance fund to fund housing projects. This shall ensure that developers are protected against lenders seeking to take advantage of the current lending environment.	✔Central Bank of Kenya (CBK) ✔Financial institutions
Delays in approval of building licences	The regulatory processes from start to end should be urgently digitised through the development of an online platform which will facilitate approvals required for businesses in the mining and construction industry. This will eliminate the current bureaucracies and ensure transparency within the sector.	✔National Construction Authority ✔County Governments

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8. Kenya Construction Market, The Big Five Construct Kenya, 2020

9. Construction Industry Policy, Draft 2018

10. KAM (2020), KAM Trade and Tax Committee ruling on cement clinker

11. KNBS (2020), Economic Survey 2020

Annex 1

S/No	Name	Subsector
1	ARISTOCRATS CONCRETE LIMITED	Building and Construction Accessories
2	BOYAMA BUILDING MATERIALS	Building and Construction Accessories
3	CEMEX HOLDING LTD	Building and Construction Accessories
4	DITTMAN CONSTRUCTION CO. LTD	Building and Construction Accessories
5	ELEGANT FITTINGS LIMITED	Building and Construction Accessories
6	ERDEMANN GYPSUM LIMITED	Building and Construction Accessories
7	EUROCON TILES PRODUCTS LTD	Building and Construction Accessories
8	GJENGE MAKERS LIMITED	Building and Construction Accessories
9	HYDRO WATER WELL (K) LIMITED	Building and Construction Accessories
10	INTERNATIONAL GREEN STRUCTURES MANUFACTURING KENYA LIMITED	Building and Construction Accessories
11	KEDA (KENYA) CERAMICS COMPANY LTD	Building and Construction Accessories
12	KENBRO INDUSTRIES LTD	Building and Construction Accessories
13	KENYA BUILDERS & CONCRETE LTD	Building and Construction Accessories
14	KOTO HOUSING KENYA LTD	Building and Construction Accessories
15	LAXMANBHAI CONSTRUCTION LIMITED	Building and Construction Accessories
16	LEXCON ENTERPRISES LTD	Building and Construction Accessories
17	MINERAL ENTERPRISES LTD	Building and Construction Accessories
18	QUESTWORKS LIMITED	Building and Construction Accessories
19	REXE ROOFING PRODUCTS	Building and Construction Accessories
20	ROOFINGS KENYA LIMITED	Building and Construction Accessories
21	SAJ CERAMICS LTD	Building and Construction Accessories
22	SKYLARK CONSTRUCTION LTD	Building and Construction Accessories
23	SPACE AND STYLE LTD	Building and Construction Accessories
24	TILE & CARPET CENTRE	Building and Construction Accessories
25	WOTECH KENYA LIMITED	Building and Construction Accessories
26	BAMBURI CEMENT LIMITED	Cement Production
27	EAST AFRICAN PORTLAND CEMENT COMPANY LIMITED	Cement Production
28	KARSAN RAMJI AND SONS LIMITED	Cement Production
29	MOMBASA CEMENT LTD	Cement Production
30	NATIONAL CEMENT LIMITED	Cement Production
31	RAI CEMENT LIMITED	Cement Production
32	SAVANNAH CEMENT LTD	Cement Production
33	AFRIKSTONES LIMITED	Mining & Quarrying
34	AFRICAN DIATOMITE INDUSTRIES	Mining & Quarrying

S/No	Name	Subsector
35	BLUE STONE LIMITED	Mining & Quarrying
36	COAST CALCIUM LIMITED	Mining & Quarrying
37	ELDORET QUARRY LIMITED	Mining & Quarrying
38	HALAI CONCRETE QUARRIES	Mining & Quarrying
39	HOMA LIME CO. LTD	Mining & Quarrying
40	KAY CONSTRUCTION COMPANY LTD	Mining & Quarrying
41	SHAJANAND CREATIVE LIMITESD	Mining & Quarrying
42	SILVERSTONE QUARRY LIMITED	Mining & Quarrying
43	SUPERSTONE 2006 LTD	Mining & Quarrying
44	TIPTOP CONSTRUCTIONS LIMITED	Mining & Quarrying
45	VALLEM CONSTRUCTION LTD	Mining & Quarrying
46	VIRJI VISHRAM PATEL & SON'S LTD	Mining & Quarrying
47	NORTH RIFT CONCRETE WORKS LTD	Precast and Ready-Mix Concrete
48	BAMBURI SPECIAL PRODUCTS LTD	Precast and Ready-Mix Concrete
49	COMPACT POLES & SERVICES LTD	Precast and Ready-Mix Concrete
50	GREYSTONE INDUSTRIES LIMITED	Precast and Ready-Mix Concrete
51	KISUMU CONCRETE PRODUCTS	Precast and Ready-Mix Concrete
52	ORBIT ENTERPRISES LTD	Precast and Ready-Mix Concrete
53	PRIDE ENTERPRISES LTD	Precast and Ready-Mix Concrete
54	RELIABLE CONCRETE WORKS LTD	Precast and Ready-Mix Concrete

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