



Performance of Jordanian Mining Sector During 2019 - 2021





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Preface

The mining sector in Jordan considered one of the main pillars of the Jordanian Economy, as it plays an important role in strengthening the national economy along with the rest of the other economic sectors. Despite the fluctuation of its contribution rates during various times, its role remains a tangible weight, as it is one of the most important tributaries of the national economy. It contributes effectively to the employment of the local workforce, and works to cover the local market's need for raw materials and intermediate and final products related to this sector. It also contributes to providing currencies through export, in addition to supplying; the State is Treasury with mining taxes and fees.

Based on the great importance of the mining sector, the Ministry launched in 2020 a number of investment opportunities in the field of mineral resources, and it encourages investors to establish manufacturing industries based on mineral resources to increase the added value of the extracted ores.

This report aims to highlight the mineral resources available in Jordan and the role of the main big companies operating in the Mining Sector in Jordan, in addition to the manufacturing industries that are based on the exploitation of the Jordanian mineral resources, as well as encouraging the participation of local and foreign companies in the exploitation of Jordanian Mineral Resources due to the benefits granted for the companies operating in this sector as well as for investors who are interested in the mining sector in general.

Dr.Saleh Al-kharabsheh
Minister of Energy and Mineral Resources

1. Introduction

The mining sector considered one of the most important strategic sectors where mineral resources form the basis for the economic and social development of any country, as it contributes mainly and effectively to the employment of the local workforce and covers the market needs of primary, intermediate, and final products related to the sector in addition to supplying national income in foreign currencies by exporting raw materials and products.

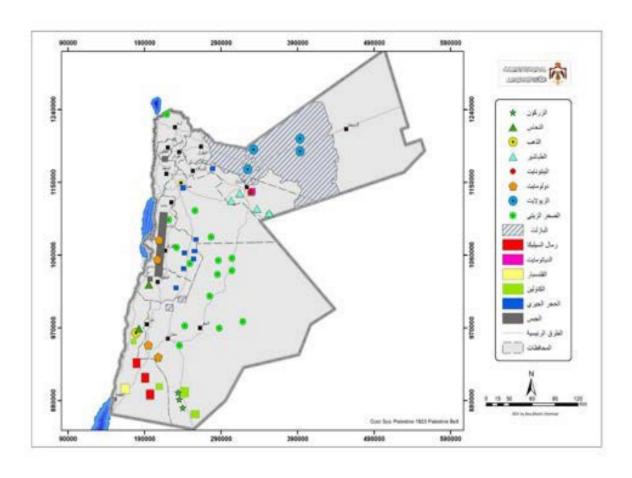
The sector consists mainly of large industries in terms of volume of investments (Phosphate and Potash). Many companies have started investing in this promising sector, which is considered one of the largest industrial sectors in terms of the size of the capital of its relevant industrial facilities.

The rapid technological development at the global level in the mining sector has contributed to encouraging investment in mining industrial projects, both extractive parts such as phosphate, potash, basalt, silica and limestone, and manufacturing mining industries such as fertilizers, acids and cement.

The government has also focused on implementing several exploration programs for mineral ores such as rare earth elements and lithium for the purposes of marketing these ores in modern industries and focusing on the added value of national strategic minerals.

The Ministry of Energy and Mineral Resources periodically evaluates the performance of the mining sector in order to show the sector's role in supporting the national economy through the main economic indicators, especially its contribution to the GDP and the extent of its exports' contribution to the total national exports. The contribution of the mining sector to the GDP in 2020 was about 7.2% and in 2021 it was about 9.2%. The mining sector exports in 2020 accounted for 23.55%, and in 2021 it accounted for 30.4% of the total national exports.

Mineral Ores in Jordan

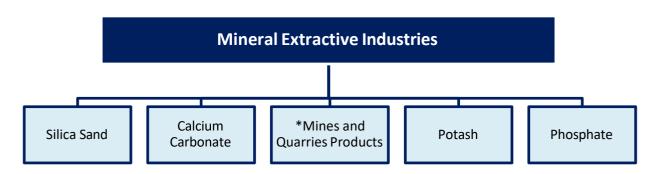


2. Mining Industries in Jordan

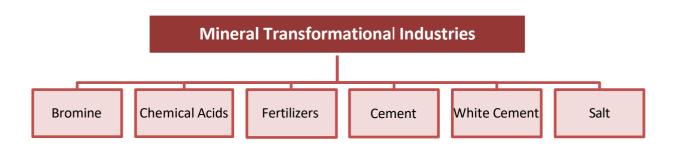
The mining sector consists of two main mining industries:

- a- Extractive mining industries
- b- Transformational Mining industries

The mining industries, in their two parts, are working to meet the needs of the local and foreign market in terms of raw materials, intermediate products, and final products. The mining industries in Jordan witnessed a great qualitative leap and distinction at the Arab and international levels, especially in the field of mining and manufacturing phosphates, potash, bromine, chemical acids, and fertilizers.



^{*}Products of Quarries and Mines such as Building Stones, Natural Sand, Aggregates, Marble, Granite, Glass Sand, Basalt and others.











Mineral Extractive Industries

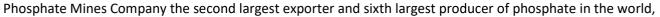
Extractive industries depends on mineral resources that cannot be renewed or replaced and converted into final products or intermediates such as phosphate and potash. The extractive industries play an important role in promoting economic independence as a raw material for a number of manufacturing industries (such as fertilizers and acids) and thus contribute to reducing the rate of import of manufacturing manufactured goods, contributing to enhancing the gross domestic product and participating in social development through the optimal use of the workforce.



2.1.1 Phosphate

Jordan has the fifth largest phosphate reserves in the world at 3.7 billion tons. Jordanian phosphate has high quality specifications, as it contains 67-73% of tri-calcium phosphate (TCP).

Phosphate is mined in Jordan through the Jordan Phosphate Mines Company, which was founded in 1949 and its current capital is about 82.5 million dinars. The company's phosphate estimated reserve at 1.250 billion tons, making Jordan



with a production capacity of more than 7 million tons of phosphate annually.

(Source: Jordan Phosphate Company)

The Jordan Phosphate Company operates through four phosphate mines, and the company obtained new exploration licenses in 2019. These mines are located in central and southern Jordan as shown in the map below and Table No. (1) Showing the quantities of phosphate production from the company's mines for the years 2016-2021(Source: Jordan Phosphate Company)



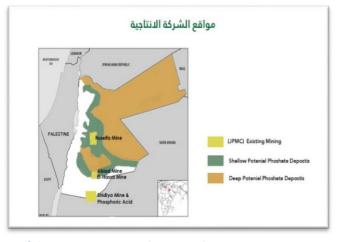
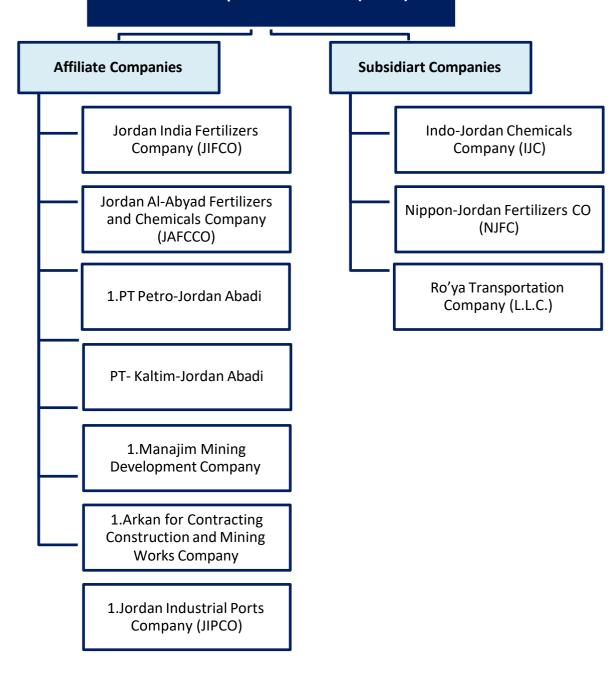


Table No (1) the Quantity of Phosphate Production (Thousand Tons) from the company's mines for the years 2016-2021

2021	2020	2019	2018	2017	2016	Mine
874	1,146	1,007	799	733	621	Al-Hasa
1,444	1,443	1,604	1,204	1,602	1,504	Al-Abiad
7,043	5,934	6,005	5,777	6,353	5,869	Eshidiya
654	415	607	243	0	0	Al-rusaifah
10,015	8,938	9,223	8,023	8,688	7,994	SUM

Jordan Phosphate Mines Co. (JPMC)



Production and Sales of Phosphates

Table No. (2): Quantities produced, quantities exported, Quantities consumed in the local market, and sales Revenues for phosphates for the period 2016-2021.

Year	2016	2017	2018	2019	2020	2021
Phosphate production quantities (Thousand Tons)	7,988	8,665	8,022	9,224	8,938	10,015
Quantities of exported phosphates (Thousands Tons)	4,704	5,195	4,163	5,070	4,518	5,296
Quantities of phosphate consumed locally (Thousand						
Tons)	3,231	3,588	3,900	3,961	4,034	4,386
Phosphate sales revenues (Million Dinars)	367.1	335.5	327.2	339	296	500

Source: Annual reports of the Jordan Phosphate Company for the years 2016-2021

- 1. Despite the decrease in production in 2020 due to Corona pandemic, the company was able to achieve a record production amount of (10,015) thousand tons in 2021, and the company achieved 95.4% of its marketing plan for the year 2021.
- 2. The company achieved a sales record for the year 2021 amounting to (9.7) million tons, compared to (8.6) million tons in 2020, an increase of 13.2% compared to 2020.
- 3. The national exports of phosphates increased in 2021, according to the data of the Department of Statistics, to reach 377,015 million Jordanian dinars, compared to 243,056 million Jordanian dinars in 2020, as phosphate exports accounted for 6.24% of the national exports for the year 2021 compared to 4.8% in 2020.
- 4. The net profit accumulated in 2021 amounted to 336.36 million dinars, compared to 28.07 million dinars in 2020.

Source: The annual reports of the Jordan Phosphate Company for the years 2016-2021. General Statistics 2021



Figure No. (1): Phosphate production quantities (thousand tons) for the years 2016-2021



Figure No. (2): Quantities of phosphate exported and consumed locally (thousand tons) for the years 2016-2021

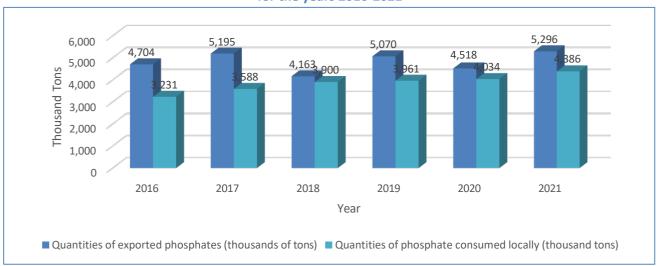
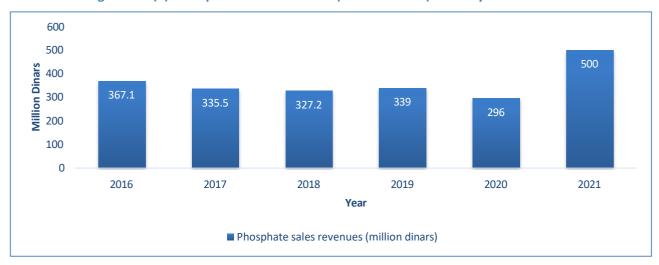


Figure No. (3): Phosphate sales revenues (Million Dinars) for the years 2016-2021



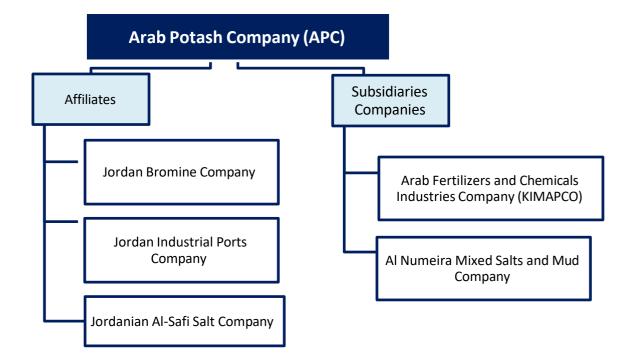


2.1.2 Potash



The Arab Potash Company was established in 1956 for the purpose of extracting salts and chemicals from the Dead Sea and establishing industries based on these salts. The company and its subsidiaries are limited to producing potash, potassium nitrate, various chemicals and other derivative products such as bromine and selling them in the global and local markets.

By the end of 2021, the value of the company's assets amounted to (1.325) billion Jordanian dinars, compared to (1.12) billion Jordanian dinars in 2020.



Production and Sales of Potash

Despite the Corona pandemic in 2020, the company was able in 2020 to achieve a production record, the highest in its history, as the production of the Arab Potash Company during the year 2020 of potash reached (2.62) million tons, by 7 percent % increase in production over the annual production plan.

In 2021, the production of potash witnessed growth at various levels, as the company's production of potash reached (2,563,000) tons, or (102.5%) of the annual production plan for the year 2021, amounting to (2,500,000) tons, with an increase of (63,000) tons.



Table No. (3): Global potash production by country (million tons) for the years 2016-2021

Country	2016	2017	2018	2019	2020	2021
North America	18.4	21.5	23.2	21.2	23.00	23.50
Russia	10.8	12	11.8	12.2	13.5	14.5
Belarus	10	11.5	12.1	11.9	12.1	13.1
United Kingdom/Spain/Israel	5.2	4.7	4.9	4.2	4.5	4.5
China/Laos/Uzbekistan	8.3	8	7.9	8.6	8.4	8
Jordan	2	2.3	2.4	2.5	2.6	2.6
Germany	4	4.2	4	3.6	4.20	4.20
latin america	2.5	2.3	1.9	1.4	1.8	1.8

Source: The annual report of the Arab Potash Company for the years (2016-2021).

Table No. (4): Quantities of potash production (Thousands Tons) and sales (Million Dinars) for the period 2016-2021

Year	2016	2017	2018	2019	2020	2021
Quantities of potash production (thousands of tons)	2003.50	2320	2434.5	2486	2620	2563
Quantities of potash sold (thousands of tons)	2030.2	2360.2	2439.9	2408	2553	2631
Export (thousand tons)	1841.7	2165.8	2197.80	2145	2334	2400
Domestic Market Consumption (Thousand Tons)	188.5	194.4	242.1	264	219	230.5
Sales (million dinars)	322.2	364.3	482.72	504.6	456.1	648
Net profit (million dinars)	62.2	89.8	124.9	151.7	126.8	217

Source: The annual report of the Arab Potash Company for the years (2016-2021)

- The Potash Company achieved a new record in sales in 2021, amounting to (648) million dinars, compared to (456) million dinars in 2020, with an estimated increase of (42%).
- The potash company's exports in 2021 amounted to (513.1) million Jordanian dinars, compared to (380.3) million Jordanian dinars in 2020, as potash exports accounted for 8.5% of the national exports for the year 2021 compared to 7.5% in 2020.

(Source: Annual Report of the Arab Potash Company for the year 2021, General Statistics 2021)

Figure No. (4): Quantities of potash production (thousand tons) for the years 2016-2021

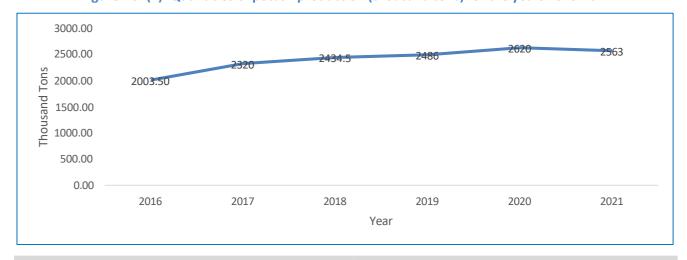
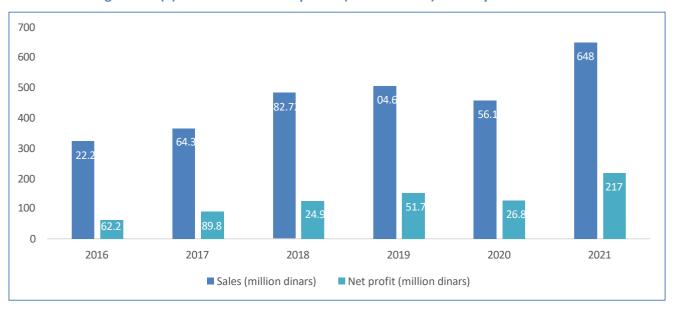




Figure No. (5): Sales Revenue and profits (million dinars) for the years 2016-2021



2.1.3 Quarries and Mines Products

Quarries and mines are scattered in various regions of the Hashemite Kingdom of Jordan, and they contribute



to building a nucleus for large investment projects in the field of mining industries and the infrastructure development and service projects for the local community, and because of the prominent role of these products in most industrial fields, Which can be used as a final product such as basalt, granite and marble or as an essential part in a large number of manufacturing industries such as limestone and pozzolana in the cement industry and in the manufacture of building and decorative stones and other industries

Quarries and mines products classified according to their use into two main categories:

- **1.** <u>Construction Materials:</u> such as Aggregates, Marble, Building Stones, Natural Sand, Granite and Basalt blocks.
- 2. Industrial Inputs: such as Glass Sand, Gypsum, Limestone and Volcanic Tuff.

Mines and Quarries Products

Industrial Inputs

Construction Materials

Glass Sands, Gypsum, Limestone, Volcanic Tuff Aggregates, Marble, Building Stones, Natural Sand, Granite, Basalt





Production and Sales of Quarry and mine products:

Table No. (5): Production quantities (tons) of quarries and mines products for the years 2016-2021

Ore	2016	2017	2018	2019	2020	2021
Pozolana	848,774	803,525	917,490	682,827	710,707	1,005,972
LimeStone	1,681,736	4,087,122	2,738,942	2,989,302	2,307,105	3,133,823
pure LimeStone	348,778	417,680	529,765	583,403.50	900,593	1,099,178
Travertine	22,994	11,542	18,520	8,931	1,650	10,781
Gypsum	1,906,979	344,191	190,606	264,724.00	184,917	399,968
Clay	109,105	711,674	187,798	478,965	498,703	267,965
Silca Sand	136,853	563,998	136,483	248,890	212,020	68,816
Marbel	80,000	80,000	17,500	25,000	0	0
Dead Sea Mud	225	245	276	222	0	
Natural Sand	3,420,000	3,610,000	3,800,000	3,150,000	2,500,000	1,217,549
Granite	0	200	3,400	0	0	0
Basalt	100,716	62,500	562,500	89,950	141,000	71,046

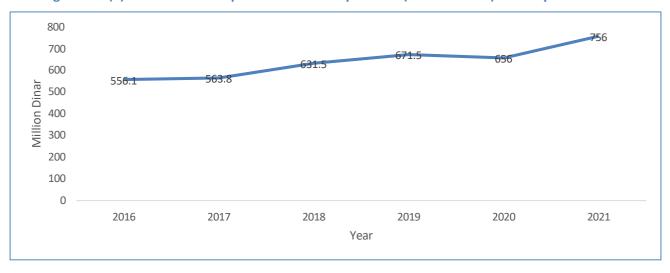


Table No. (6): Revenues from quarries and mines products (million dinars) for the years 2016-2021

Year	2016	2017	2018	2019	2020	2021
Sales Revenue of Quarries Products (Million JD)	556.1	563.8	631.5	671.5	656	756

Source: Statistical releases of the Central Bank 2016-2021

Figure No. (6): Revenues from quarries and mines products (million dinars) for the years 2016-2021



2.1.4 Calcium Carbonate

The Calcium Carbonate industry in Jordan is based on the exploitation of pure Limestone as a raw material available in large quantities in central Jordan by many local companies, where most of these companies' production from the Calcium Carbonate goes for export. Calcium Carbonate products used in many industrial sectors, as fillers or as raw materials for other industries and other final products. In general, Calcium Carbonate granules used in many industries, for example: glass industry, feed industry, various paints industry, carpet industry, plastic industries and many other industries.



The chemical and physical characteristics of calcium carbonate made it a high quality product that contributed to increasing the demand for crude in the local market and exporting it to the foreign market. As the revenues of calcium carbonate exports for the year 2021 amounted to about (29.4) million Jordanian dinars.

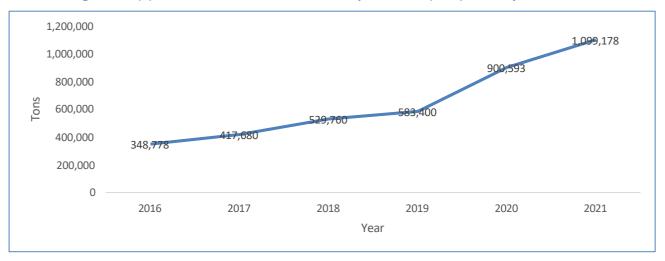
Table No. (7): Calcium carbonate production quantities (tons) for the years 2016-2021

Year	2016	2017	2018	2019	2020	2021
Production of Pure Limestone (Tons)	348,778	417,680	529,760	583,400	900,593	1,099,178

Source: Energy and Minerals Regulatory Authority 2021



Figure No. (7): Quantities of calcium carbonate production (tons) for the years 2016-2021



2.1.5 Silica Sand

Silica Sand is found in large quantities in south of Jordan, and is characterized by the high degree of purity and near to the surface which makes it easy to mine and also close to the necessary infrastructure services such as main roads, electricity and the port of Aqaba. It enters into various industries concentrated in the manufacture of glass, casting sand, optical and crystal glass, and the manufacture of renewable energy systems.

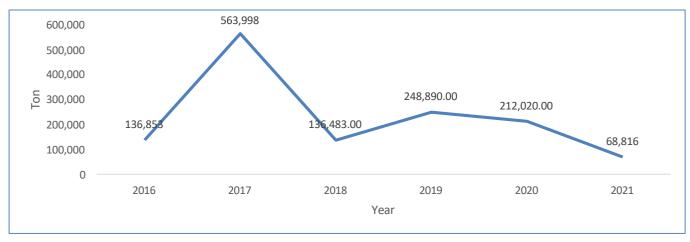


Table No. (8): Production of Silica Sand quantities (tons) for the years 2016-2021

Year	2016	2017	2018	2019	2020	2021
Production of Silica Sand (Tons)	136,853	563,998	136,483.00	248,890.00	212,020.00	68,816

*Source: Energy and Minerals Regulatory Authority 2021

Figure No. (8): Silica Production Quantities (Tons) for the years 2016-2021





Mineral Manufacturing Industries

Manufacturing industries include industrial processes in which various resources processed to convert them into final or intermediate industrial products for other industries. Manufacturing industries contribute to supporting the national economy by meeting the needs of many economic sectors such as the agricultural, medical and other sectors, and operation of competencies Work that leads to raising the standard of living in the local community and through exporting to foreign markets.

The most important manufacturing industries in the Kingdom are the manufacture of fertilizers, chemical acids, and the manufacture of cement of all kinds.

Fertilizers and Chemical Acids

Jordanian fertilizers and acids are among the products with increasing demand because of their support for the industrial and agricultural sectors as a result of their essential role in enhancing and improving food security and supporting agricultural outputs, both plant and animal, which contributed to the development of these industries and the establishment of pilot projects in them. Whereas, Jordan possesses large reserves of phosphate and potash, which are the primary raw materials for the manufacture of acids and fertilizers. The Jordan Phosphate Company has established the industrial complex for the production of phosphate



fertilizers, which works on the production of various types of fertilizers for various needs to meet the requirements of the local market and the external market. In 2021 (2.0) thousand tons, compared to (1.8) thousand tons in 2020.

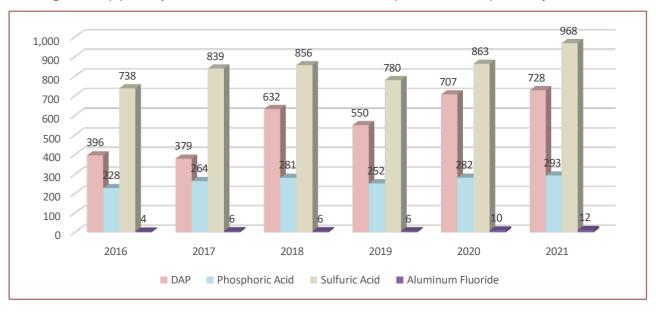
The Potash Company also considered one of the largest manufacturers of various fertilizers such as potassium nitrate and potassium chloride through its subsidiaries and allied companies in each of KEMAPCO and the Jordanian Bromine Company.

Table No. (9): Quantities of production of phosphate fertilizers in the Aqaba Industrial Complex (Thousand Tons) for the years 2016-2021

Product	2016	2017	2018	2019	2020	2021
DAP	396	379	632	550	707	728
Phosphoric Acid	228	264	281	252	282	293
Sulfuric Acid	738	839	856	780	863	968
Aluminum Fluoride	4	6	6	6	10	12
SUM	1,366	1,488	1,775	1,588	1,862	2,001

Source: The annual reports of the Jordan Phosphate Company for the years 2016-2021

Figure No. (9): Phosphate Fertilizer Production Quantities (Thousand Tons) for the years 2016-2021



Production and sales of fertilizers and acids

Table No. (10): Production quantities (thousands of tons) and sales revenues (million dinars) for fertilizers and acids for the years 2016-2021

Year	2016	2017	2018	2019	2020	2021
Fertilizer Production (Thousand Tons)	547.4	695.3	882	747.8	929.2	1055.1
Fertilizer Sales Revenues (Million Dinars)	99.2	101.9	174.6	144.8	177.20	295.40
Acid Production (Thousands Tons)	1083	1308.6	1375.4	1291.90	1391.7	1562.3
Acid Sales Revenues (Million Dinars)	76.7	142.2	164.7	149.4	126.1	270

Source: Statistical Bulletin of the Central Bank of Jordan 2021

Figure No. (10): Production quantities (thousand tons) of fertilizers and acids for the years 2016-2021

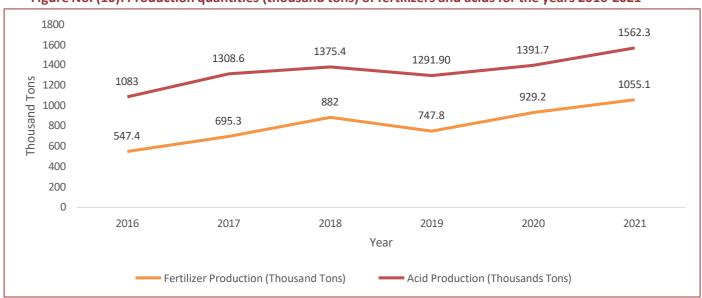
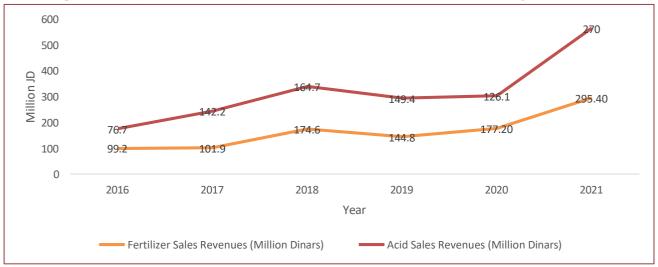


Figure No. (11): Sales revenues (Million Dinars) of fertilizers and acids for the years 2016-2021



The year 2021 witnessed an increase in fertilizer production, the highest in the last five years, as well as the highest production of acids in the last five years According to Central Bank data, national exports of phosphoric acid increased in 2021 to reach (440.7) million Jordanian dinars, compared to (240.6) million Jordanian dinars in 2020.

Fertilizer exports accounted for 7% of national exports for the year 2021 compared to 5.3% for 2020, and acids

exports accounted for 7.3% of national exports compared to 4.7% in 2020.



Source: Statistical Bulletin of the Central Bank 2021, General Statistics 2021

Bromine

The Jordan Bromine Company was established in 1999 in partnership between the Arab Potash Company and the Albemarle Company to be the first and only company for the production of bromine and its derivatives in Jordan. The Jordan Bromine Company is located in the south of Jordan in the Dead Sea region. The company employs approximately 350 employees. The company has succeeded since 2000. Spreading and exporting its products to more than 30 countries around the world.

The Jordan Bromine Company produces bromine and its derivatives,

such as tetra bromide, sodium bromide, calcium bromide, hydrogen bromide, and potassium hydroxide. These produced chemicals are used in several industries, including: medicines, electronics, and the oil industry.



Bromine production and Sales:

It's noted from Table No. (11) That the company is achieving increasing progress in bromine revenues, as the company achieved the highest sales revenues in 2021, and the year 2020 witnessed a decrease in sales due to the impact of the Corona pandemic.

Table No. (11): Quantities of bromine produced and sales for the years 2016-2021

Year	2016	2017	2018	2019	2020	2021
Bromine production (Thousand Tons)	80.69	84.8	88.62	112.7	112.76	115.16
Bromine sales (Million Dinars)	175.49	182.3	202.1	290.5	272.8	316.6

*Source: Jordan Bromine Company 2021

Figure No. (12): Bromine production quantities (Thousand Tons) for the years 2016-2021

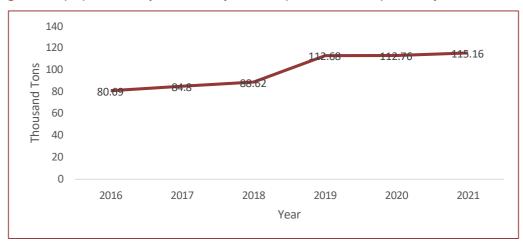
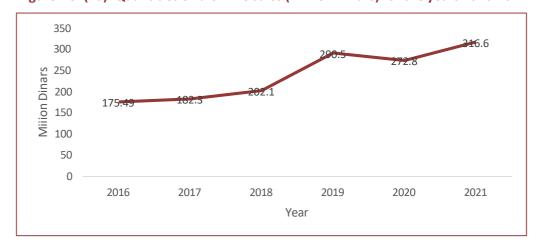


Figure No. (13): Quantities of bromine sales (Million Dinars) for the years 2016-2021



Cement Industry

The cement industry considered one of the most important strategic and development industries because it is directly related to the construction and construction works in the country. There are five cement production factories and one white cement production plant in Jordan with a production capacity of about 8 million tons annually. The availability of raw materials inputs locally as well as Existence of the necessary infrastructure to encourage investment in the cement industry of all kinds and uses.



Cement production and sales

The cement industry contributes to meeting the needs of the local market for different types of cement, which are included in a large number of urban projects and in exports to the foreign market, as the cement sector exports in 2021 amounted to approximately (38) million dinars, compared to (32) million Jordanian dinars. In 2020, as the Corona pandemic played a major role in the lack of exports for the year 2020. Therefore, the quantities of consumption were almost the same as the quantities of production.

(Source: Jordan Cement Producers Association 2021)

Table No. (12): Cement consumption (Million Tons) and Sales Revenue (Million Dinars) for the years 2016-2021

Year	Domestic consumption of cement (Million Tons)	Revenues from ordinary cement sales (million dinars)
2016	3.7	370
2017	3.7	333
2018	3.6	288
2019	3.2	260
2020	2.9	235
2021	3.4	280

(Source: Jordan Cement Producers Association 2021)



Figure No. (14): Quantities of domestic consumption of cement (million tons) for the years 2016-2021

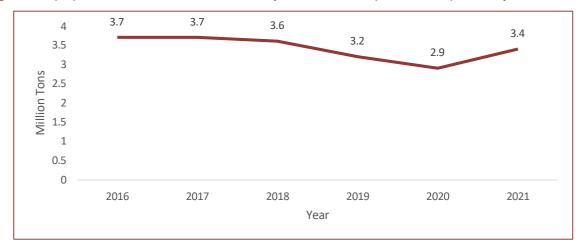
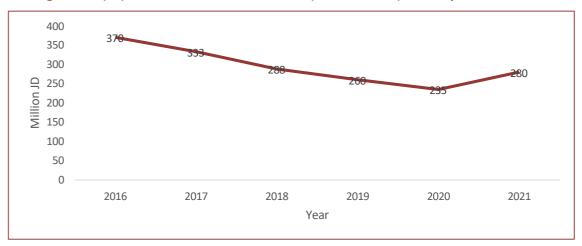


Figure No. (15): Revenues from cement sales (million dinars) for the years 2016-2021



White cement

White cement is ordinary Portland cement with a difference in color and fineness. The white color of cement is determined by controlling the raw materials and the manufacturing process. The Arab Company for White Cement Industry considered one of the leading companies in the white cement industry. It is a limited public shareholding company established in 1982. Its factory is located in Zarqa Governorate - Al-Dulail. It employs 182 employees, most of whom are from the local community.





Table No. (13): White cement consumption quantities (Thousand Tons) and sales revenues (Million Dinars)

For the years 2016-2021

Year	2016	2017	2018	2019	2020	2021
Quantities of White Cement Produced (Thousands of Tons)	54.882	34.638	32.606	28.18	21.42	15.9
Sales Revenue (JD) local market	6,247,181	4,687,988	4,678,965	4,047,607	2,695,044	2,081,144
Sales revenue (JD) / foreign market	496,495	1,950	0	308,976	291,248	0

Figure No. (16): White cement production quantities (thousand tons) for the years 2016-2021

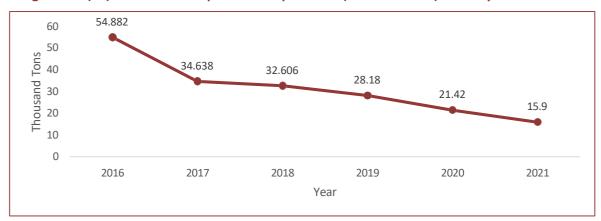
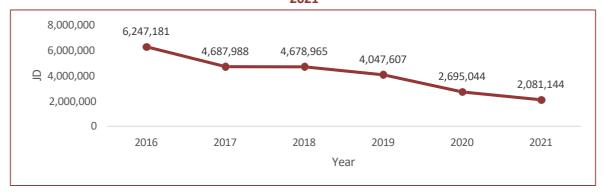


Figure No. (17): Revenues from sales of white cement in the local market (million dinars) for the years 2016-2021



It is noted that the company's sales in the local market decreased in the years 2020 and 2021 due to allowing some ordinary cement factories in Jordan to manufacture white cement. As well as the inability to market to the Syrian market due to the security situation there, and the opening of a number of factories in Saudi Arabia, which were the main importers of white cement from the company's factories in Jordan.



Salt

The salt industry is based on processing the salt extracted from the Dead Sea as a by-product and then processing it and turning it into salt that is suitable for human and animal consumption and for various industrial uses, such as table salt, animal nutrients, ice-melting salt, etc. The production capacity of pure salt has reached more than 100 tons per day. Amra Salts Company is the largest manufacturer of salt in Jordan



Table No. (14): Salt production Quantities (Tons) and Sales Revenues (Million Dinars) for the years 2016-2021

Year	2016	2017	2018	2019	2020	2021
Salt production quantities (tons)	41,309	48,985	48,901	36,850	39,088	42,359
Salt Sales (JD)	3,630,572	3,780,869	7,224,052	3,975,818	4,095,358	4,148,087

Source: Amra Salts Factory 2021

Figure No. (18): Quantities of salt production (tons) for the years 2016-2021

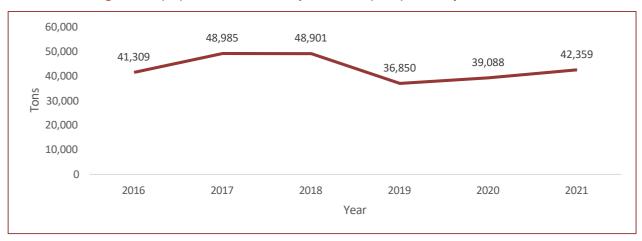
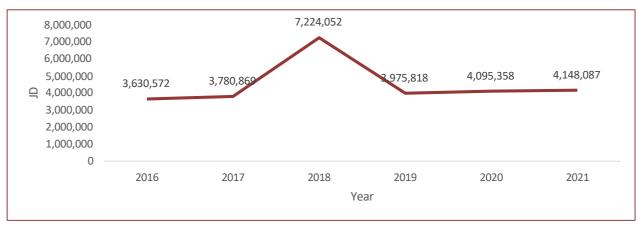


Figure No. (19): Revenues from salt sales (Dinars) for the years 2016-2021





Mining Sector Economic Indicators

Table No. (15): Financial Revenues for the Mining sector (Million dinars) for the years 2016-2021

Year	2016	2017	2018	2019	2020	2021
Extractive Industries (Million Dinars)	1420.5	1445.9	1643.5	1861.1	1681.2	1949.1
Transformational Industries (Million Dinars)	679.9	545.9	627.3	571.2	546.4	1169.2
Total (Million Dinars)	2100.4	1991.8	2270.8	2432.3	2227.6	3118.3

Source: Central Bank 2021, Companies Data 2021

Figure No. (20): Financial Revenues for the Mining sector (Million Dinars) for the years 2016-2021

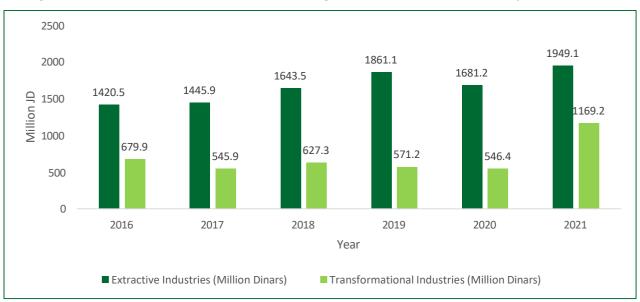


Table No. (16): Mining sector exports compared to national exports (million dinars) and their contribution percentage for the years 2016-2021

Year	2016	2017	2018	2019	2020	2021
National Exports (Million Dinars)	5712	5629	5561	4992.1	5044.4	6039.5
Mining sector exports (Million Dinars)	946	882	1098	944.6	1,188.0	1,834.0

Source: General Statistics 2021

Figure No. (21): Mining sector exports compared to national exports (million dinars) for the years 2016-2021

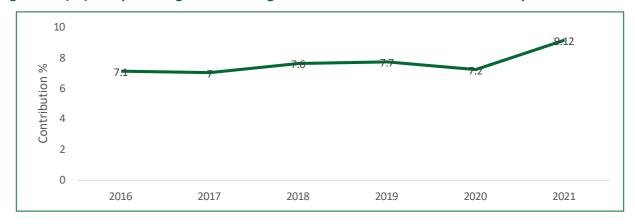


Table No. (17): The percentage of the mining sector's contribution to the GDP for the years 2016-2021

Year	2016	2017	2018	2019	2020	2021
Contribution %	7.1	7	7.6	7.7	7.2	9.12

Source: Mining sector data 2016-2021 from several sources

Figure No. (22): The percentage of the mining sector's contribution to the GDP for the years 2016-2021





References

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- Department of Statistics
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