

Contact Details

Tel office: +264 61 379 500
Fax office: +264 61 22 5371
E-mail: nabdesk@nab.com.na
Website: www.nab.com.na

Physical address:

Agricultural Boards' Building
30 David Hosea Meroro Road
Windhoek
Namibia

Postal address:

PO Box 5096
Ausspannplatz
Windhoek
Namibia



Constituted by Act 20 of 1992

A world-class regulator of a vibrant, diversified and sustainable crop industry

MARKET INTELLIGENCE REPORT

FERTILISERS



ISSUE 3 OF 2022

1. INTRODUCTION

Fertiliser is one of the most important agricultural inputs for crop production. By definition, fertilisers are natural or artificial substances containing chemical elements that improve the growth and productivity of plants. They enhance the soil's natural fertility or replace chemical elements taken from the soil by previous crops (Stewart, 2022). The three primary nutrients in commercial fertilisers are Nitrogen and ammonia (N), Phosphorous (P), and Potassium (K), and commercial fertilisers usually contain one or more of these three main essential nutrients. According to Roberts (1999), commercial fertilisers are responsible for 40 to 60% of the world's food production and the world will not be able to meet its food production goals without biotechnology and improved genetics, and without fertiliser. This also means that the world's food security largely depends on commercial fertilisers, considering that arable land is also slowly decreasing due to increasing global industrialisation.

Currently, the Namibian crop industry battles the high cost of production inputs amongst many other challenges of production. Fertilisers as an input remain a major concern for crop producers in Namibia as prices continue to increase and the country depends on imports of fertilisers. Therefore, this market intelligence report provides an analysis of **commercial inorganic/chemical** fertilisers (Nitrogen - N, Phosphate – P_2O_5 and Potassium/Potash – K_2O) in terms of production, consumption, trade, and price trends from a global, regional, and domestic perspective, and further explore the opportunities for Namibia.

2. GLOBAL OVERVIEW

PRODUCTION: According to Fernandez (2022), the global production of nitrogen fertilisers in the early 2000s stood at some 95 million tons and this has since increased to over 123 million tons by 2020. The production of phosphate fertilisers also increased, growing by roughly 18.6 per cent during the same period. Global potash production also increased from around 31 million tons to 44 million tons over the period under consideration.

Fertiliser production is more concentrated in Asia of which the continent produced 51% on average during 2016-2020. Asia is followed by Europe with a 24% share, then the Americas with a 19% production share, followed by Africa with a 5% production share, and lastly Oceania with a 1% production share over the same period respectively (FAOSTAT, 2022).

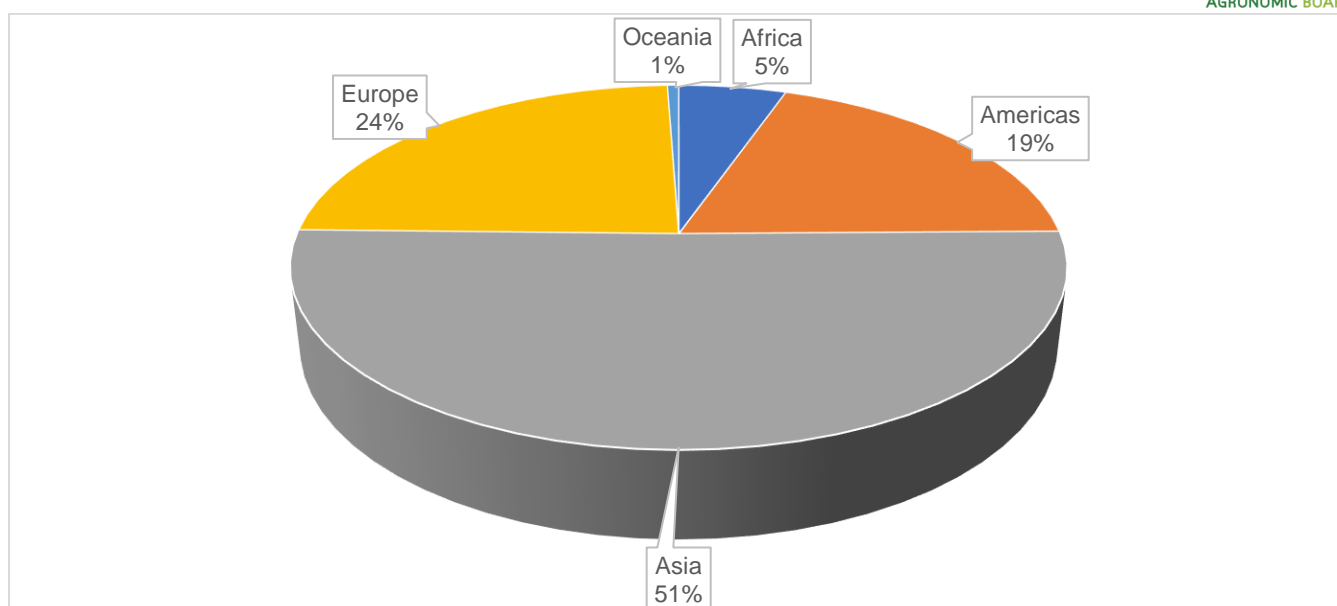


Figure 1: Global fertiliser production share by region (2016-2020). Source: FAOSTAT (2022)

According to FAOSTAT (2022), Nitrogen nutrient is mostly produced in Asia with an average production total of 71,5 million tons during 2016-2020. The Phosphate nutrient is produced in high quantities also in Asia of which an average of 24,8 million tons was produced in 2016-2020. Europe produces the most Potassium/Potash whereby an average amount of 19,5 million tons was produced during the same period respectively.

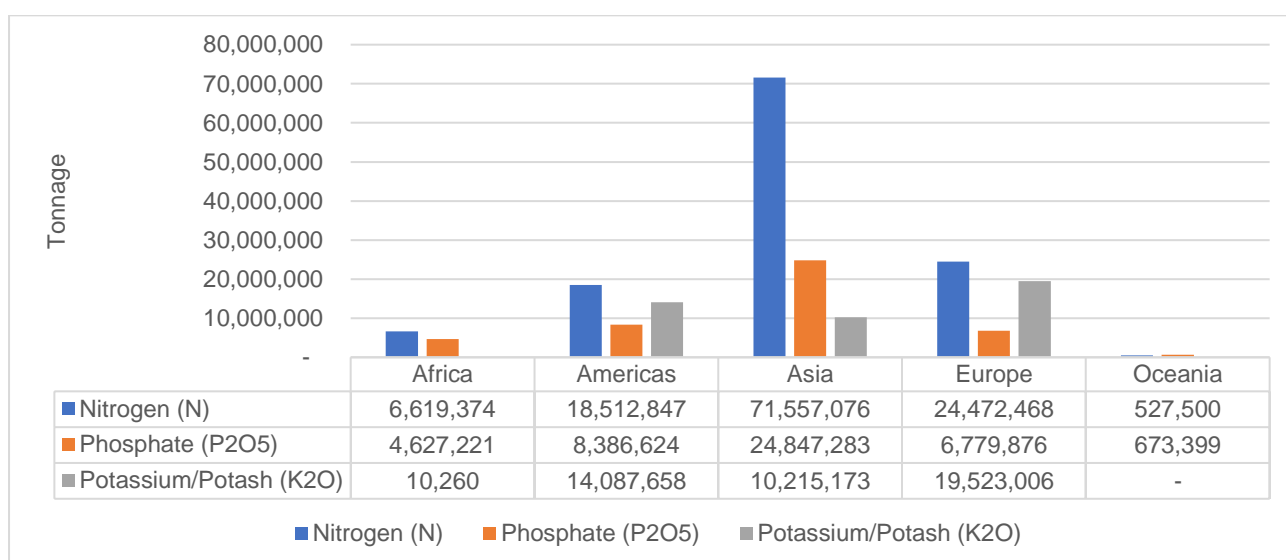


Figure 2: Global fertiliser production by nutrient type per region (2016-2020). Source: FAOSTAT (2022)

Table 1 indicates the top 10 fertiliser-producing countries in the world. China was the top producer in 2019, having produced over 103 million tons, followed by Russia in the second position with a total production of about 40,4 million tons. Morocco which is also the top producer in Africa ranks at the 7th

spot globally with a total production of 9,7 million tons in 2019 (Department of Agriculture, Forestry and Fisheries (DAFF) - Republic of South Africa (RSA) (2022).

Table 1: Global top ten fertiliser producing countries in 2019

Rank	Country	Production (tons)
1	China	103,916,000
2	Russia	40,479,000
3	United States of America	37,131,000
4	India	35,854,000
5	Canada	35,259,000
6	Belarus	19,672,000
7	Morocco	9,701,000
8	Indonesia	8,593,000
9	Saudi Arabia	8,474,000
10	Pakistan	8,326,000

Source: DAFF - RSA (2022)

CONSUMPTION: Global fertiliser consumption has been on a rising trend and the world has seen a steady fertiliser consumption increase from 187 million tons in 2018 to over 201 million tons in 2020 (International Fertiliser Association (IFASTAT), (2022). Consumption in 2021, however, showed a slight decrease to 199 million tonnes (Fernandez, 2022).

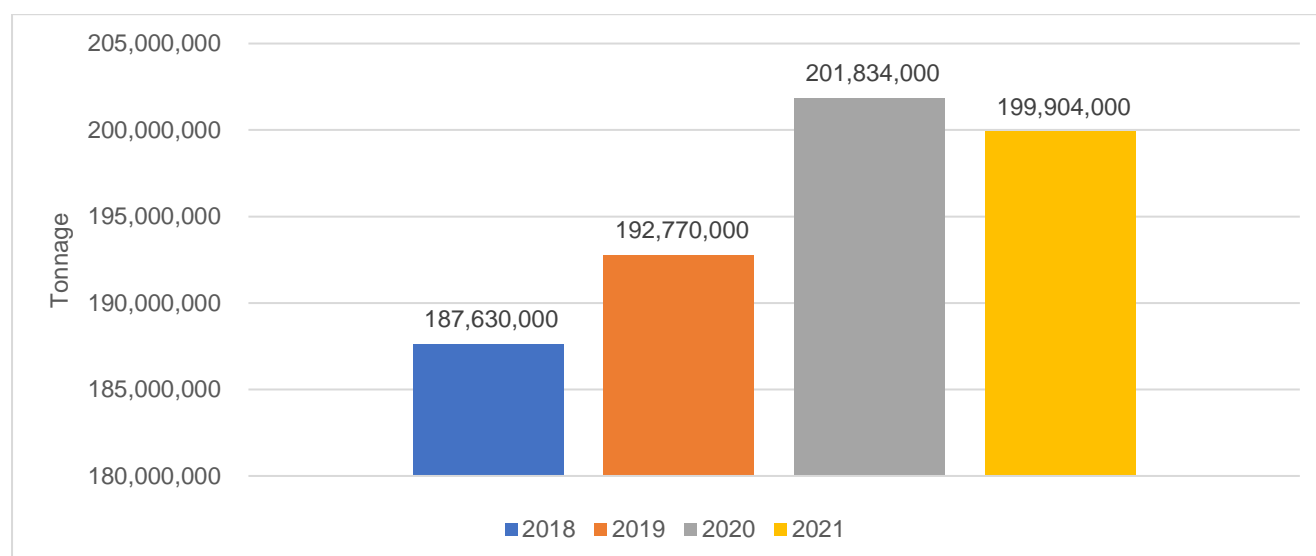


Figure 3: Global fertiliser consumption trend. Source: IFASTAT & Fernandez, (2022)

As indicated in Figure 4 below, Nitrogen (N) demand has been on a rise over the past 4 years under consideration (2018-2020), followed by Phosphate (P_2O_5) and Potassium/Potash (K_2O) respectively. The figure also indicates that the global demand for Phosphorus and Potassium was very low compared to Nitrogen during the three years under review with not more than 50 million tons consumed per annum in comparison to over 100 million tons of Nitrogen consumed.

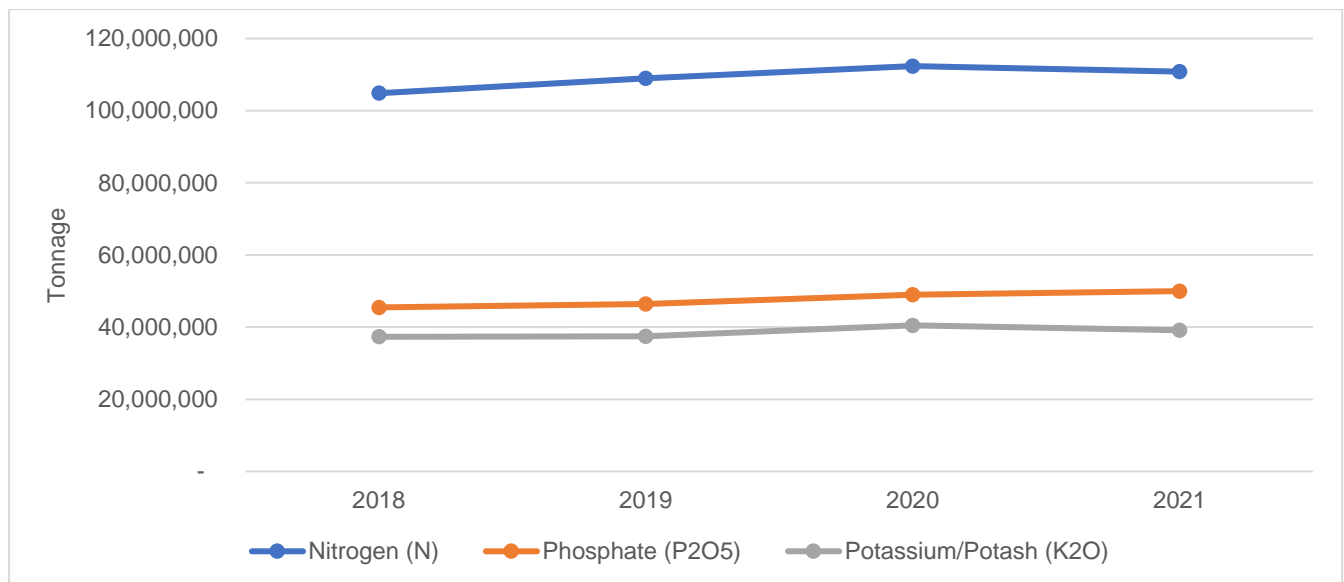


Figure 4: Global fertiliser consumption by nutrient type. Source: IFASTAT & Fernandez, (2022)

Figure 5 shows that China consumed the highest quantity of fertilisers in 2019 totalling 45,40 million tons, followed by India and the United States of America with 29,37 and 20,36 million tons respectively.

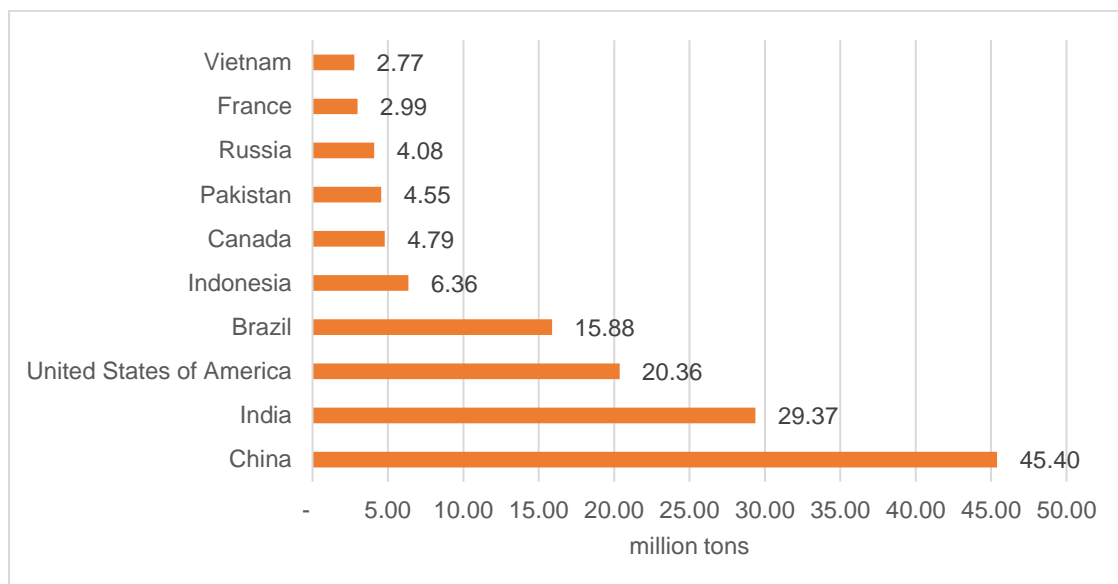


Figure 5: Global fertiliser consumption by country in 2019 (in million tons). Source: Statista, (2022),

IMPORTS: According to the International Trade Centre (2022), global fertiliser import has shown a consistent increase with over R814 million worth of fertiliser imports in 2017, to over R1,43 billion worth of fertiliser imports in 2021 (Figure 6).

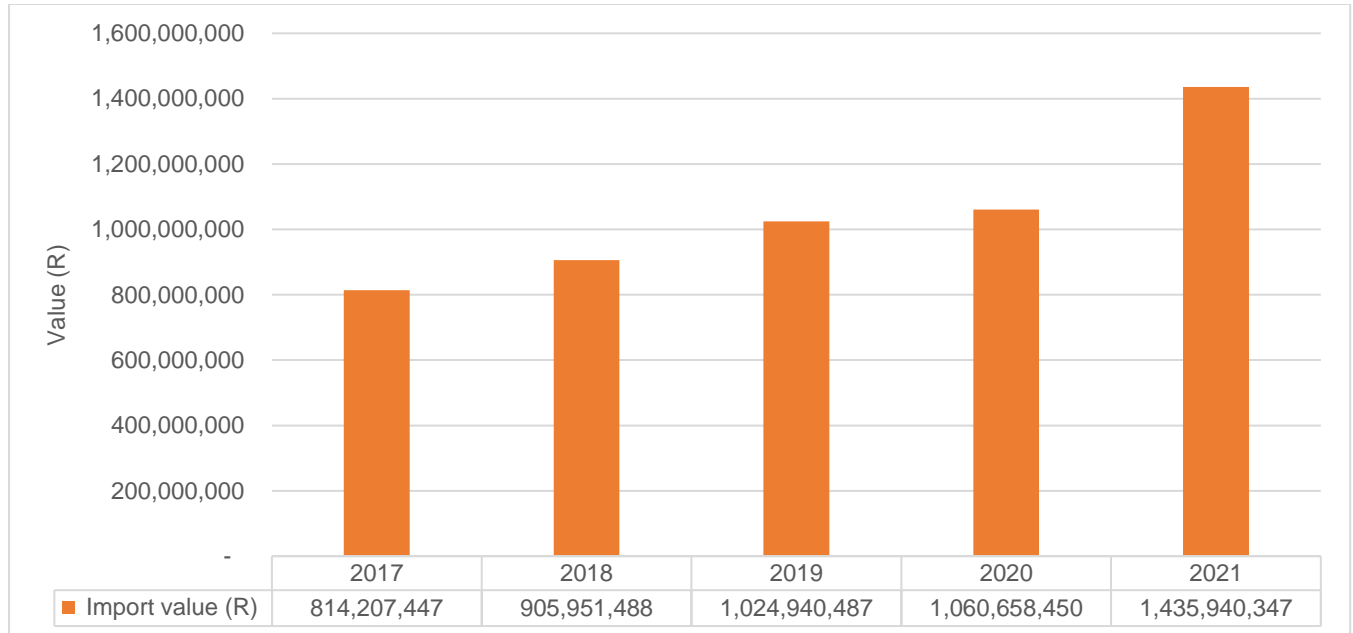


Figure 6: Global fertiliser import in 2021, based on value (values in South African Rand). Source: ITC, (2022)

As indicated in Figure 7, Brazil was the main fertiliser importer worldwide, having imported fertilisers worth about R233 million in 2021. Brazil was followed by the United States of America and India with an import value of R151 million and R134 million respectively.

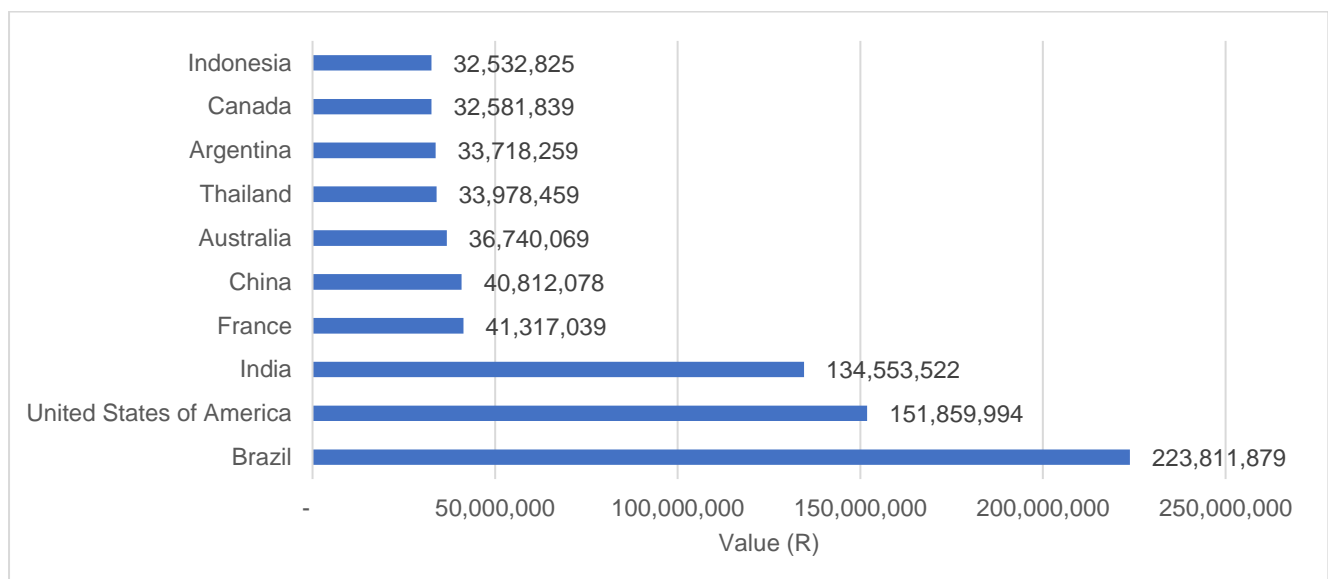


Figure 7: Leading fertiliser importing countries worldwide in 2021 based on value (value in South African Rand). Source: ITC, (2022).

EXPORTS: Global fertiliser export almost doubled in value with an increase from R682 million in 2017 to over R1,25 billion in 2021 (Figure 8).

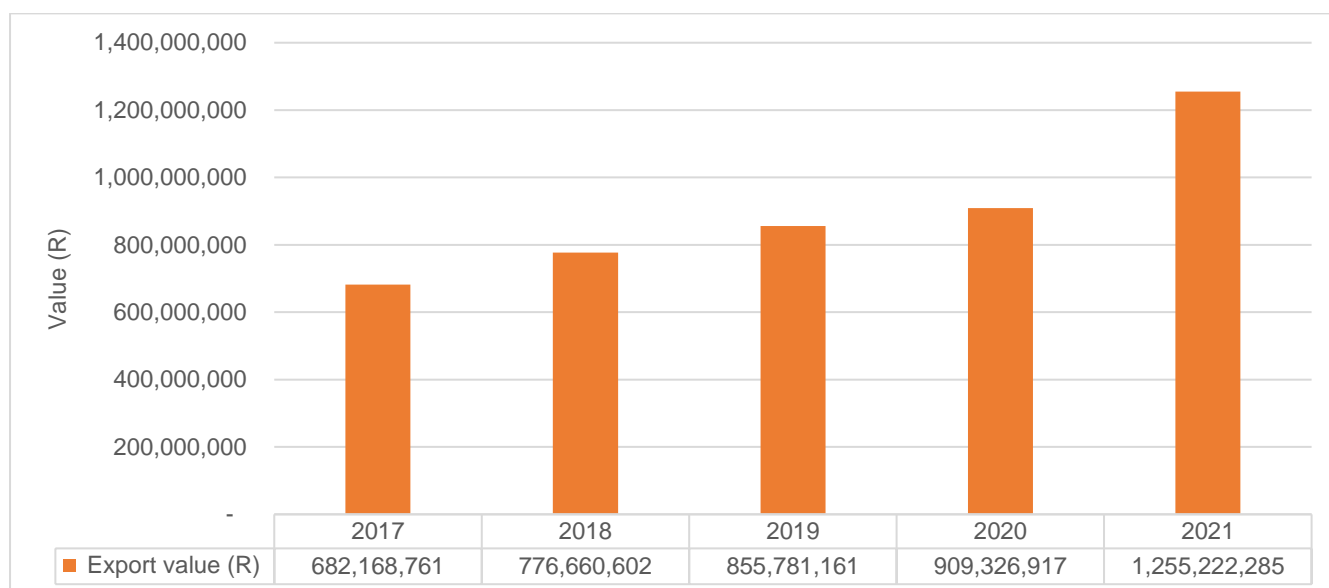


Figure 8: Global fertiliser export in 2021, based on value (values in South African Rand). Source: ITC, (2022)

In terms of the top exporting country, the Russian Federation was the main global fertiliser exporter in 2021, with an export value of R184 million. The Russian Federation is followed by China and Canada with fertiliser export values of R169 and R97 million respectively.

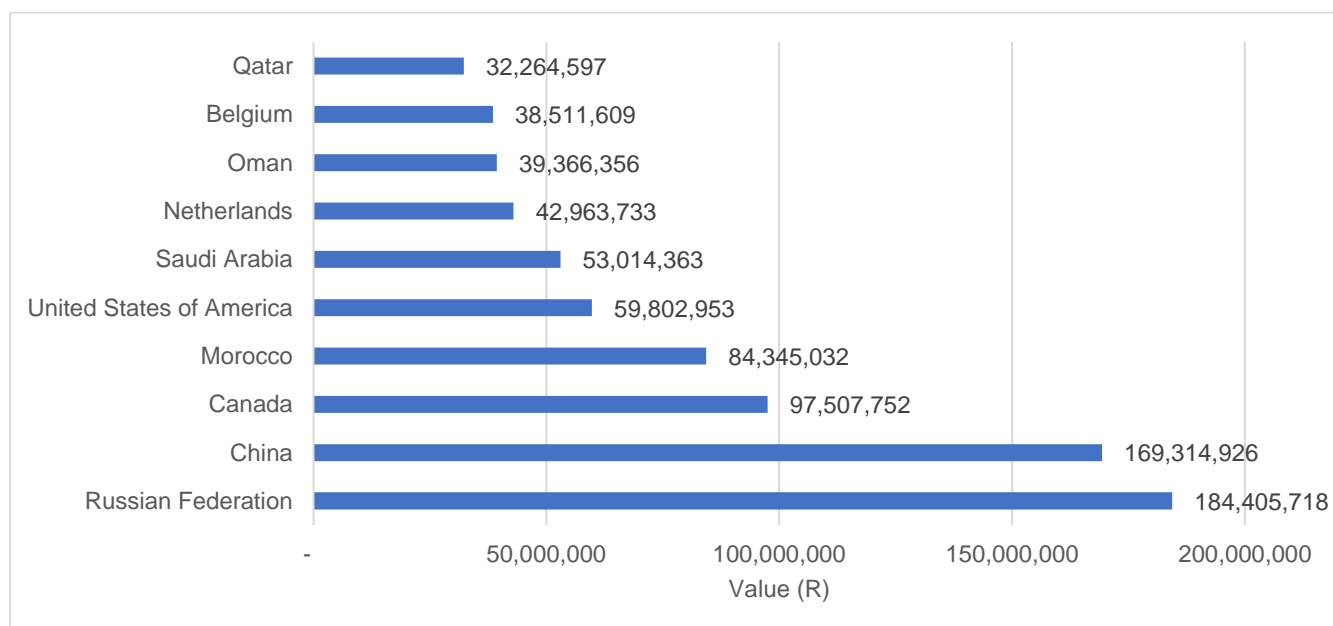


Figure 9: Leading fertiliser exporting countries worldwide in 2021 based on value (value in South African Rand). Source: ITC, (2022).

PRICES: Fertiliser international prices have been on a stable trend between 2017 and 2020 with an abrupt surge in 2021 in all fertilizer types except for Potassium Chloride which only increased in 2022. According to World Bank (2022), Nitrogen-based fertilisers of Di-ammonium Phosphate and Urea started with a price of US\$323 (N\$5,640.81/ton) and US\$214 (N\$3,737.25/ton) per ton in 2017, before rapidly increasing to US\$761/ton (N\$13,290/ton) and US\$689/ton (N\$12,032.60/ton) respectively.

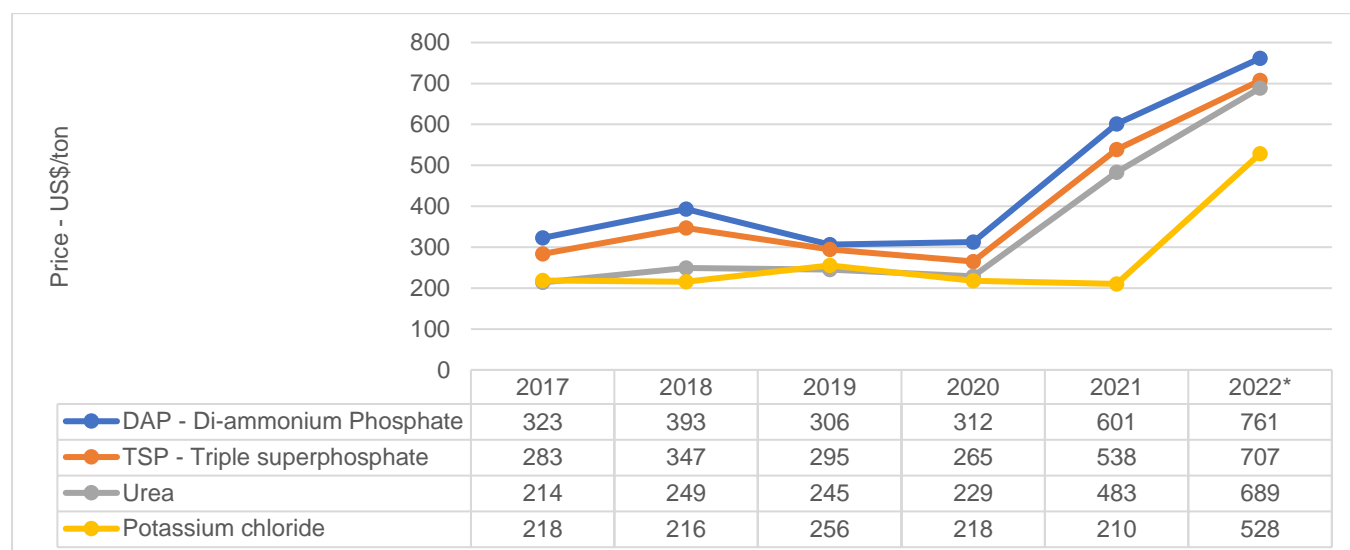


Figure 10: Global average fertiliser price trend 2017 - 2021 – in US\$/ton. Source: World Bank, (2022).
*2022 figures up to November 2022

The Triple Superphosphate and Potassium Chloride also started off with a low price of US\$283/ton (N\$4,942.26/ton) and US\$218/ton (N\$3,807.11/ton) before also spiking to US\$707/ton (N\$12,346.90/ton) and US\$528/ton (N\$9,220.89/ton) by November 2022 respectively. Throughout the period under review (2017-2022), the price of Di-ammonium Phosphate was the highest among the four types of fertilizers presented in Figure 10 above. The drastic fertiliser price increase is a response to the Russia-Ukraine war due to the disruptions in trading routes, especially considering that Russia is the top global fertiliser exporter as depicted in Figure 9 (World Bank, 2022).

3. AFRICA AND SOUTHERN AFRICA PERSPECTIVE

PRODUCTION: Fertiliser production in Africa is quite low and the continent is only responsible for 5% of the world's fertiliser production which is equivalent to slightly over 11,2 million tons per year over a 5-year average (2016-2020), FAOSTAT (2022). Nitrogen nutrient fertiliser is the most commonly produced in Africa with an increase to 7,8 million tons in 2020 from 4,3 million tons in 2016. Phosphate fertiliser production in Africa also increased from 3,7 million tons in 2016 to 4,7 million tons in 2020, with a peak

record of 5,1 million tons in 2017. Potash fertiliser production in Africa is quite low with a production of below 10,000 tons during the past three years (2018-2020).

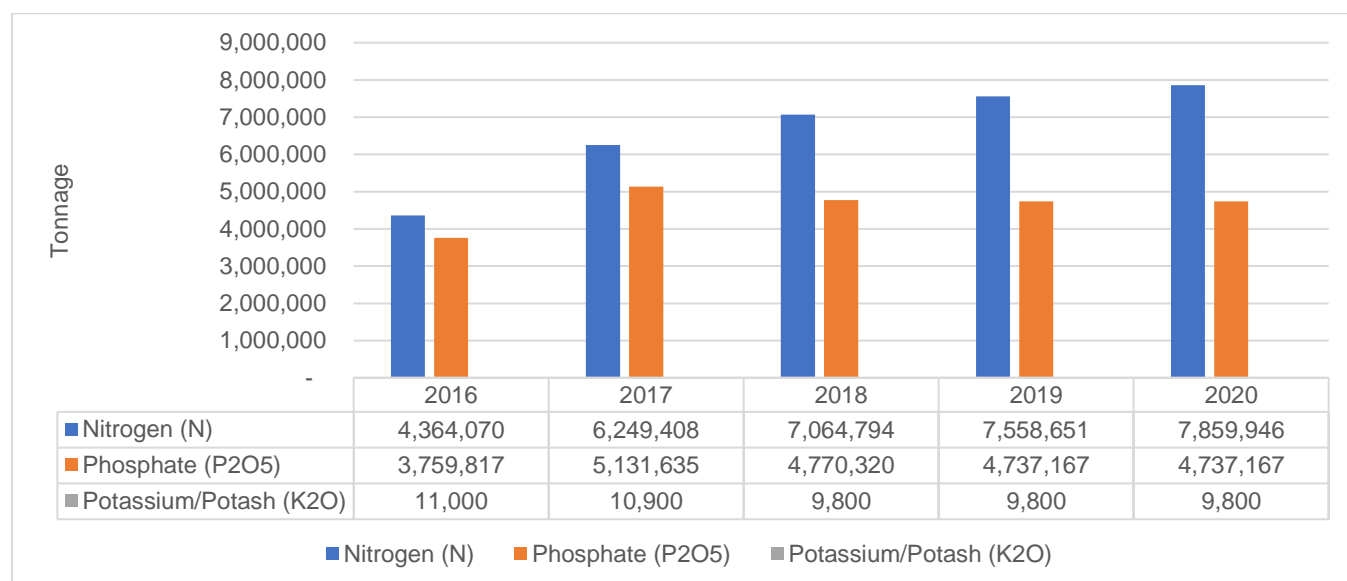


Figure 11: Fertiliser production in Africa by nutrient type (average tons). Source: FAOSTAT, (2022)

Egypt is recorded to be the largest producer of Nitrogen fertiliser in Africa with a total production of 4,5 million tons in 2020. Egypt is then followed by Morocco and Algeria with a total production of 1,1 and 1,04 million tons in 2020 respectively.

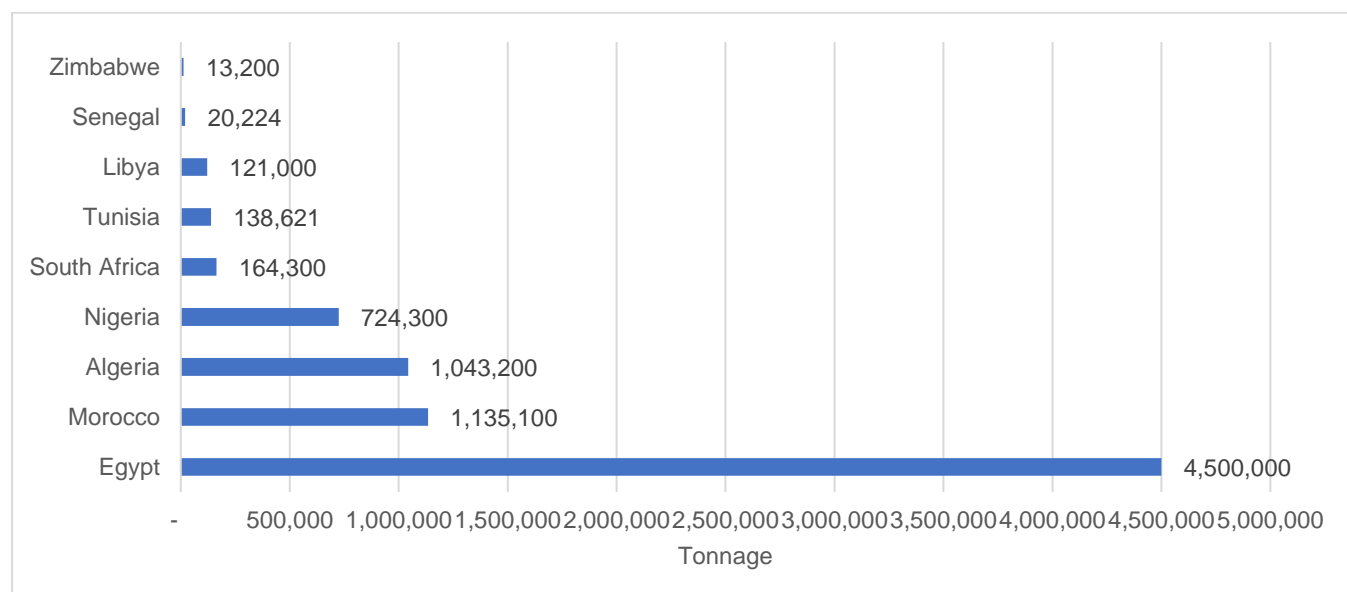


Figure 12: Top 10 Nitrogen fertiliser producers in Africa in 2020 (tons). Source: FAOSTAT, (2022)

According to FAOSTAT (2022), phosphate fertiliser is only produced in seven countries in Africa of which Morocco is the largest phosphate producer in Africa accounting for over 70% (3,7 million tons) of Africa's

phosphate production in 2020. Egypt is the second largest phosphate producer, followed by Tunisia with just over 462 and 277 thousand tons respectively.

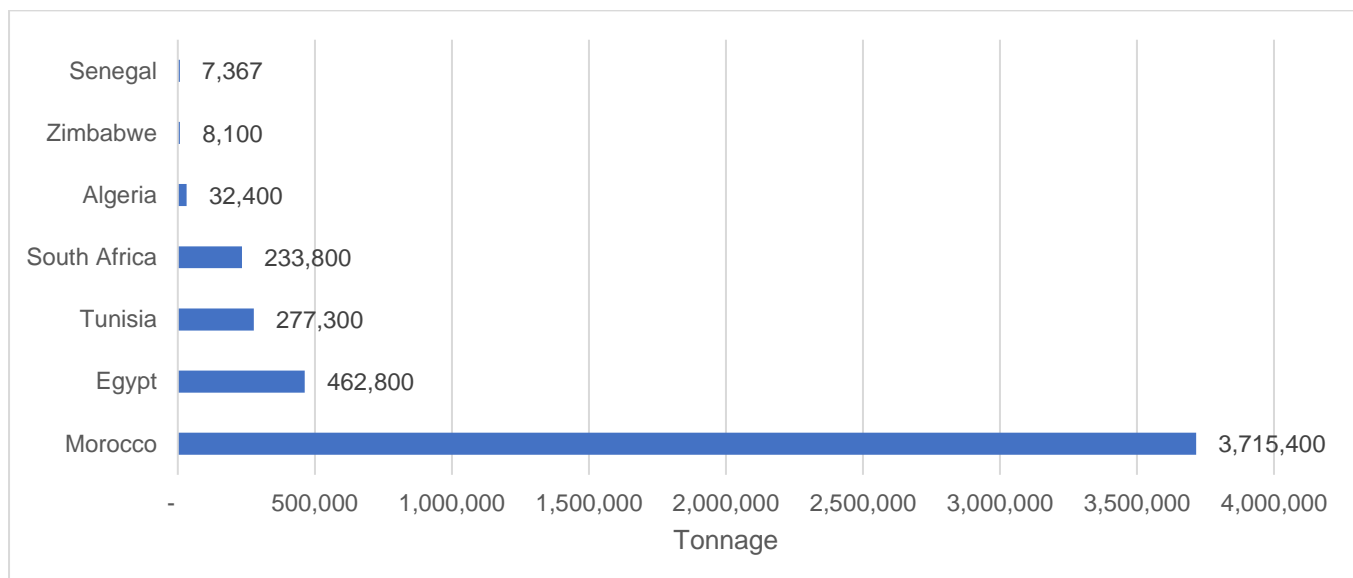


Figure 13: Top 10 Phosphate fertiliser producers in Africa in 2020 (tons). Source: FAOSTAT, (2022)

Potash or Potassium based fertiliser in Africa is very limited. According to FAOSTAT (2022), Egypt is the only African country producing Potash fertiliser with a total production of 9,800 tons in 2020.

CONSUMPTION: Fertiliser consumption in Africa has been on a fluctuating trend with a consumption of 7 million tons in 2018 down to 6,7 million tons in 2019 and up again to 7,6 million tons in 2020 (IFASTAT, 2022).

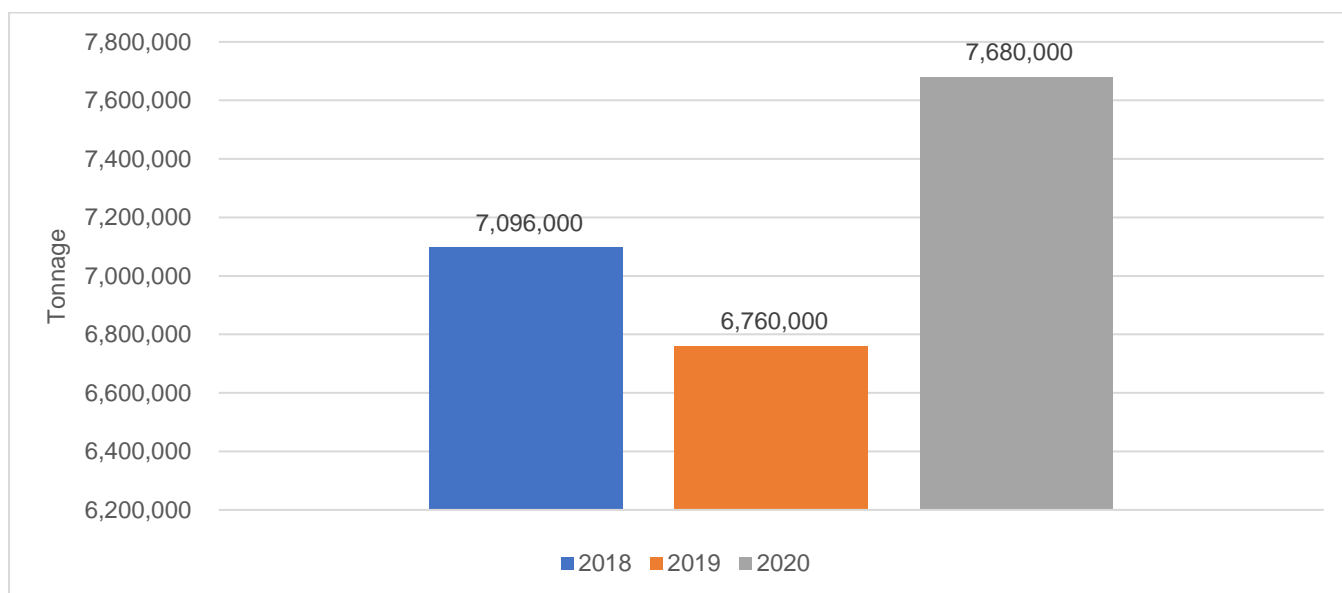


Figure 14: Fertiliser consumption trend in Africa (tons). Source: IFASTAT, (2022)

As it is the same for global consumption, Nitrogen fertiliser is also the most consumed in Africa with over 4 million tons consumed fertilisers from 2018-2020. This is followed by Phosphate fertilisers with a consumption rate of between 1,7 and 1,8 million tons over the same period. Potassium fertilisers are the least consumed with a consumption rate of below 1,2 million tons during the same period under review.

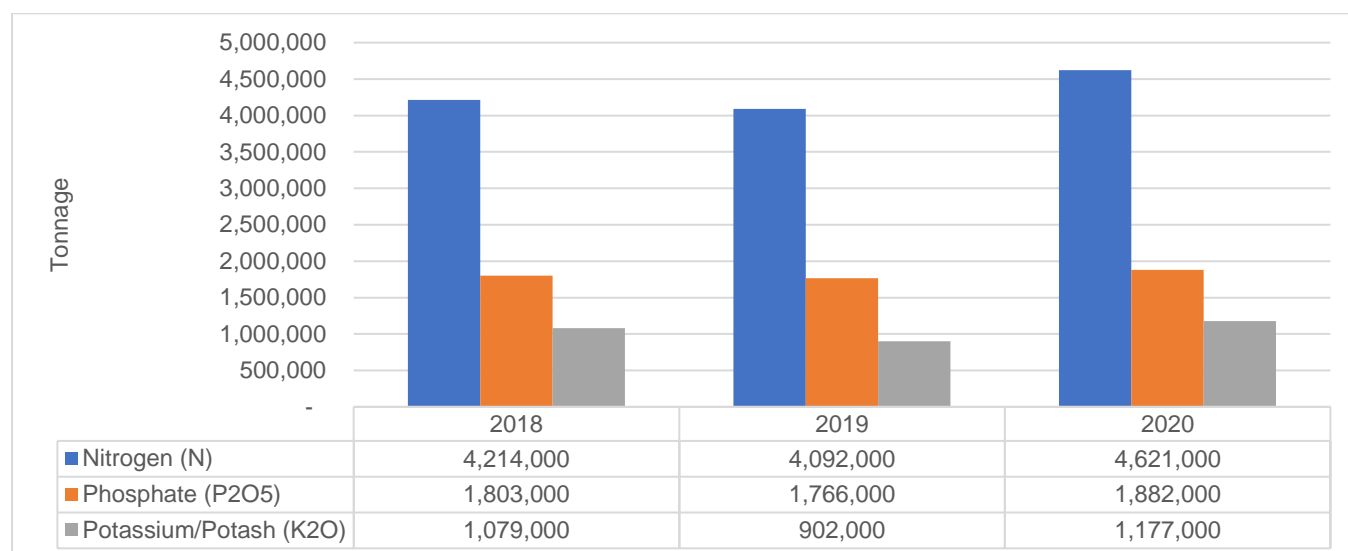


Figure 15: Fertiliser consumption in Africa by nutrient type (tons). Source: IFASTAT, (2022)

A total of 1,436,913 tons of fertiliser was consumed in Southern Africa and South Africa alone consumed 53% of the total fertilisers amounting to 761,900 thousand tons in 2020. The second largest fertiliser consumer in Southern Africa during 2020 was Zambia with 303,103 tons followed by Zimbabwe with a total consumption of 132,800 tons. Namibia consumed the lowest amount of fertiliser in the subcontinent with 2,981 tons. Nitrogen had the highest consumption of all the fertiliser nutrient types and it is highly consumed in South Africa and Zambia.

Table 2: Fertiliser consumption in Southern Africa in 2020 (tonnage)

Country	Nitrogen (N)	Phosphate (P2O5)	Potassium/Potash (K2O)	Total	% share
South Africa	381,000	248,900	132,000	761,900	53%
Zambia	191,734	57,818	53,552	303,103	21.1%
Zimbabwe	50,100	45,800	36,900	132,800	9.2%
Malawi	77,290	21,388	18,623	117,301	8.2%
Mozambique	47,901	8,107	7,350	63,357	4.4%
Angola	23,881	8,180	10,074	42,135	2.9%
Botswana	9,997	1,672	1,666	13,336	0.9%
Namibia	2,728	67	186	2,981	0.2%
Total consumption in Southern Africa				1,436,913	100%

Source: FAOSTAT (2022)

IMPORTS: Fertiliser imports into Africa have shown a steady increase over the past five years (2017-2021). According to ITC, Africa imported fertilisers worth R58,4 million in 2017 and this value has since increased to over R81,7 million in 2021.

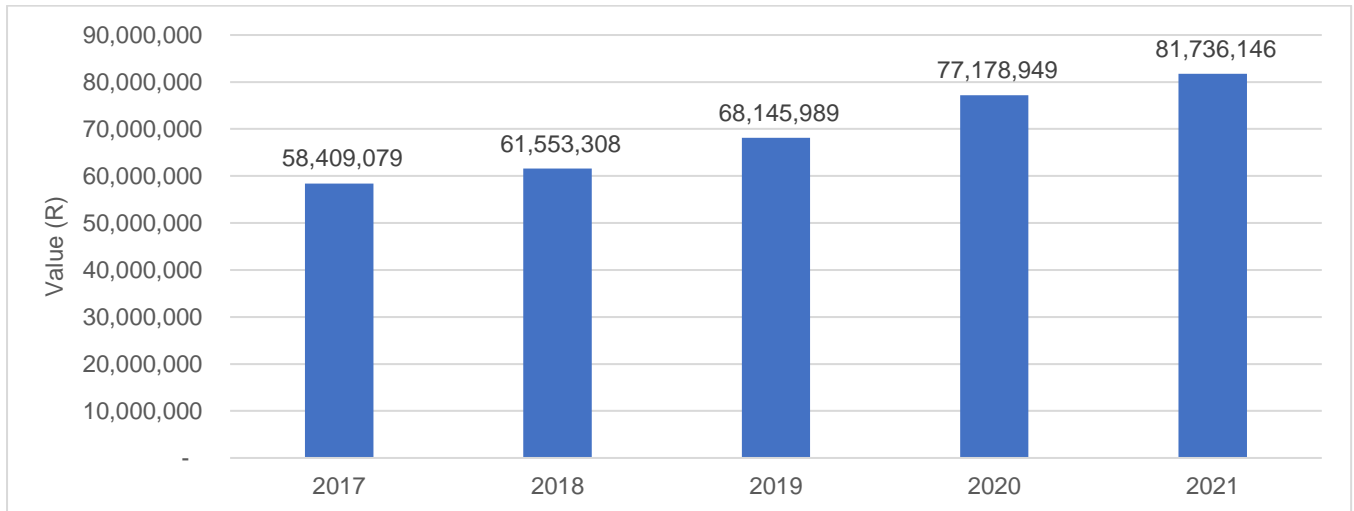


Figure 16: Africa fertiliser imports value - South African Rand (R). Source: ITC, (2022)

Of the total value of fertilisers imported by Africa in 2021 (R81,7 million), at least 75% (R61 million) was imported by only 10 countries of which South Africa was the largest importer with R15,2 million worth of fertilisers imported. South Africa is followed by Ethiopia and Zimbabwe which imported fertilisers worth R8,7 million and R6,5 million during the same year respectively.

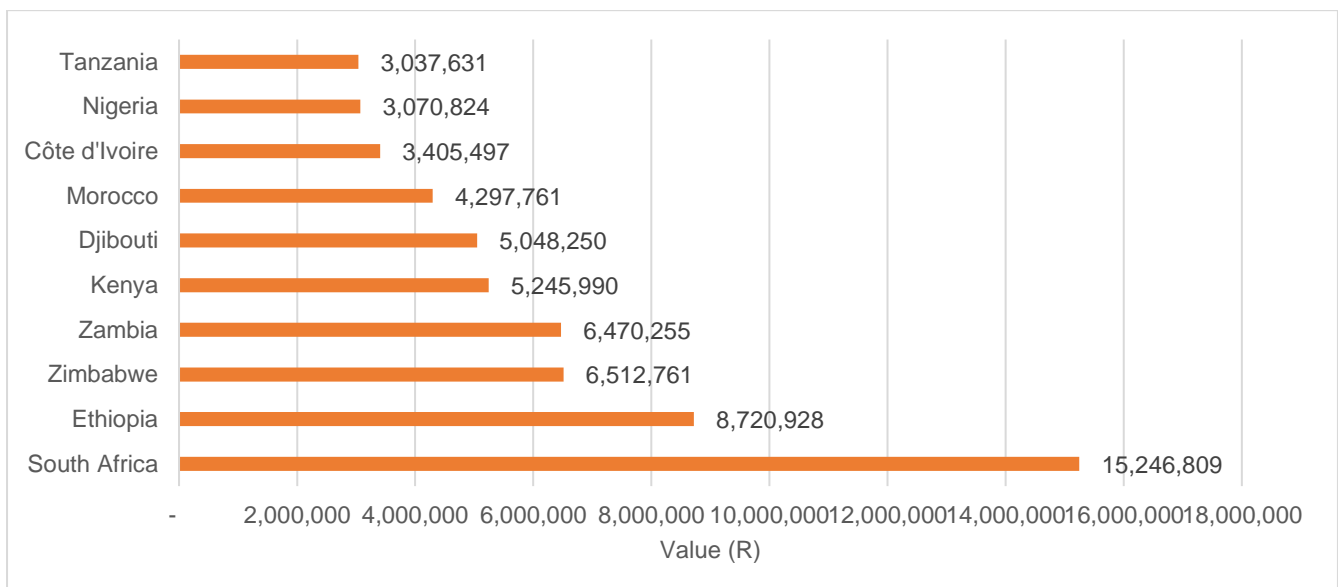


Figure 17: Africa's top 10 fertiliser importing countries in 2021 - value in South African Rand (R). Source: ITC, (2022)

EXPORTS: Fertiliser exports by Africa have also been on an upward trend since 2017. This is represented by an export value of over R158.2 million worth of fertilisers exported in 2021, an increase from an export value of R68 million in 2017.

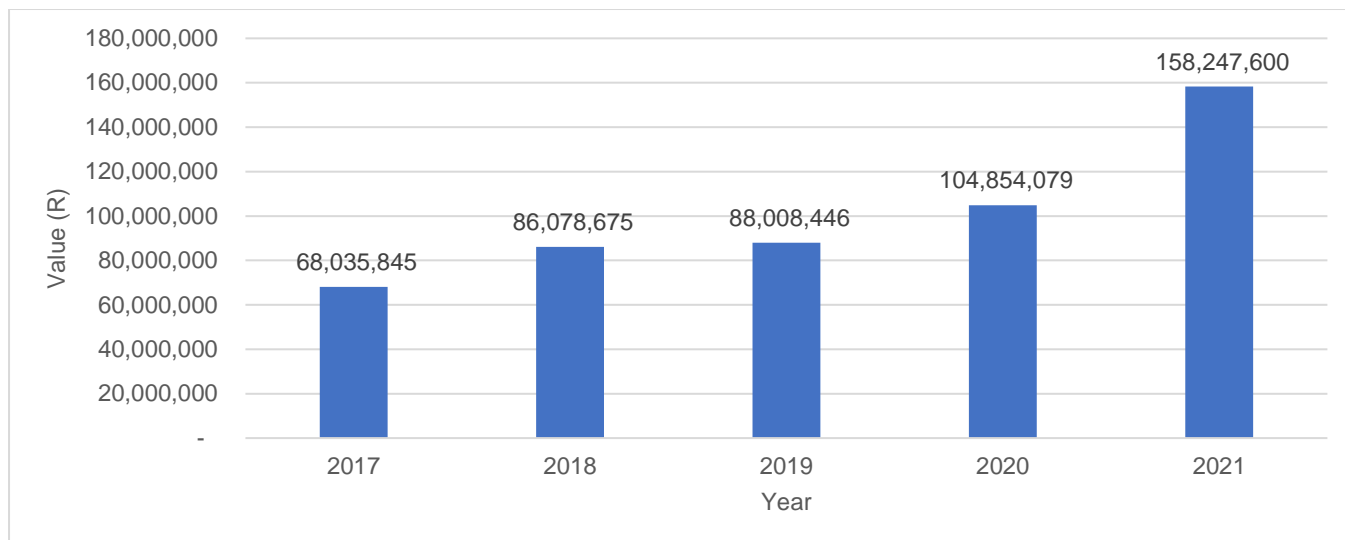


Figure 18: Africa fertiliser export value - South African Rand (R). Source: ITC, (2022)

Morocco is the largest fertiliser exporter in Africa and the country exported fertilisers worth R84,3 million in 2021. Morocco is followed by Egypt which exported fertilisers valued at R21,7 million and thereafter Algeria follows with a fertiliser export valued at R20,3 million in 2021 respectively.

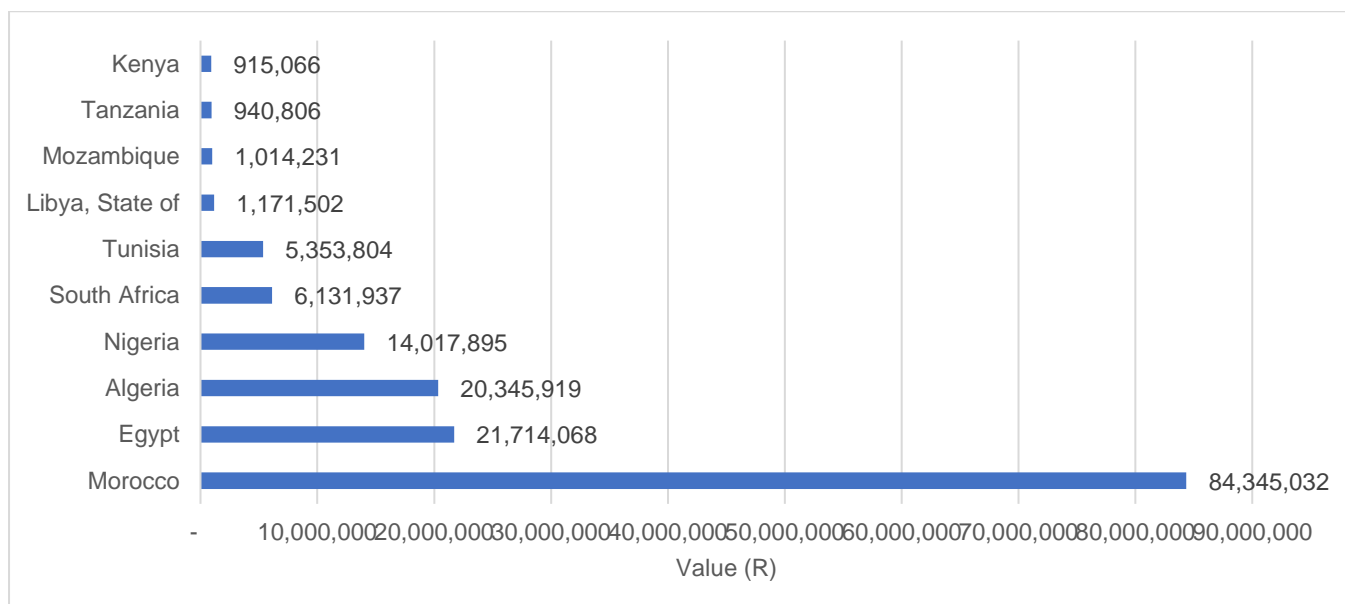


Figure 19: Africa's top 10 fertiliser exporting countries in 2021 - value in South African Rand (R). Source: ITC, (2022)

PRICES: Fertiliser prices in Southern Africa remain high as most countries, apart from Morocco, Algeria, Nigeria, Tunisia, Libya, and Senegal, are net importers of fertilisers (ITC, 2022). This means that fertiliser prices in Africa are strongly influenced by international prices, currency exchanges, market political disturbances (i.e. Russia-Ukraine conflict), and shipping costs.

Figure 20 shows the trend of fertiliser prices during the seven years from 2015 to 2021 in South Africa. There was a significant drop in prices of all fertiliser types in 2017. The price of Mono-Ammonium Phosphate has been the highest compared to other fertiliser types during the same period, recording its highest price peak in 2021 at R13,521 per ton. Limestone Ammonium Nitrate (LAN) was the lowest-costing fertiliser with its highest price recorded in 2021 at R8,471/ton and its lowest price recorded in 2018 at R4,695/ton.

The average prices of all fertiliser types also recorded a sharp decrease in 2017, however, it soon indicated an increasing trend from 2018. Overall, it is evident that between 2015 and 2020, the average prices of fertilisers in South Africa increased less significantly before a sharp increase in 2021.

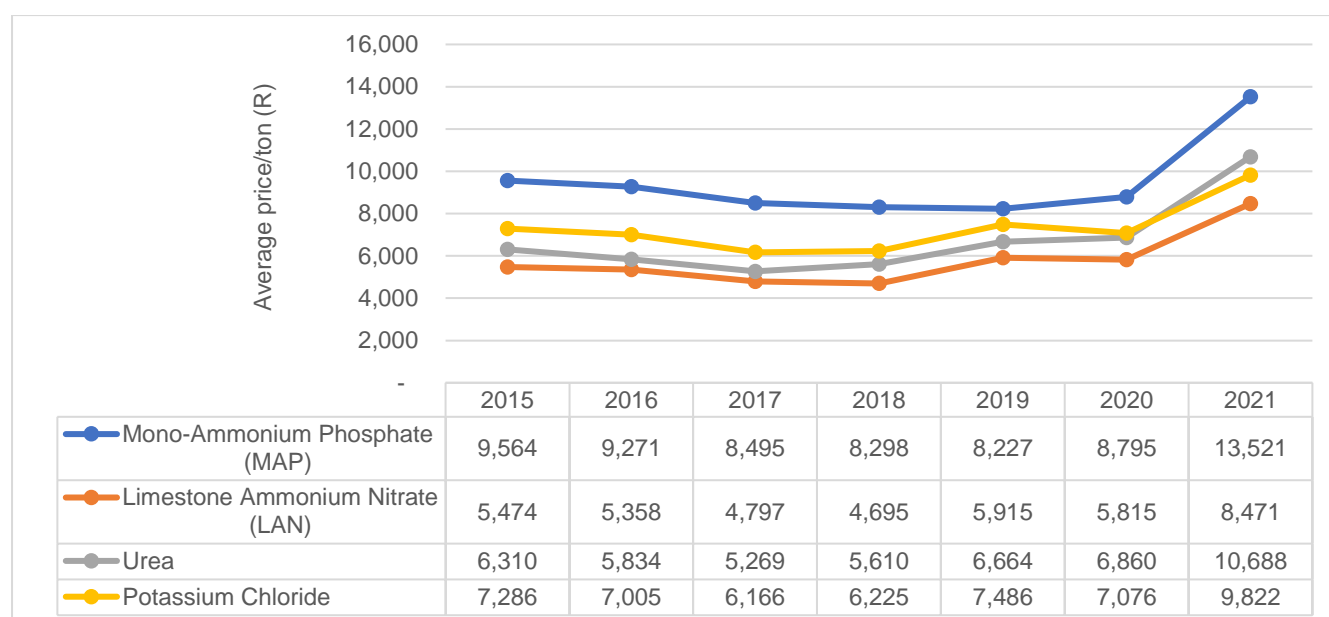


Figure 20: South Africa fertiliser prices - value in South African Rand (SAR). Source: DAFF - RSA & GrainSA (2022)

4. DOMESTIC OUTLOOK

PRODUCTION AND CONSUMPTION: Namibia is a net importer of fertiliser and it imports 100% of its fertilisers. This means that Namibia as a country does not produce any chemical fertilisers. In terms of consumption, Namibia has seen a stable trend from 2016 to 2019 with an average consumption of over 20,000 tons each year, before recording a sharp drop off below 3,000 tons in 2020.

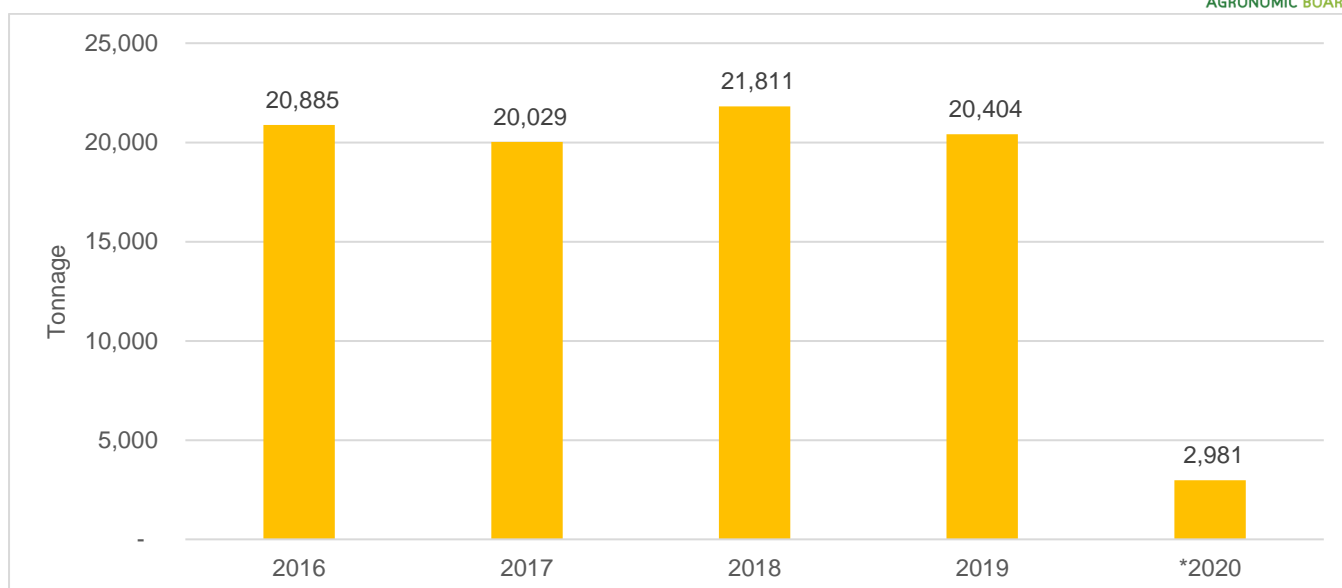


Figure 21: Fertiliser consumption in Namibia (Tonnes). Source: FAOSTAT, (2022)

*2022 figures might be incomplete

IMPORTS: Namibia imported over 90% of its fertilisers from South Africa and in 2021, the country imported an overall US\$36,743,000 (N\$631,773,839) worth of fertilisers of which US\$34,080,000 (N\$585,985,152) was imported from South Africa. The second largest import of fertilisers was sourced from the Russian Federation and this was worth US\$1,766,000 (N\$30,365,310). A significant amount of fertiliser was also sourced from Chile, China, and Malaysia. It should be noted that some of these fertilisers may have been in transit to other neighbouring countries such as Angola, Zambia, etc. of which the exact value may not be known.

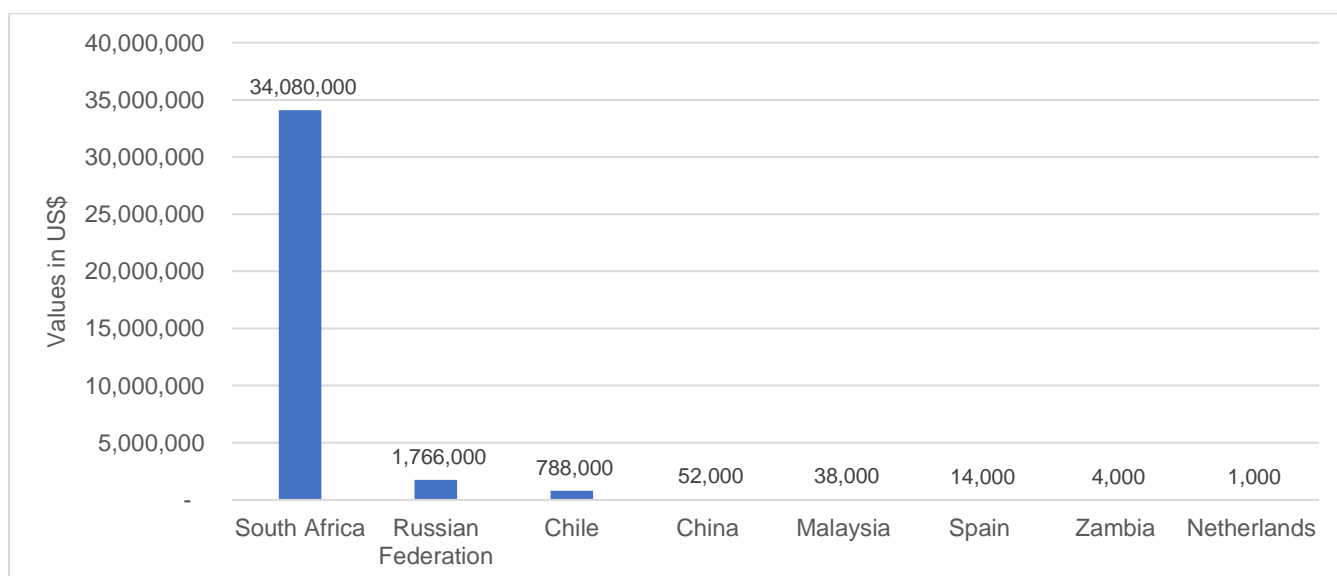


Figure 22: Namibia fertiliser imports in 2021. Source: ITC, (2022)

EXPORTS: With regards to exports, Namibia exported US\$4,638,000 (N\$79,747,627) worth of fertilisers in 2021 and this is mainly inorganic fertilisers. According to ITC, Namibia exported fertilisers worth US\$2,1 million (N\$37,707,319) to Zambia, US\$997 thousand (N\$17,142,817) to Angola, US\$597 thousand (N\$10,265,057) to South Africa, US\$463 thousand (N\$7,961,007) to France, US\$270 thousand (N\$4,642,488) to Belgium, US\$108 thousand (N\$1,856,995) to Germany, US\$9 thousand (N\$154,750) to Botswana and US\$1 thousand (N\$17,194) to the Democratic Republic of Congo in 2021 respectively.

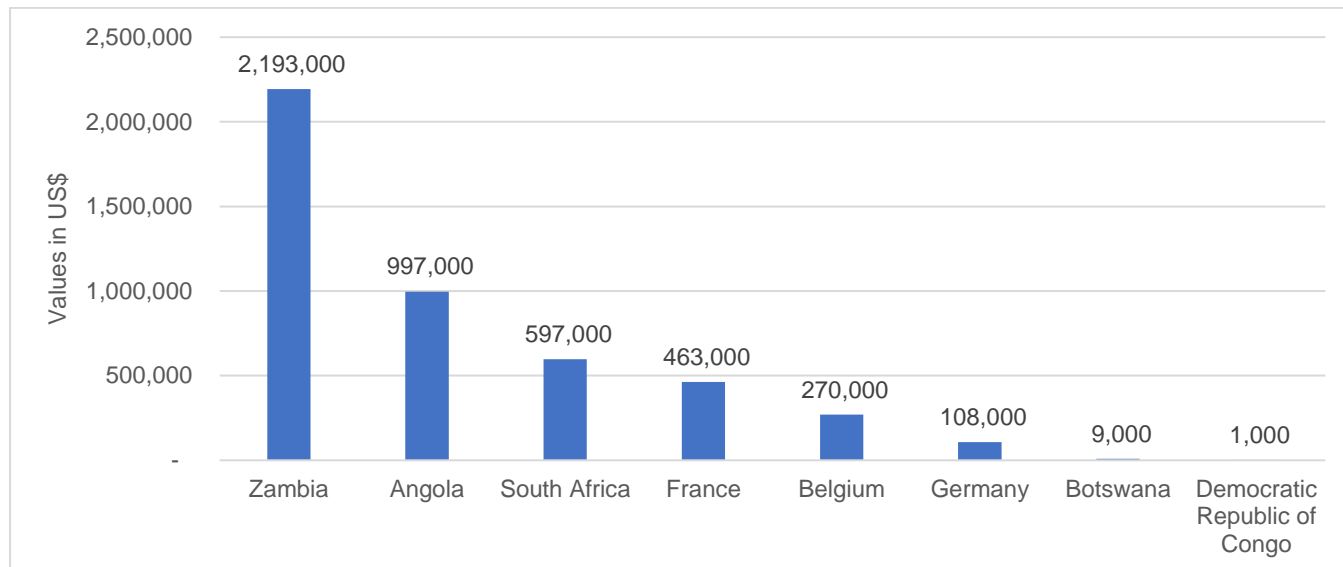


Figure 23: Namibia fertiliser exports in 2021. Source: ITC, (2022)

PRICES: Namibia imports almost all its bulk fertilisers from South African manufacturers. Due to the high import costs and prices of fertiliser, it is generally not an affordable item for crop farmers in Namibia. The average prices for fertiliser prices in Namibia used in this report were collected from three (3) main agri-inputs retailers who also import these fertilisers from South Africa.

As indicated in Figure 24 below, the price of Superphosphate has been increasing from the year 2017 to 2021, with a N\$220.00 difference in prices between the two years. As of November 2021, the price of NPK was N\$726.00 per 50kg which is 85% (N\$320.00) more than its price in 2019 which stood at N\$406.00. In 2017, a 50kg bag of Ammonium Sulphate cost N\$288.00, and although it slightly decreased to N\$18.00 in 2019, the price rapidly surged by N\$271.00 to N\$542.00 in 2021. A 50kg bag of urea cost N\$390.00 more in 2021 than it cost in 2019 and N\$439.00 more than it cost in 2017. The prices presented in Figure 24 are retail prices in accordance with a survey conducted by NAB with local retail shops.

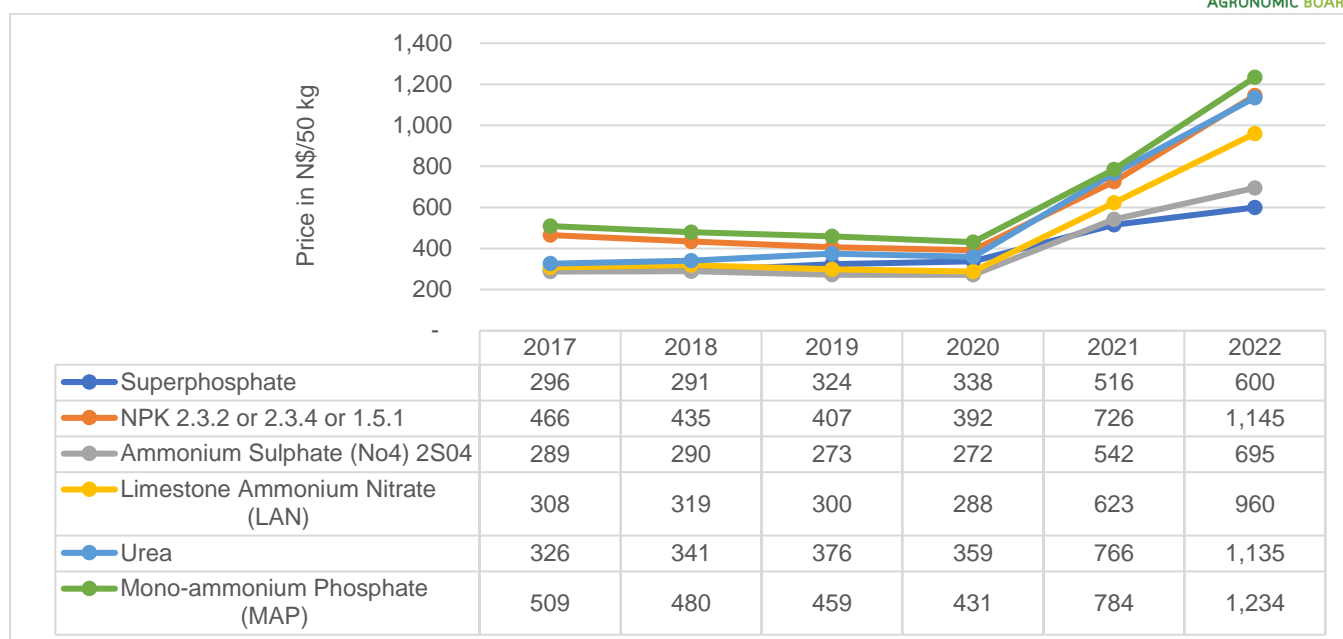


Figure 24: Namibia fertiliser average prices (retail) trend (values in N\$/50 kg bag). Source: NAB survey, (2022). **NB:** 2022 data is only for the period January to October 2022.

Overall, fertiliser prices saw huge increases from 2020 to 2022 due to the Covid-19 pandemic and later the disruptions as a result of the Russia-Ukraine conflict. This is so because, during the pandemic, transport and logistics regulations and disruptions had a negative effect which resulted in the high surge in fertiliser prices as seen in 2022.

5. KEY POTENTIALS

Fertiliser prices increase mainly due to several factors such as low stock levels caused by rising natural gas prices, and earlier plantings in the US and EU, which increased demand for fertilisers. Lower supply from China also supported price hikes. South African fertiliser prices followed a similar trend, spilling over to Namibia. Fertiliser prices in Namibia are heavily dependent on the prices in South Africa as its biggest supplier whilst prices in South Africa are affected by international prices of fertiliser and fertiliser production inputs. Further disruptions and regulations in the transport and logistic industries will most potentially result in an increase in fertiliser prices in Namibia.

Fertilisers have a direct impact on crop yield and eventually a country's food security. The upward trend in fertiliser prices makes it difficult for many Namibian farmers to access fertilisers, thus impacting their potential harvests and food supplies. In line with this market intelligence report, opportunities lie mainly in the investment aspect of fertiliser manufacturing in Namibia. It is, therefore, of encouragement for potential investors to tap into the production of the crop value chain which is not only limited to fertiliser production but also other agrochemicals as all these are mostly imported in high amounts. Local manufacturing of these agro-inputs could reduce prices as it has eased the burden of logistics costs.

Furthermore, farmers are encouraged to increase their productivity levels to make up for the high input costs and remain profitable.

6. REFERENCES

- Department of Agriculture, Forestry and Fisheries, Republic of South Africa. (2022). *South African fertilisers market analysis report 2020*.
<https://www.dalrrd.gov.za/doaDev/sideMenu/Marketing/Annual%20Publications/South%20African%20Fertiliser%20Market%20Analysis%20Report%202020.pdf>
- FAOSTAT. (2022). <https://www.fao.org/faostat/en/#data/RFN/visualize>
- Fernandez L. (2022). *Statista: Consumption of agricultural fertilizer worldwide in 2021 by nutrient and region*.
<https://www.statista.com/statistics/1265868/global-fertilizer-consumption-by-nutrient-and-region/>.
- Fernandez L. (2022). *Statista: Consumption of fertilisers worldwide in 2019 by country*.
<https://www.statista.com/statistics/1287852/global-consumption-fertiliser-by-country/#:~:text=China%20is%20the%20world%27s%20largest,and%2020.4%20million%20tons%2C%20respectively.>
- Fernandez L. (2022). *Statista: Production of fertilisers worldwide from 2005 to 2020 by nutrient*.
<https://www.statista.com/statistics/1290786/global-fertiliser-production-by-nutrient/>
- Grain SA. 2022. *Report documents*. <https://www.grainsa.co.za/report-documents?cat=21>,
<https://www.grainsa.co.za/report-documents?submitted=1&cat=21&find=>
- International Fertiliser Association (IFASTAT). (2022). https://www.ifastat.org/databases/graph/1_1
- International Trade Centre (ITC). (2022). *Trademap*. <https://www.trademap.org/Index.aspx>
- Stewart E. R. (2022). *Encyclopaedia Britannica. Fertiliser: Agriculture*.
<https://www.britannica.com/topic/fertiliser>
- World Bank. (2022). *Commodity markets*. <https://www.worldbank.org/en/research/commodity-markets>

PUBLISHED BY:

Namibian Agronomic Board
Agronomy and Horticulture Market Development Division
Research and Policy Development Subdivision

Address: P.O. Box 5096, Windhoek

Tel: 061 379 500

Website: www.nab.com.na

DISCLAIMER

Information contained in this document results from desktop research conducted wholly by the Namibian Agronomic Board (NAB) for information purposes and in good faith. Opinions, attitudes, and points of view expressed herein do not necessarily reflect the official position or policies of the NAB. The NAB makes no claims, promises, or guarantees about the accuracy, completeness, or adequacy of the contents of this document, and the author(s) or NAB, therefore, accepts no liability for losses incurred resulting from the use of this information. Any reference made to a specific product, process, or service by trade name, trademark, manufacturer or other commercial commodity or entity is for information purposes only and does not imply approval, endorsement, or favouring by the NAB.