

Custom Research Study on Global & India WSF (Water Soluble Fertilizers) Market Demand Assessment, 2017-2035 & Production Overview- Final Report



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WSF (Water Soluble Fertilizers) are fertilizers that are completely soluble in the water and are readily available for absorption by plants. They are easy to apply with minimum efforts such as Foliar Spray and Fertigation avoiding evaporation, leaching or water-runoff especially for hydroponics and drip irrigation method-based farming

Key end uses of WSF include foliage crops, field & cash crops, fruits & vegetables, gardening & horticulture

Market Segmentation



Type

- Mono Ammonium Phosphate (12-61-0)
- Mono Potassium Phosphate (0-52-34)
- Potassium Nitrate (13-0-45)
- Potassium Sulphate (0-0-50)
- Calcium Nitrate (15.5-0-0-19)

India Market Regions

- North India
- South India
- East India
- West India

Application

- Foliage Crops
- Field & Cash Crops
- Fruits & Vegetables
- Gardening & Horticulture

Year Range

Base Year

2017-2020

Base Year

2021

Estimated Year

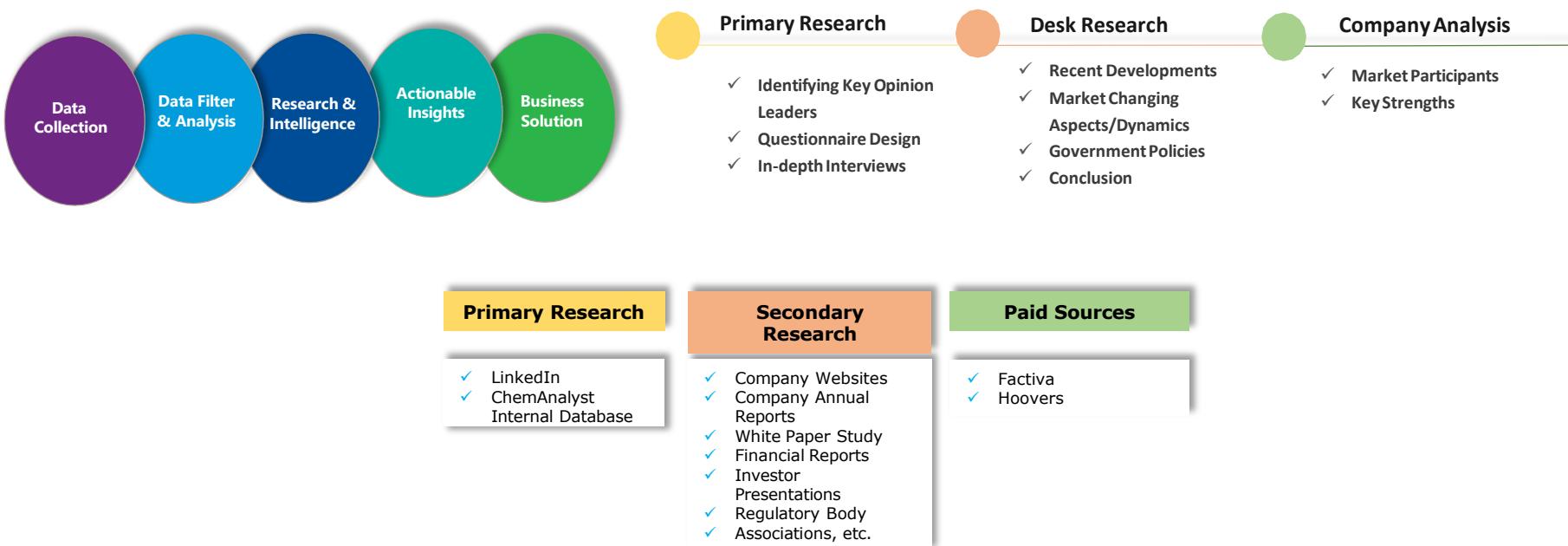
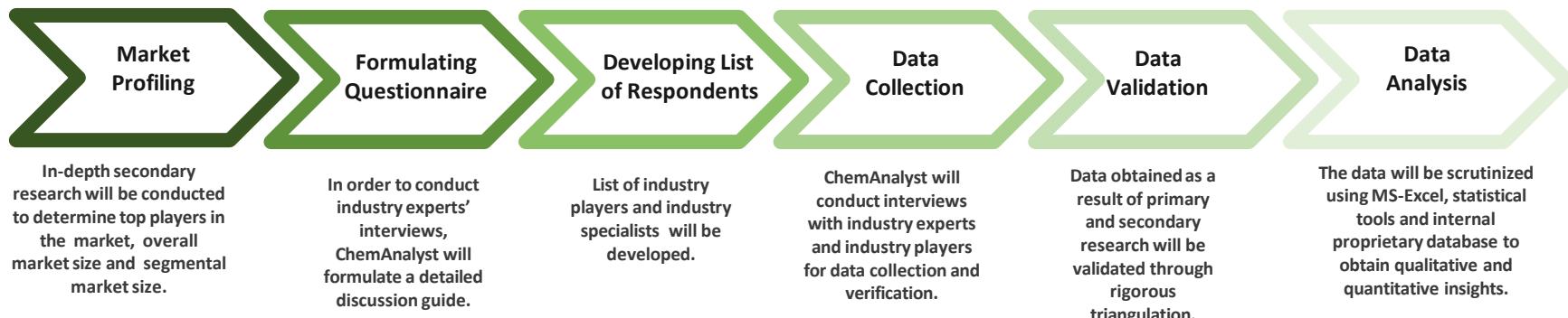
2022

Forecast Period

2023 – 2035

Research Methodology





Research Methodology

The recommended methodology for this study is primary research followed by exhaustive Secondary Research.

Phase 1: During first phase of the study, exhaustive secondary research has been carried out to collect all the relevant documents such as company annual reports, investor presentation, relevant news/media articles. Subsequently, separate questionnaires will be designed for all the stakeholders i.e., manufacturers, traders, customers and industry experts. The objective of these questionnaires was to understand the market size, market shares, emerging trends, challenges, unmet needs, competition and existing players future strategies.

Research Contribution		Survey Mode	
Primary Research	55%	F2F Interviews	25%
Secondary Research	45%	CATI, CAWI, Phone	75%

Phase 2: ChemAnalyst has been executing primary surveys with mix of Telephonic and Face-2-Face methodology. Initially, market sizing and estimation has been carried based on the survey responses received from suppliers which has been verified through secondary sources as well back calculating the demand in end use industries to identify demand and supply scenario.

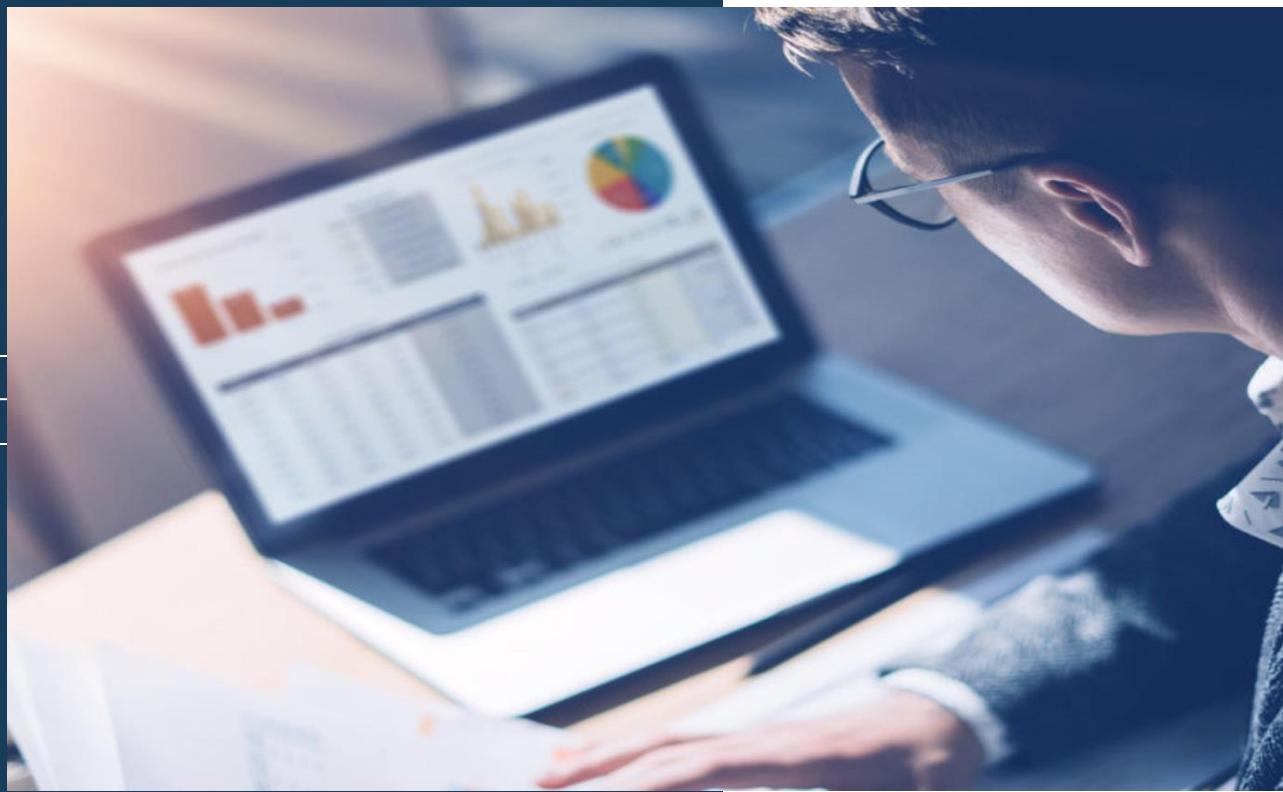
$$\text{Demand} = \text{Production} - \text{Export} + \text{Import}$$

$$\text{Demand Supply Gap} = \text{Production} - \text{Actual Consumption}$$

Phase 3: ChemAnalyst has performed periodical checks on data collected through the surveys with logic checks and analyze the survey results in SPSS/Tableau Software. Data triangulation techniques has been applied to fill the gaps and to present a more meaningful picture of the market. To forecast market, ChemAnalyst has utilized various forecast techniques such as:

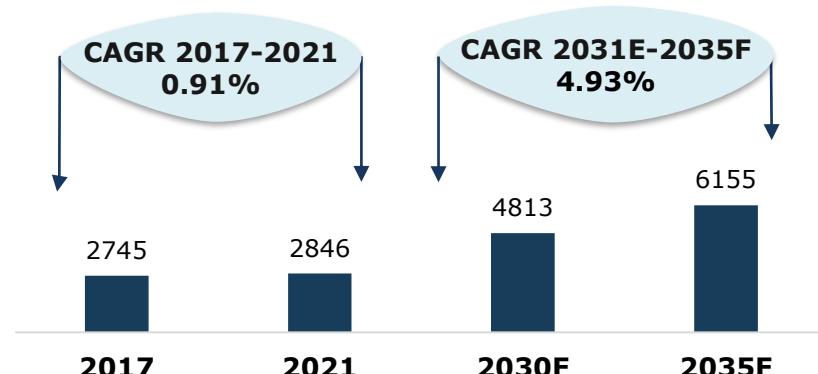
- ✓ Moving Average
- ✓ Time Series Analysis
- ✓ Regression Analysis (Dependent Variable = Intercept + Slope X Independent Explanatory Variable + Residual (Error))
- ✓ Econometric and Judgmental Analysis

Executive Summary

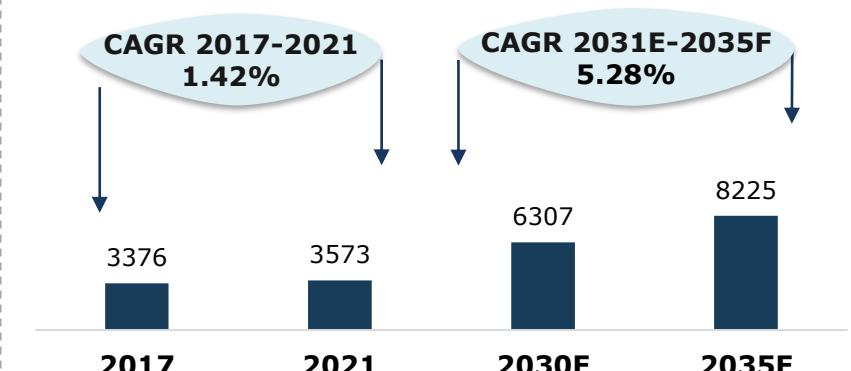


Executive Summary: Global & India Water Soluble Fertilizers Market, 2017-2035

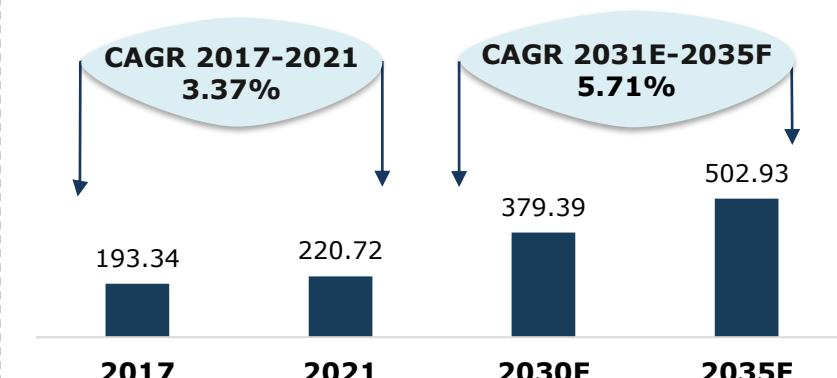
1 Global Water Soluble Fertilizers Market Size, By Volume, 2017, 2021, 2030F & 2035F (Kilo tonnes)



2 Global Water Soluble Fertilizers Market Size, By Value, 2017, 2021, 2030F & 2035F (USD Millions)



3 India Water Soluble Fertilizers Market Size, By Volume, 2017, 2021, 2030F & 2035F (Kilo tonnes)



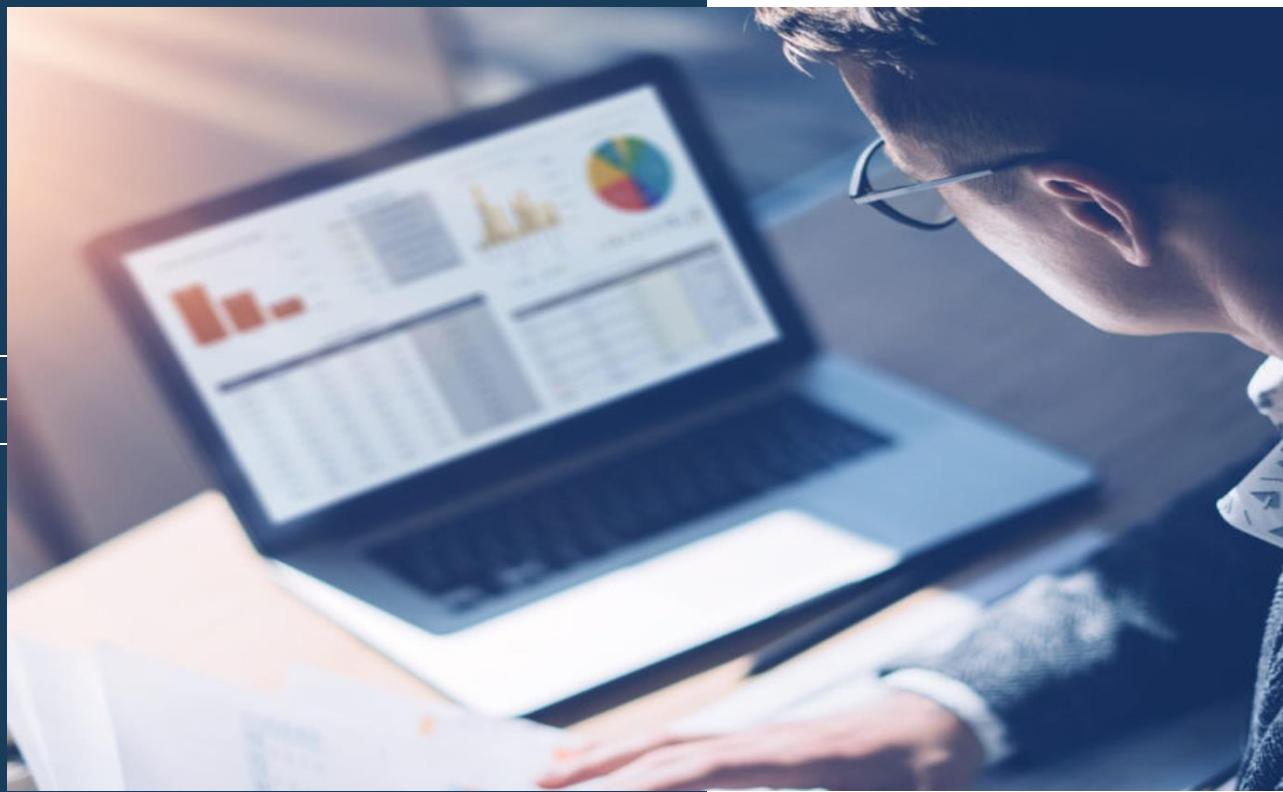
4 India Water Soluble Fertilizers Market Size, By Value, 2017, 2021, 2030F & 2035F (USD Millions)



Source: ChemAnalyst

- The global water soluble fertilizer (WSF) market size was valued at USD3573 millions in 2021 & is projected to reach USD6307 millions by 2030, at a CAGR of 6.05% in forecast period.
- Water soluble fertilisers have grown in popularity due to a growing demand for high-quality crops, environmental concerns, and a push for increased nutrient usage efficiency (NUE). Growers profit from these fertilisers because they improve nutrient availability, reduce bacterial activity, and fulfil the crop's specific nutrient requirements. The application schedule for these fertilisers is likewise created with the crop growth stage in mind, as well as the soil's physical, chemical, and biological qualities.
- WSF use in India has increased dramatically in recent years, reaching 220 KT in 2021. The expansion of horticulture and high-value crops, as well as enhanced coverage under micro-irrigation, have been the primary drivers of WSF consumption. The Government of India (GOI) notified WSFs in FCO in 2003 in order to promote and regulate their use. WSFs are mostly used in Maharashtra, Karnataka, Andhra Pradesh, Tamil Nadu, Gujarat, and Uttar Pradesh's horticulture growing areas. It should be noted that WSFs are not eligible for subsidies. Farmers have accepted these fertilisers because they improve production, crop quality, and net revenue.

Global & India WSF Market Demand Supply Outlook



Global Production Output Capacities By Top 15 Countries, By Volume (KiloTonnes)

Country	2017	2018	2019	2020	2021	2022E	2025F	2030F	2035F
China	400	400	400	500	500	500	500	600	600
Norway	300	300	400	400	400	400	500	500	500
Belgium	300	300	300	300	300	300	300	300	300
Israel	200	200	200	200	200	200	200	200	200
USA	150	150	150	150	150	150	150	150	150
Chile	130	130	130	130	130	130	130	130	130
Jordan	120	120	120	120	120	120	120	120	120
UAE	130	130	130	130	130	130	130	130	130
Netherland	120	120	120	120	120	120	120	120	120
Germany	180	180	180	180	180	180	180	180	180
Russia	150	150	150	150	150	150	150	150	150
Spain	120	120	120	120	120	120	120	120	120
Italy	110	110	110	110	110	110	110	110	110
Brazil	100	100	100	100	100	100	100	100	100
Turkey	60	60	60	60	60	60	60	60	60
Others	780	780	780	860	860	860	900	900	900
Total	3350	3350	3450	3630	3630	3630	3770	3870	3870

Source: ChemAnalyst

Quantity of Imports by Top 10 Countries (KiloTonnes)

Countries	2017	2018	2019	2020	2021
China	293.67	305.66	334.58	323.11	369.98
India	180.42	193.72	196.87	173.01	203.49
United States of America	102.56	113.92	125.28	108.02	147.99
Brazil	80.56	86.91	93.25	70.99	105.94
Indonesia	56.52	60.89	65.26	41.02	74.00
Canada	8.67	11.13	13.58	11.04	18.50
Pakistan	85.41	91.81	98.20	75.99	110.99
Russia	25.62	28.46	31.31	23.15	37.00
France	53.82	58.86	63.91	51.95	74.00
Vietnam	103.65	110.11	116.57	94.42	129.49
Others	277.97	288.83	292.91	302.73	323.18
Total	1268.87	1350.29	1431.72	1275.44	1594.56

Source: ChemAnalyst

Global Demand – Supply Gap Projections (KiloTonnes)

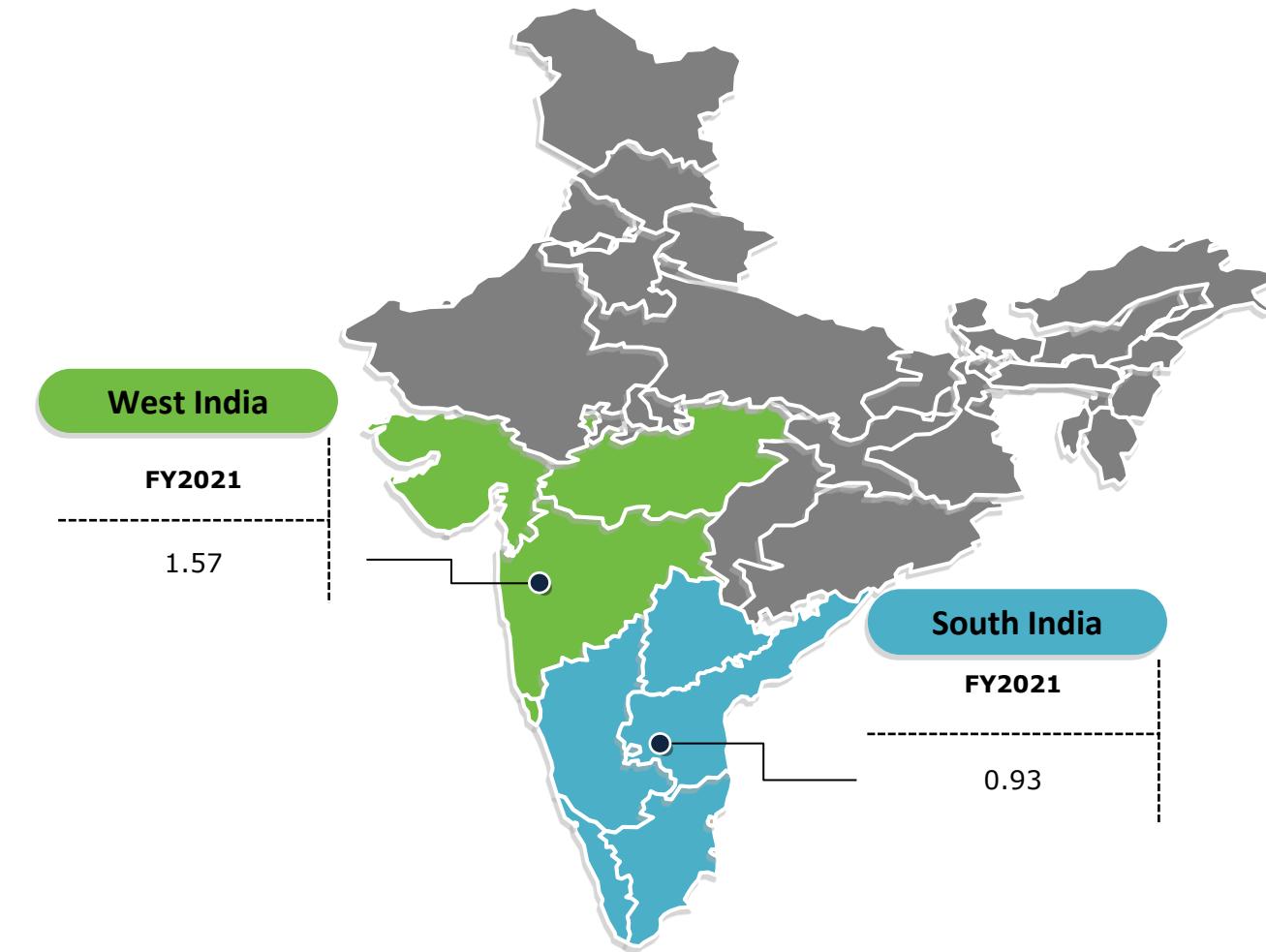
	2017	2018	2019	2020	2021	2022E	2023F	2024F	2025F	2030F	2035F
Capacity	3350	3350	3450	3630	3630	3630	3630	3730	3770	3870	3870
Production	2745	2893	2974	2701	2846	2861	2879	2975	3025	3197	3290
Import	1269	1350	1432	1275	1595						
Export	1269	1350	1432	1275	1595						
Domestic Consumption	2745	2893	2974	2701	2846	3007	3185	3381	3598	4813	6155
Demand (Y-O-Y, %)		5.39%	2.80%	-9.16%	5.34%	5.67%	5.93%	6.15%	6.42%	5.61%	4.68%
Demand-Supply Gap		0			-146	-307	-407	-573	-1616	-2865	

Source: ChemAnalyst

- Global water-soluble fertilizer market will be growing with a CAGR of 6.05% till 2030 reaching the market volume of 4813 Kilotonnes in 2030 from 3007 Kilotonnes in 2022. Moreover, a significant demand supply gap has been observed in the forecasted period due to hardly enough capacity expansions in the coming years.
- Furthermore, soil lack of important micronutrients, combined with an increase in demand for micronutrients like Zn, Fe, and others to support plant growth, is positively influencing the demand for water soluble fertilizers. Furthermore, farmers favor drip irrigation since it reduces crop cultivation costs by about 30% while also raising average fruit and vegetable output by nearly 40%. In the next years, this factor is projected to increase demand for water soluble fertilizers.
- With India's rapidly growing population, there is a growing demand for higher food yields with limited land available for agriculture. Furthermore, excessive usage of inorganic fertilizers causes an accumulation of these chemicals in the crops, which has negative health consequences. Water soluble fertilizers are used to reduce the amount of fertilizer consumed.
- The Indian government is attempting to encourage micro-irrigation by announcing plans and incentives for farmers who embrace it. In collaboration with the National Bank for Agriculture and Rural Development (NABARD), the government has suggested putting 1.6 million hectares under micro-irrigation, with a sum of \$ 700 million set aside for the project. These factors are expected to improve water soluble fertilizer sales in India in the coming years.

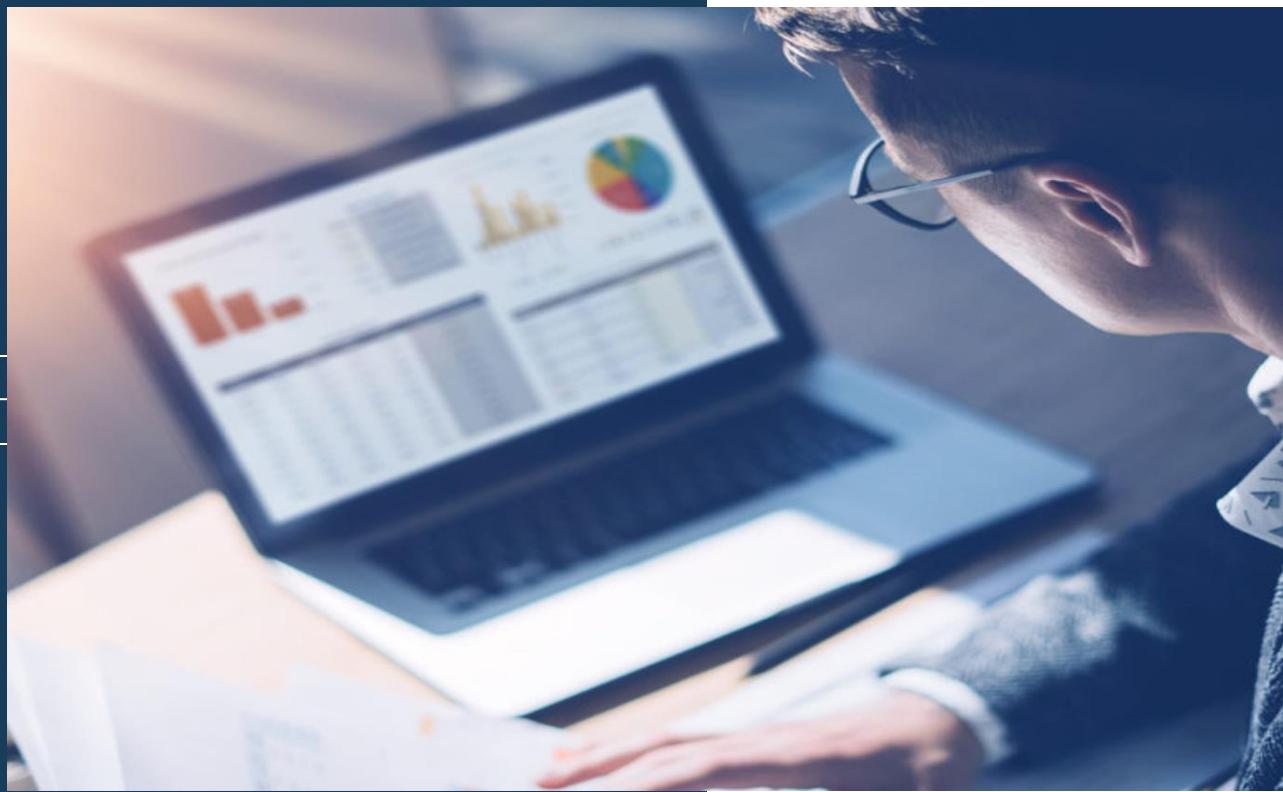
India Overall Production Volume and Output Production by Regions

India Water Soluble Fertilizers Production, By Region, By Volume (Kilotonnes)

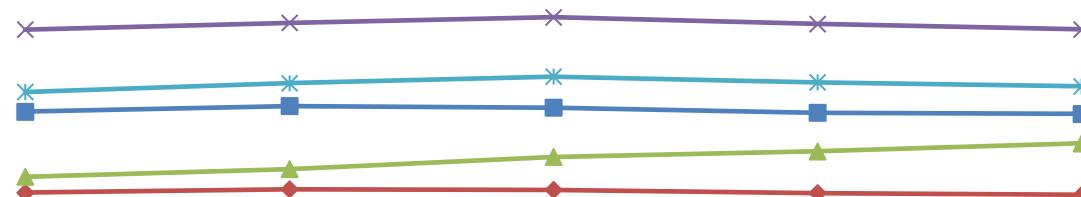


- The western and southern region are the only regions where the production of listed water-soluble fertilizers takes place, due to various factors such as large areas covered under drip irrigation and sprinkle irrigation, in which water-soluble fertilizers are highly used.
- Moreover, Calcium nitrate was being manufactured first time in India by GSFC in 2020. Calcium nitrate was being fully imported till now.
- Currently, GSFC has 10 Kilotonnes of total production capacity of calcium nitrate.
- Furthermore, no other listed water-soluble fertilizer is being manufactured in India.

Global & India WSF Market Pricing Analysis by Type, 2017-2021



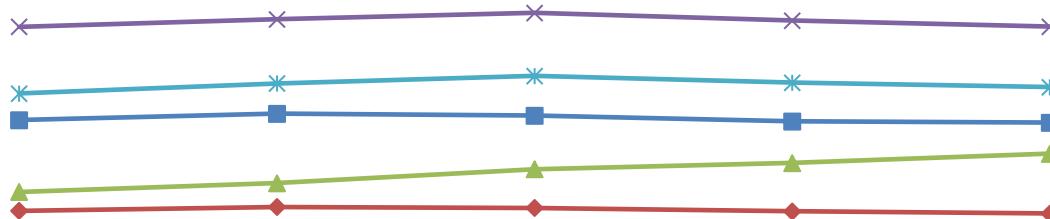
India Water Soluble Fertilizer Import Prices (INR/Kg), FY 2017 – FY 2021



	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Calcium Nitrate (15.5-0-0-19)	42.93	45.08	44.60	42.62	41.41
Potassium Nitrate (13-0-45)	94.74	98.33	97.26	94.02	93.32
Potassium Sulphate (0-0-50)	53.04	57.99	65.77	69.31	74.45
Mono Ammonium Phosphate (12-61-0)	147.24	151.53	155.10	150.81	147.35
Mono Potassium Phosphate (0- 52-34)	107.35	112.96	117.17	113.43	110.91

India Water Soluble Fertilizer Domestic Sale Prices (INR/Kg), FY 2017 – FY 2021

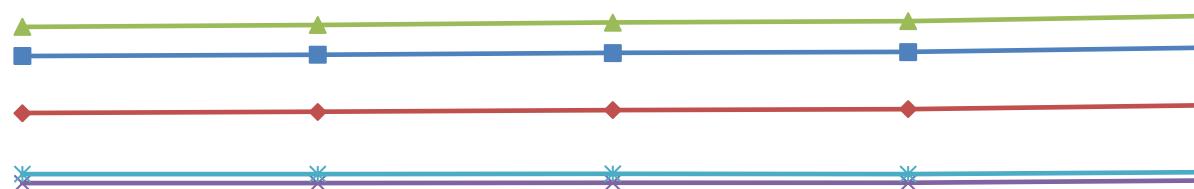
Source: ChemAnalyst



	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Calcium Nitrate (15.5-0-0-19)	45.00	47.25	46.75	44.67	43.41
Potassium Nitrate (13-0-45)	99.00	102.75	101.63	98.24	97.51
Potassium Sulphate (0-0-50)	56.25	61.50	69.75	73.50	78.95
Mono Ammonium Phosphate (12-61-0)	154.5	159.00	162.75	158.25	154.62
Mono Potassium Phosphate (0- 52-34)	114.75	120.75	125.25	121.25	118.56

Source: ChemAnalyst

Global Water-Soluble Fertilizer Regional Sale Prices (USD/Kg), FY 2017 – FY 2021

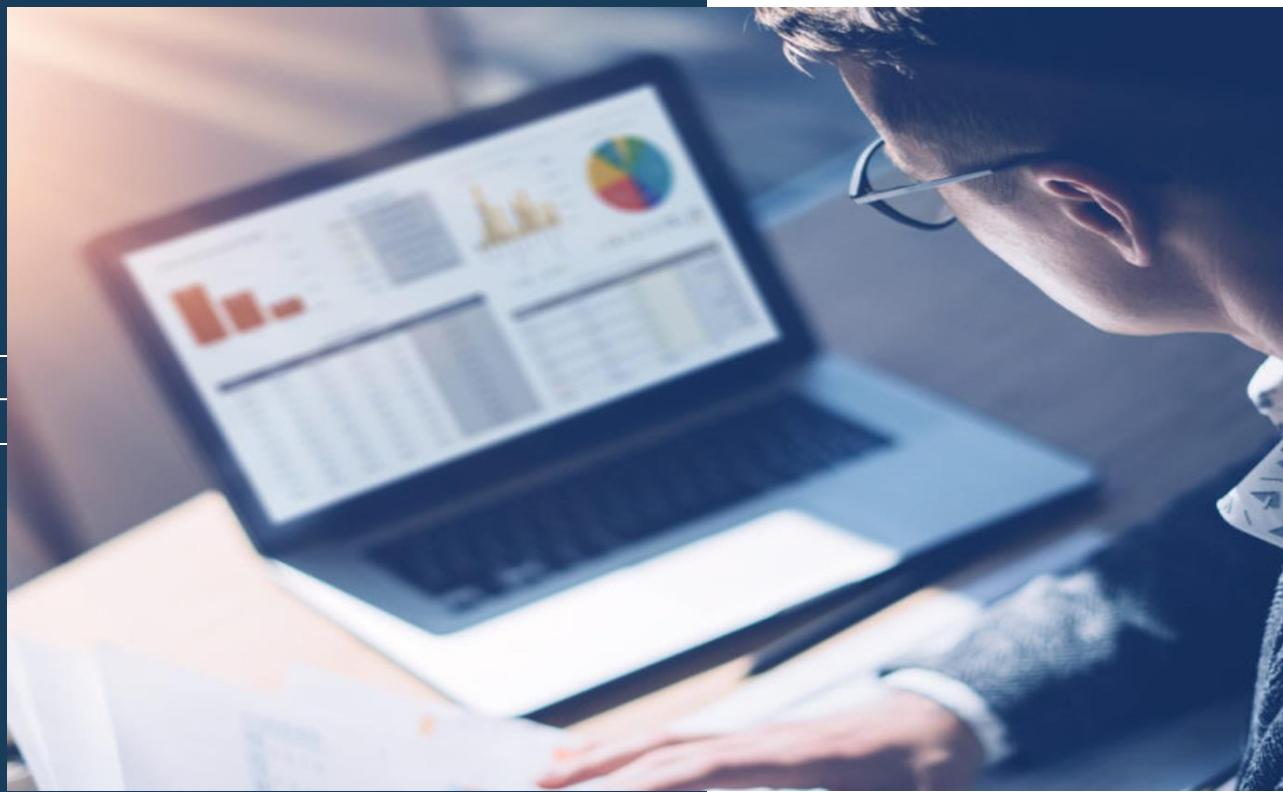


	2017	2018	2019	2020	2021
—◆— Asia Pacific	1.17	1.18	1.18	1.18	1.20
—■— Europe	1.35	1.36	1.36	1.37	1.38
—▲— North America	1.45	1.45	1.46	1.46	1.48
—×— Middle East & Africa	0.95	0.95	0.95	0.95	0.96
—*— South America	0.98	0.98	0.98	0.98	0.98

Source: ChemAnalyst

- The price of water-soluble fertilizers in Asia-Pacific region has been steadily rising because of increased demand from the agriculture sector. Increased demand of Urea and other fertilizers are affecting fertilizers due to previous energy price increases.
- Increased production costs in Europe led to low operating rates in the region, thus hampering the supplies. Furthermore, prices for the raw materials that make up the fertilizer industry, Ammonia, Nitrogen, Nitrates, Phosphates, Potash, and Sulphates, have been continuously increasing.
- The usage of Urea and Potash in US has been relatively high. On the supply side, natural gas prices in the United States doubled in the first quarter of 2021, significantly raising the cost of producing Water-Soluble fertilizers. In addition, shipping prices rose considerably in 2021, particularly for goods from Asia to North America.
- MEA having the minimum prices of natural gas which in turn accounts for lower cost of production therefore possess the minimum sales price out of all the regions.

Global & India WSF Market Global WSF Market Outlook (2022-2035)



Global Water-Soluble Fertilizer Market Size, By Value & Volume, 2017-2035

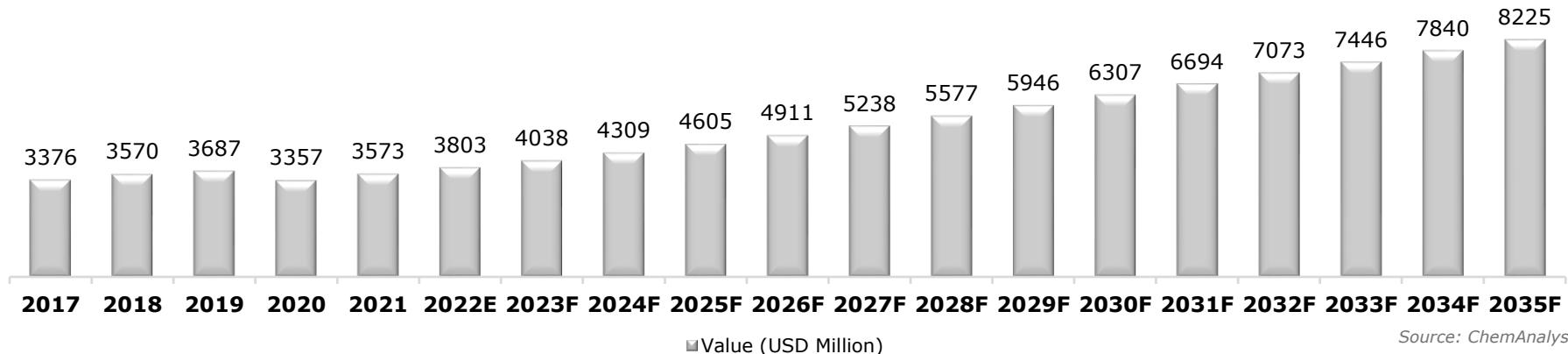


Figure 1: Global Water Soluble Fertilizer Market Size, By Value (USD Million), 2017-2035F

**CAGR 2017-2021
By Value: 1.42%**

**CAGR 2022E-2030F
By Value: 6.53%**

**CAGR 2031F-2035F
By Value: 5.28%**



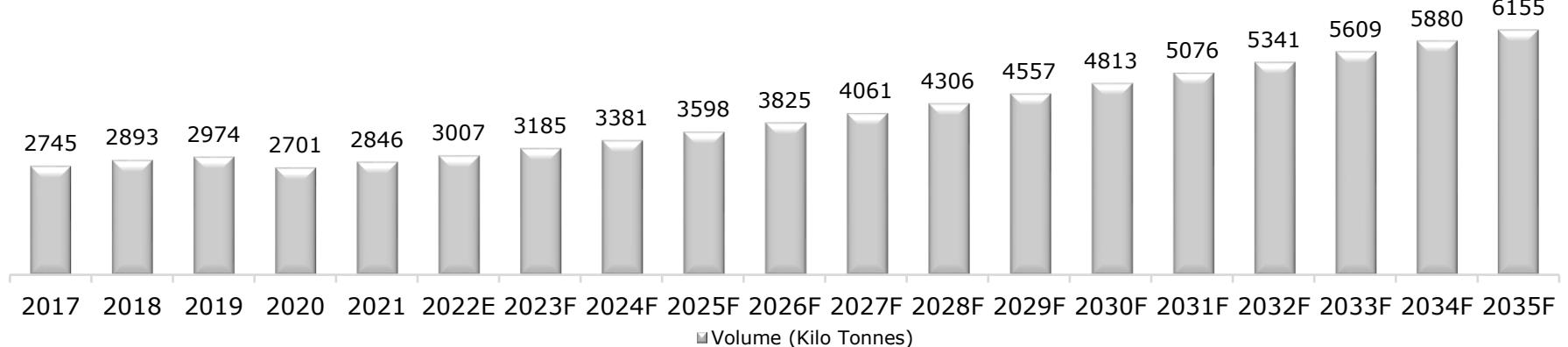
Source: ChemAnalyst

Figure 2: Global Water Soluble Fertilizer Market Size, By Volume (Kilo Tonnes), 2017-2035F

**CAGR 2016-2020
By Value: 0.91%**

**CAGR 2016-2020
By Value: 6.05%**

**CAGR 2021E-2026F
By Value: 4.93%**



Source: ChemAnalyst

Global Water-Soluble Fertilizer Market Share, By Type



**Table 1: Global Water-Soluble Fertilizer Market Share, By Type, By Value (USD Million) & By Volume (Kilotonnes),
2017-2035F**

By Type		2017	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2035F
Calcium Nitrate (15.5-0-0-19)	Value	1035.06	1104.54	1182.20	1251.97	1339.58	1429.19	1522.75	1622.57	1726.79	1840.14	1950.01	2531.75
	Volume	781.83	805.64	854.18	898.30	949.64	1008.06	1065.98	1128.63	1191.47	1253.44	1315.20	1657.50
Potassium Nitrate (13-0-45)	Value	677.07	682.83	728.74	776.95	831.31	891.13	953.82	1021.51	1091.13	1164.94	1238.17	1619.75
	Volume	585.87	586.34	620.41	657.27	696.93	742.63	789.53	839.56	890.23	940.62	992.03	1264.53
Potassium Sulphate (0-0-50)	Value	403.84	377.30	395.52	417.51	440.83	466.01	491.58	519.08	546.62	584.46	621.23	820.12
	Volume	352.43	337.23	353.10	372.04	391.63	414.00	436.64	460.62	484.67	512.81	541.10	693.96
Mono Ammonium Phosphate (12-61-0)	Value	942.32	1020.31	1077.31	1139.37	1208.60	1288.78	1369.06	1454.45	1542.13	1639.74	1735.52	2249.52
	Volume	696.26	726.49	762.74	801.94	843.17	894.85	944.81	998.46	1051.81	1105.66	1160.11	1462.76
Mono Potassium Phosphate (0-52-34)	Value	318.05	387.58	419.02	451.73	488.51	529.42	573.48	620.02	670.80	716.30	761.63	1003.96
	Volume	328.60	390.04	416.67	455.87	499.95	538.87	588.15	633.85	687.42	744.52	804.25	1076.38
Total	Value	3376.35	3572.55	3802.78	4037.53	4308.83	4604.53	4910.68	5237.63	5577.47	5945.58	6306.56	8225.09
	Volume	2745.00	2845.75	3007.10	3185.43	3381.33	3598.41	3825.11	4061.12	4305.60	4557.05	4812.70	6155.13

Source: ChemAnalyst

Global Water Soluble Fertilizer Market Share, By End Use



Table 2: Global Water Soluble Fertilizer Market Share, By End Use, By Value (USD Million) & By Volume (Kilotonnes), 2017-2035F

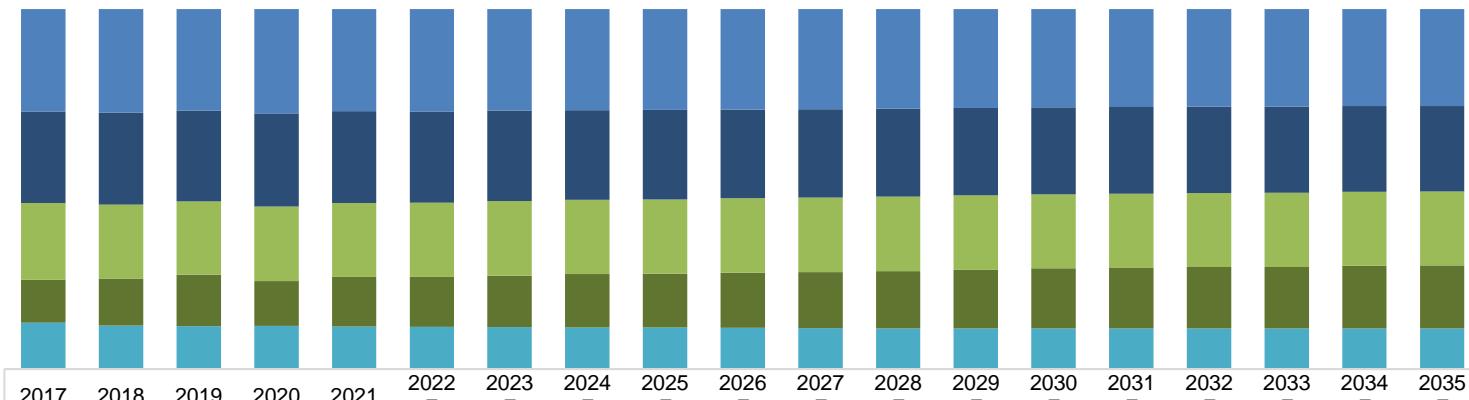
By Type		2017	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2035F	
Gardening & Horticulture		Value	1362.46	1445.48	1539.38	1636.75	1748.84	1869.92	1995.71	2130.23	2271.35	2422.27	2572.21	3362.13
		Volume	1181.40	1227.84	1297.86	1376.38	1461.31	1555.95	1654.55	1756.11	1864.51	1972.72	2085.84	2672.07
Foliage Crops		Value	774.79	820.41	874.05	928.77	992.55	1061.70	1131.76	1208.62	1286.54	1371.04	1452.54	1887.45
		Volume	724.61	753.02	796.47	844.41	896.03	954.57	1014.54	1077.81	1143.17	1211.30	1279.83	1641.52
Fruits & Vegetable		Value	910.96	965.42	1029.17	1093.56	1166.59	1247.96	1330.51	1420.16	1512.87	1614.42	1713.36	2236.99
		Volume	681.33	707.55	748.87	793.97	842.44	897.55	953.76	1013.44	1074.88	1138.95	1203.56	1541.06
Field & Cash Crops		Value	328.14	341.24	360.18	378.45	400.85	424.95	452.70	478.62	506.72	537.85	568.44	738.53
		Volume	157.66	157.35	163.90	170.67	181.55	190.34	202.25	213.77	223.05	234.07	243.47	300.47
Total		Value	3376.35	3572.55	3802.78	4037.53	4308.83	4604.53	4910.68	5237.63	5577.47	5945.58	6306.56	8225.09
		Volume	2745.00	2845.75	3007.10	3185.43	3381.33	3598.41	3825.11	4061.12	4305.60	4557.05	4812.70	6155.13

Source: ChemAnalyst

Global Water Soluble Fertilizer Market Share, By Type



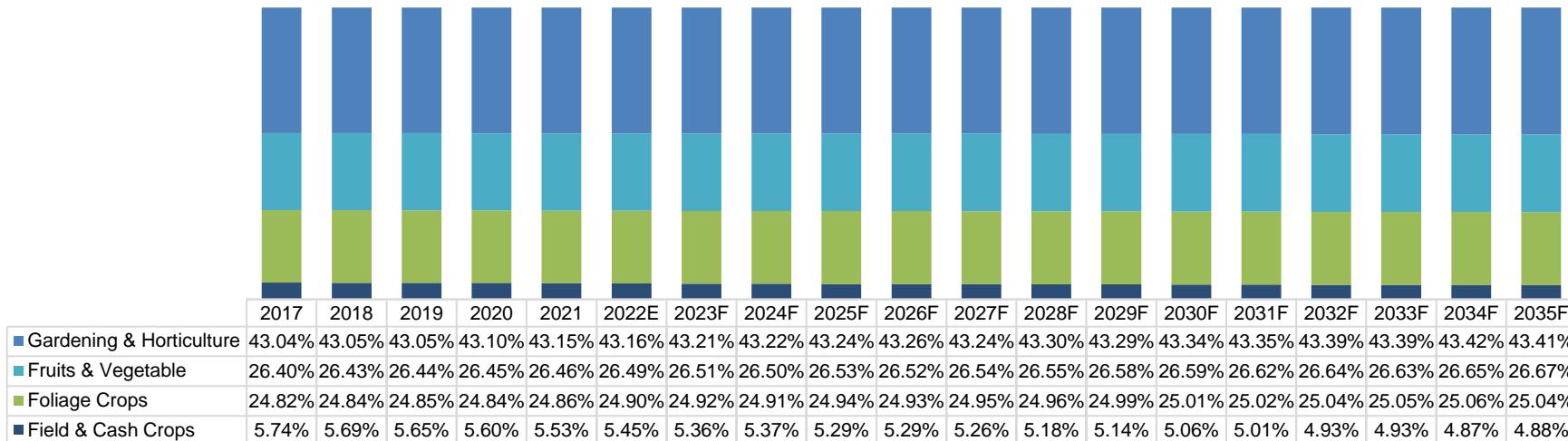
Figure 3: Global Water Soluble Fertilizer Market Share, By Type, By Volume, 2017-2035F



	2017	2018	2019	2020	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	2033F	2034F	2035F
■ Calcium Nitrate (15.5-0-0-19)	28.48%	28.81%	28.20%	28.94%	28.31%	28.41%	28.20%	28.08%	28.01%	27.87%	27.79%	27.67%	27.51%	27.33%	27.24%	27.13%	27.10%	26.94%	26.93%
■ Mono Ammonium Phosphate (12-61-0)	25.36%	25.55%	25.20%	25.92%	25.53%	25.36%	25.18%	24.94%	24.87%	24.70%	24.59%	24.43%	24.26%	24.11%	24.03%	23.95%	23.92%	23.78%	23.76%
■ Potassium Nitrate (13-0-45)	21.34%	20.53%	20.40%	20.72%	20.60%	20.63%	20.63%	20.61%	20.64%	20.64%	20.67%	20.68%	20.64%	20.61%	20.61%	20.58%	20.60%	20.56%	20.54%
■ Mono Potassium Phosphate (0- 52-34)	11.97%	13.01%	14.27%	12.42%	13.71%	13.86%	14.31%	14.79%	14.98%	15.38%	15.61%	15.97%	16.34%	16.71%	16.88%	17.09%	17.12%	17.47%	17.49%
■ Potassium Sulphate (0-0-50)	12.84%	12.11%	11.94%	12.01%	11.85%	11.74%	11.68%	11.58%	11.50%	11.42%	11.34%	11.26%	11.25%	11.24%	11.24%	11.26%	11.26%	11.27%	

Source: ChemAnalyst

Figure 4: Global Water Soluble Fertilizer Market Share, By End Use, By Volume, 2017-2035F



Source: ChemAnalyst

Global Water Soluble Fertilizer Market Share, By Region

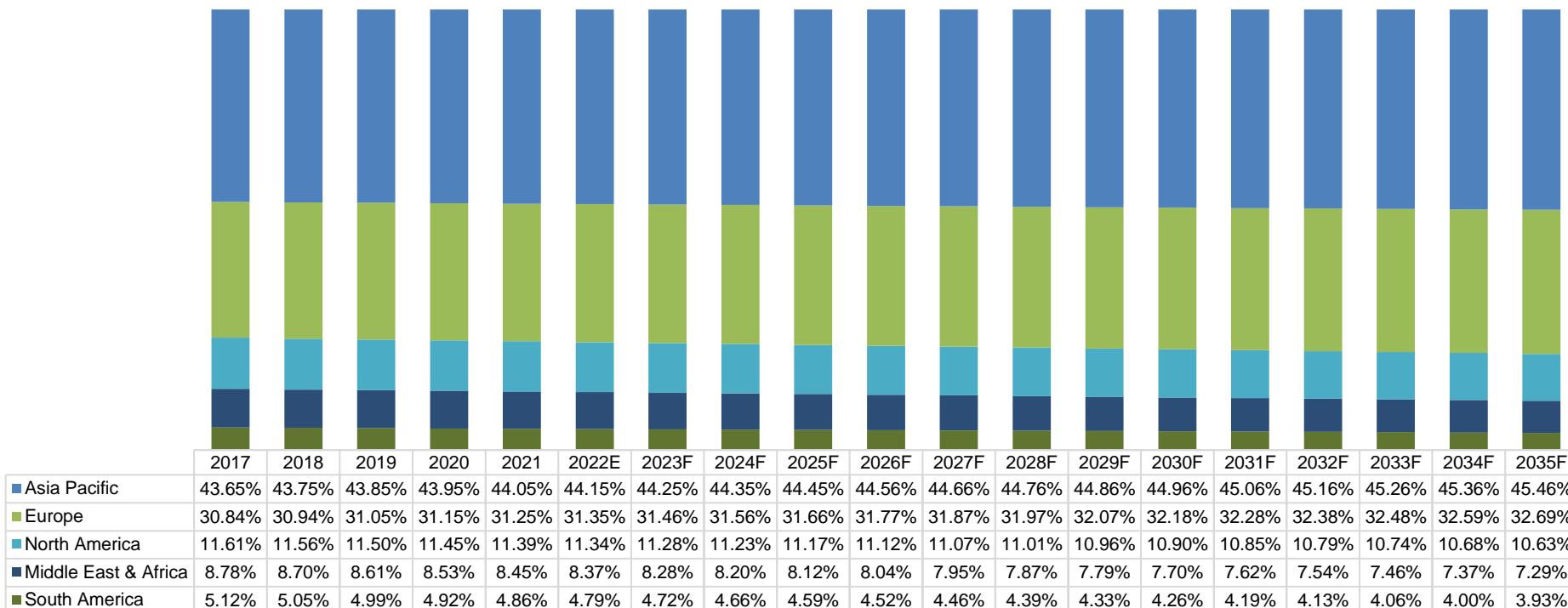


Table 3: Global Water Soluble Fertilizer Market Share, By Region, By Value (USD Million) & By Volume (Kilotonnes), 2017-2035F

By Type		2017	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2035F
Asia Pacific	Value	1403.89	1499.84	1600.32	1703.16	1821.94	1951.60	2086.30	2230.47	2380.81	2543.91	2704.71	3568.87
	Volume	1198.19	1253.62	1327.72	1409.66	1499.75	1599.65	1704.28	1813.52	1927.02	2044.14	2163.65	2798.12
Europe	Value	1145.60	1226.85	1309.83	1394.83	1492.98	1600.18	1711.62	1830.96	1955.49	2090.66	2224.08	2942.94
	Volume	846.56	889.33	942.84	1002.03	1067.13	1139.34	1215.05	1294.19	1376.52	1461.60	1548.54	2012.11
North America	Value	460.87	479.87	508.73	537.93	571.73	608.46	646.25	686.42	727.92	772.73	816.21	1042.12
	Volume	318.69	324.19	340.94	359.42	379.69	402.10	425.35	449.39	474.09	499.30	524.69	654.29
Middle East & Africa	Value	228.58	230.03	241.71	253.29	266.74	281.23	295.87	311.23	326.81	343.46	359.09	434.28
	Volume	241.01	240.43	251.58	263.86	277.29	292.11	307.35	322.95	338.83	354.84	370.76	448.71
South America	Value	137.42	135.96	142.20	148.31	155.43	163.05	170.65	178.54	186.44	194.82	202.48	236.88
	Volume	140.54	138.18	144.02	150.46	157.48	165.21	173.09	181.08	189.14	197.17	205.05	241.90
Total	Value	3376.35	3572.55	3802.78	4037.53	4308.83	4604.53	4910.68	5237.63	5577.47	5945.58	6306.56	8225.09
	Volume	2745.00	2845.75	3007.10	3185.43	3381.33	3598.41	3825.11	4061.12	4305.60	4557.05	4812.70	6155.13

Source: ChemAnalyst

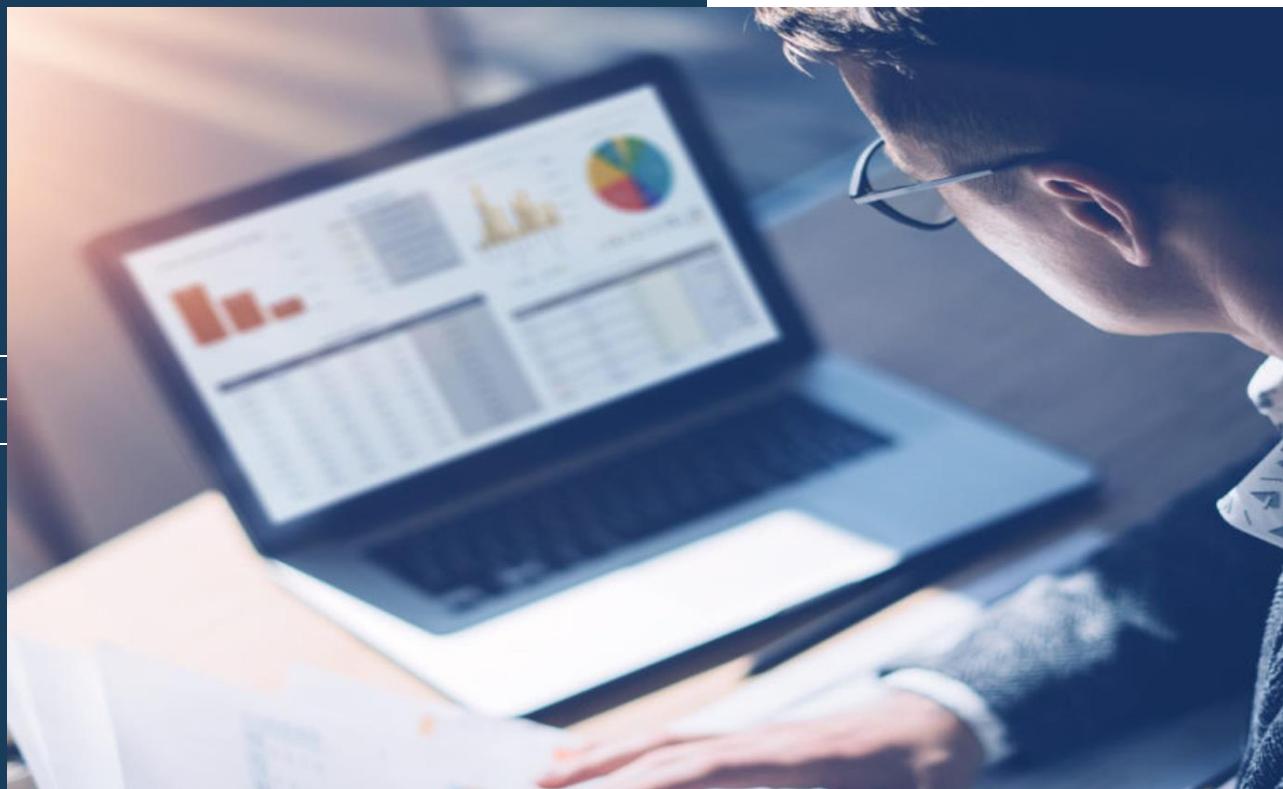
Figure 5: Global Water Soluble Fertilizer Market Share, By Region, By Volume, 2017-2035F



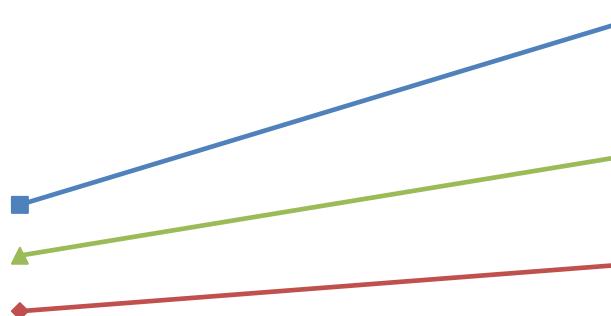
Source: ChemAnalyst

- Asia Pacific holds the largest market share for water soluble fertilizer and will be the fastest growing region during the forecast period. This is due to rising demand from dense populations such as China, India, Pakistan and Vietnam. Moreover, degrading arable land and limited water resources in Asian countries are generating the demand for water soluble fertilizers.
- Subsidies from governments and huge investment from various multinational agrochemical companies to the fertilizer industry will propel product penetration in the region.

Raw Material Pricing Overview, 2021-2022



India Water Soluble Fertilizer Raw Material Prices (INR/Kg), FY 2021 – FY 2022

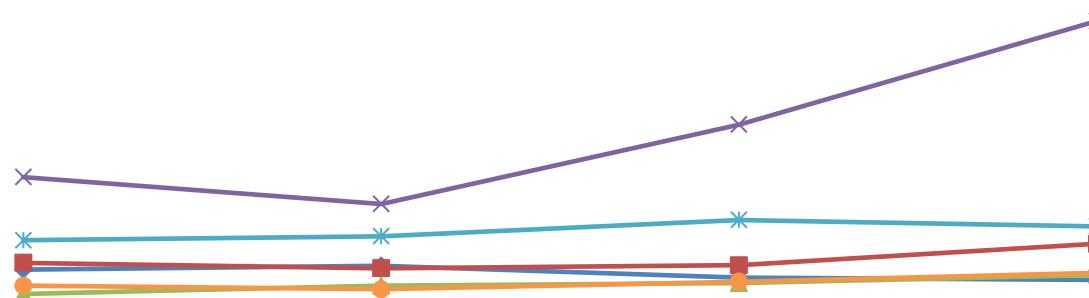


	FY 2021	FY 2022
Nitric Acid 68% Ex-Mumbai	21.80	33.09
Phosphoric Acid Technical Grade 75% Ex-Kandla	47.34	91.59
Anhydrous Ammonia Ex-Depot Mumbai	35.13	59.21

Source: ChemAnalyst

- Nitric Acid prices in the Indian market have been steadily rising throughout the first quarter of 2022 because of the scarcity of supplies in the region. Manufacturers were heard grappling with various supply-chain difficulties and increasing energy, raw material, packaging, and transportation costs.
- The persistent fluctuations in the offers of Phosphoric Acid was observed. The restriction imposed by the Chinese authorities on Phosphate based fertilizers and makeshift in the market dynamics of Phosphoric Acid, as an important commodity in the EV sector.
- Due to a sharp increase in raw material Nitrogen and Hydrogen costs, as well as significant demand from the Indian market, the price of Ammonia skyrocketed in Q1 of 2022. The supply remained insufficient to cover the country's total demands, despite continued strong demand from the fertilizer industries.

India WSF Raw-Material Pricing Analysis (INR/Tonne) FY 2022E (2019 - 2022)



	2019	2020	2021	2022
Potassium Chloride	18949	20479	15890	14990
Nitric Acid	21582	19483	20652	28913
Sulphuric Acid	9550	12750	13730	16890
Phosphoric Acid	54600	44250	74850	114750
Anhydrous Ammonia	30250	31810	38130	35610
Lime	12750	11400	14325	17775

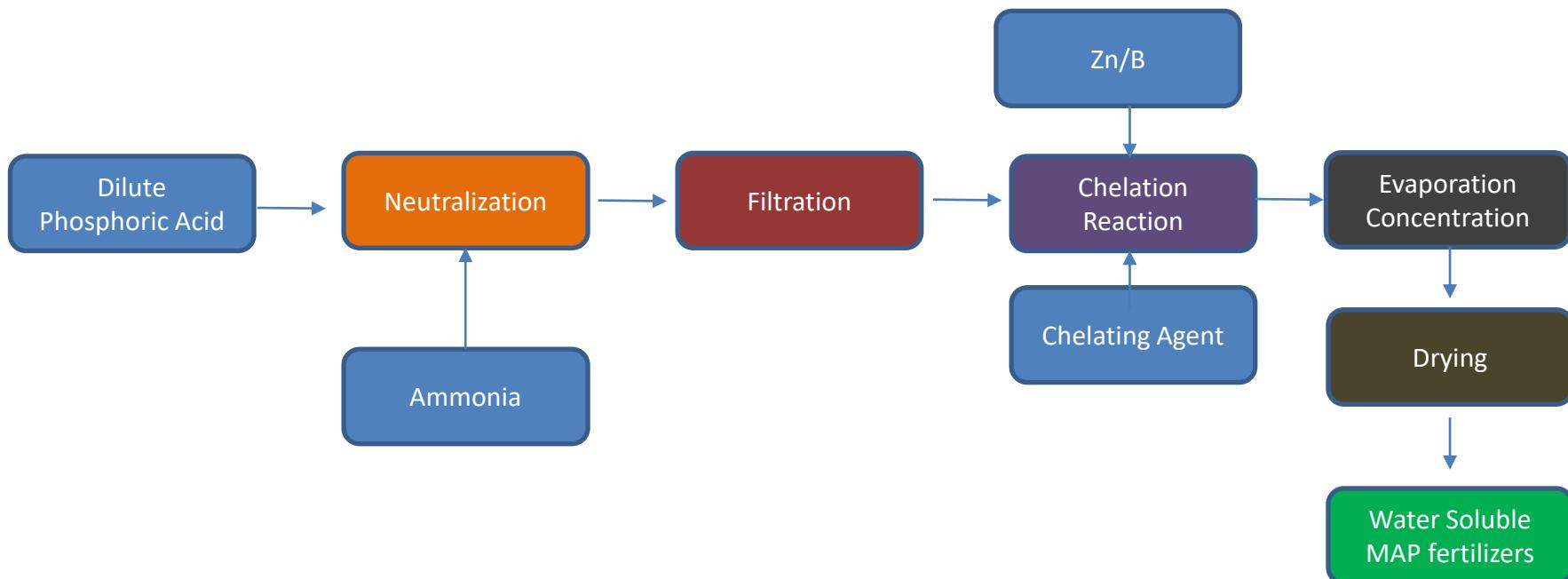
Source: ChemAnalyst

- The Indian market observed persistent fluctuations in the offers of Phosphoric Acid. The restriction imposed by the Chinese authorities on Phosphate based fertilizers severely impacted the prices in India.
- Due to a global scarcity of natural gas resources, coal and natural gas prices have continued to grow impacting the prices of anhydrous ammonia.
- The sentiments for Sulphuric Acid in India observed a significant shift in the market dynamics as Russia invaded Ukraine, prices of Crude Oil market skyrocketed.
- Manufacturers of nitric acid were heard grappling with various supply-chain difficulties and increasing energy, raw material, packaging, and transportation costs.

Production Technology Overview

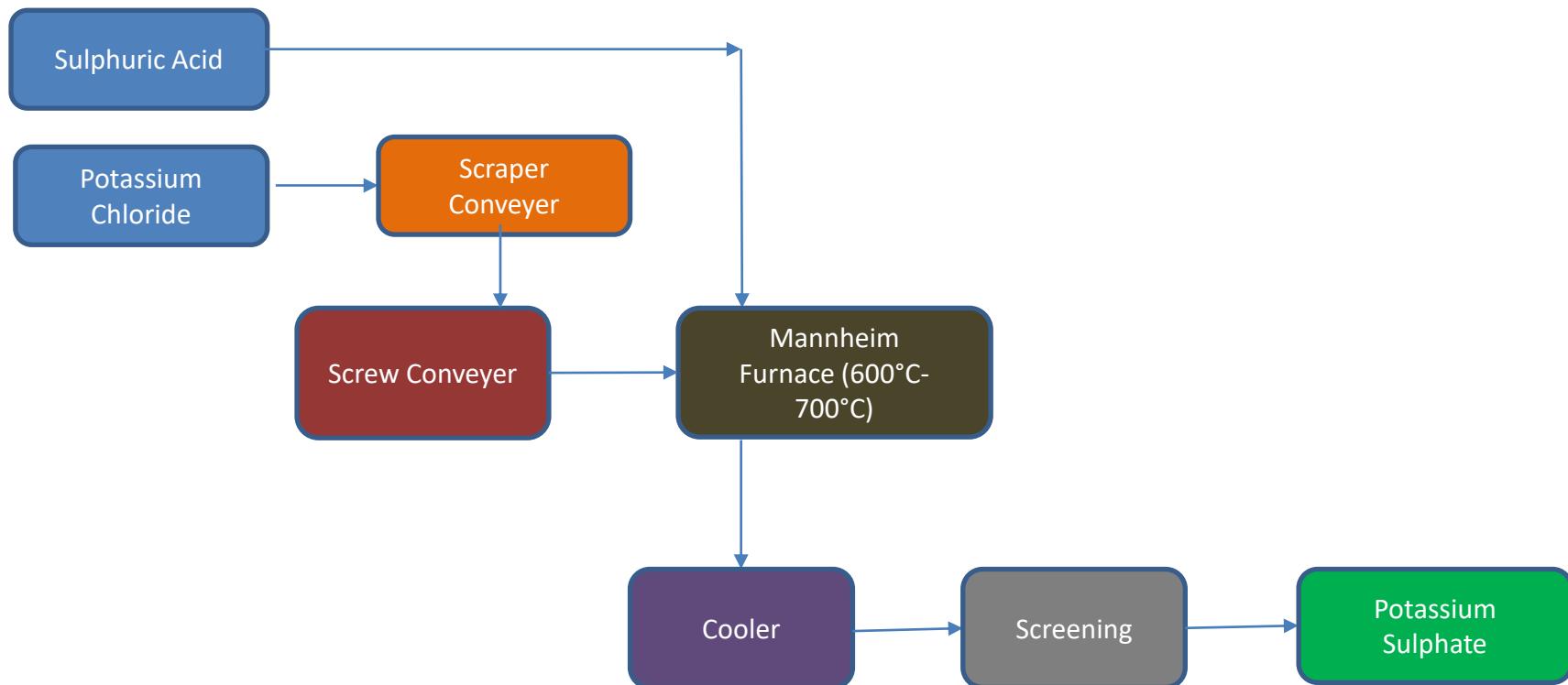


Overview of Production Technologies: Water soluble Mono Ammonium Phosphate (12-61-0)



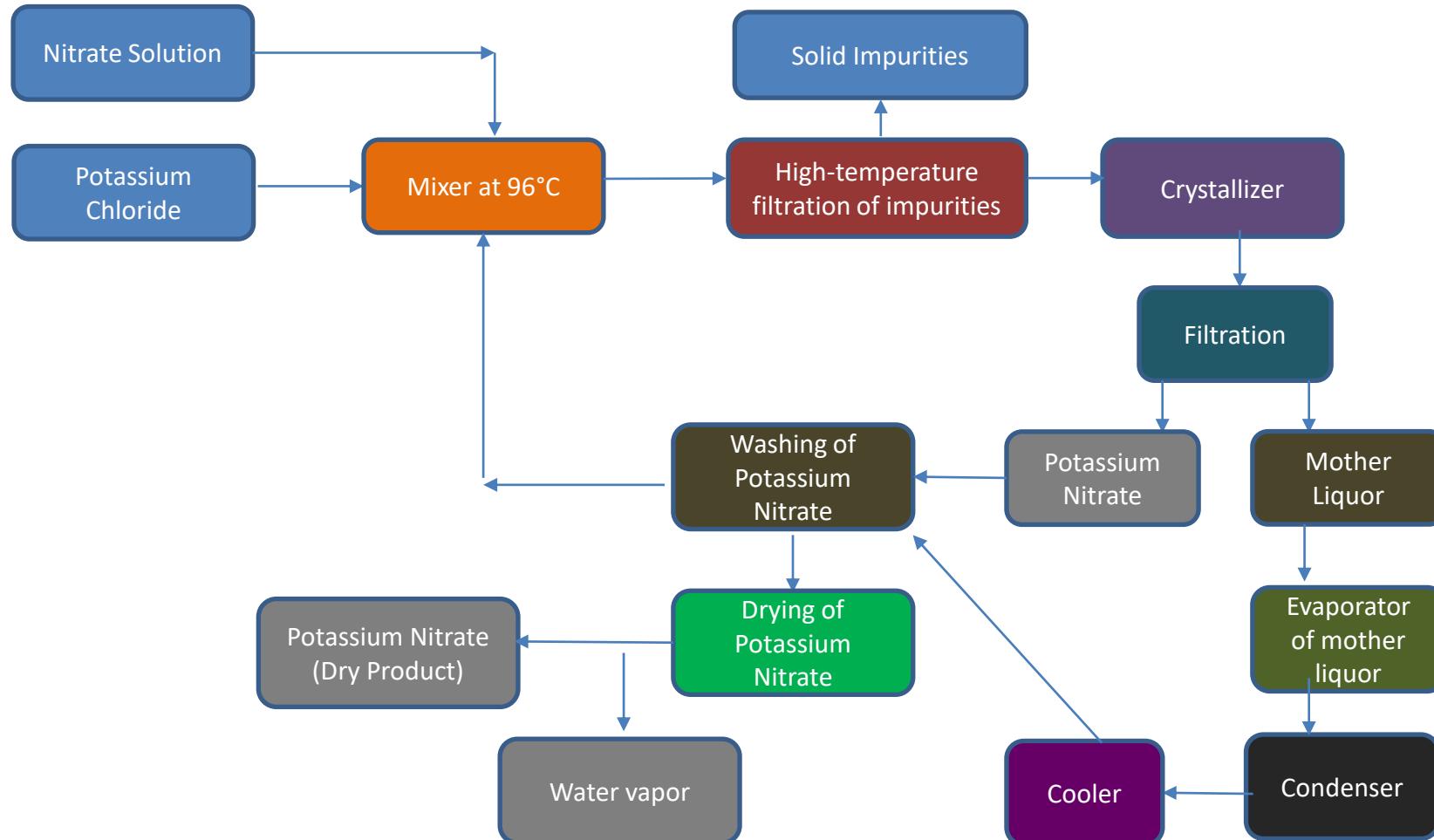
- The process for manufacturing MAP involves one-to-one ratio of ammonia (NH_3) and phosphoric acid (H_3PO_4) input feed which is then reacted and the resulting slurry of MAP is solidified in a granulator.
- The second method introduces the two starting materials in a pipe-cross reactor, where the reaction generates heat to evaporate water and solidify MAP. Other methods exist as well.
- An advantage of manufactured MAP is that lower-quality H_3PO_4 can be used compared with other P fertilizers often requiring a more pure grade of acid. The phosphorus pentoxide (P_2O_5) equivalent content of MAP varies from 48 to 61 percent, depending on the amount of impurity in the acid. The most common fertilizer composition is 12-61-0.
- Although there is an additional step with production of phosphoric acid in which Sulfuric acid is used as a key first step in the production of both MAP and DAP, after which it is mixed with phosphate rock to produce phosphoric acid. For which companies like Elessent offer technologies such as MECS.

Overview of Production Technologies: Water Soluble Potassium Sulphate (0-0-50)



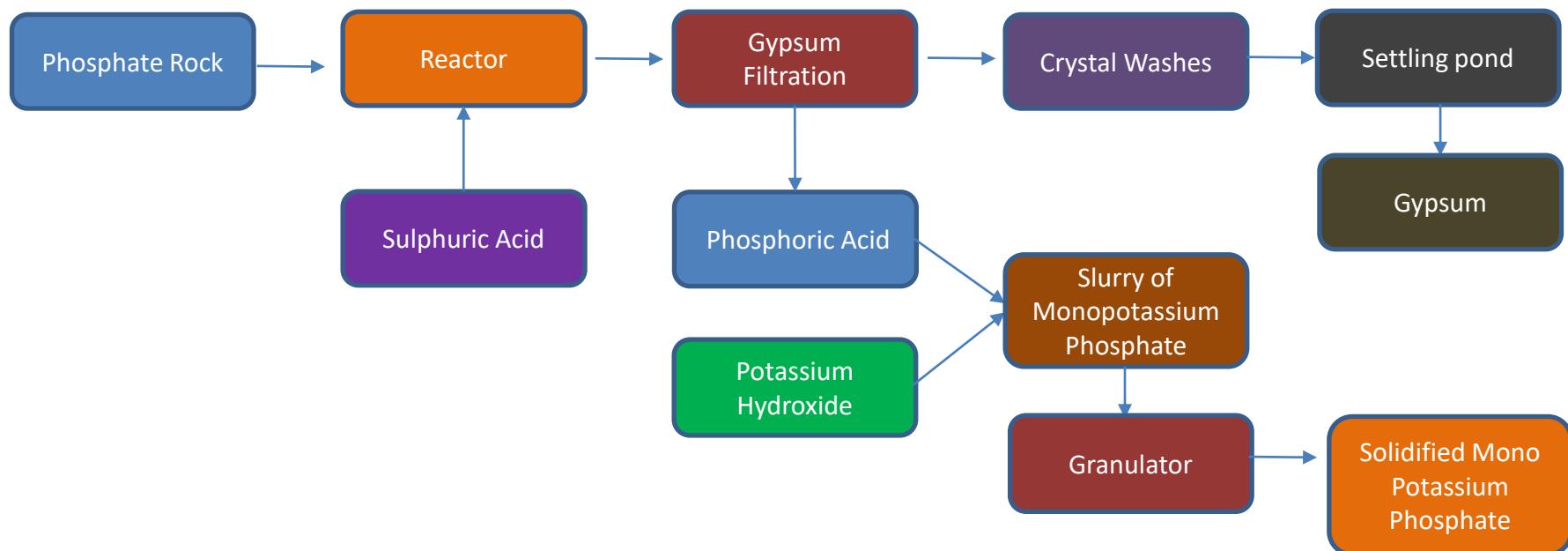
- To alleviate plant deficits, potassium (K) fertilisers are often utilised. Farmers must supplement this crucial plant nutrient when soils are unable to provide the amount of K required by crops. The most often utilised source, potassium chloride (KCl), is also known as muriate of potash, or MOP (muriate is the old name for any chloride-containing salt).
- Fine MOP is a key component in the Mannheim process, which involves potassium chloride reacting with sulphuric acid at 600-700°C in a muffle furnace to create potassium sulphate (SOP). SOP is mostly used in agriculture as a chloride-free fertiliser in powder or granular form.
- White Fine MOP produced by Uralkali interacts effectively and fully with sulphuric acid because to its particle size, and its low impurity concentration ensures the generation of high purity SOP.

Overview of Production Technologies: Water Soluble Potassium Nitrate (13-0-45)



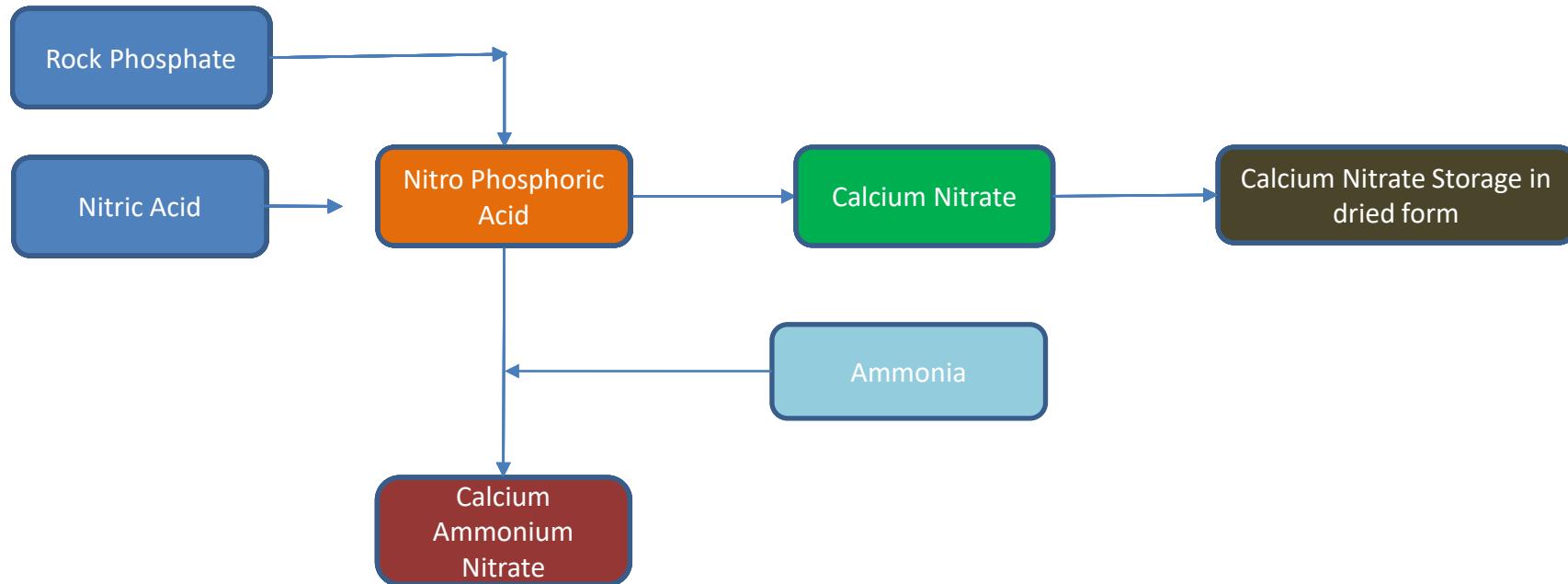
- Potassium nitrate fertiliser (also known as nitrate of potash or NOP) is commonly made by reacting potassium chloride (KCl) with a nitrate source. Nitrate can be obtained from sodium nitrate, nitric acid, or ammonium nitrate, depending on the goals and resources available. Regardless of the manufacturing method, the KNO₃ produced is similar. Potassium nitrate is often offered as a crystalline, water-soluble material for dissolving and applying with water, or as a prilled form for soil application. Saltpeter is the traditional name for this substance.

Overview of Production Technologies: Water soluble Mono Potassium Phosphate (0-52-34)



- Phosphoric Acid is the most important raw material for all phosphates. Phosphate rock is used to make phosphoric acid. Phosphate rock and regenerated phosphoric acid from the process are fed into a series of reactors.
- The phosphoric acid-fluoroapatite slurry is combined with sulphuric acid, which is used as a leaching agent in the reactor series. The process stream is washed with evaporator condensate and forced through a filter when the reaction series is completed. The filter cake is mostly made of gypsum ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$).
- A succession of evaporators concentrates the phosphoric acid to 75-100 percent and then cools it.
- Mono Potassium Phosphate is made by combining potassium hydroxide (KOH) and phosphoric acid in a process (H_3PO_4). The MKP slurry that results is solidified in a granulator to form solidified mono potassium phosphate.

Overview of Production Technologies: Water Soluble Calcium Nitrate (15.5-0-0-19)



- The integrated process starts with the dissolution of the rock phosphate in nitric acid following the reaction.



- Depending on the rock phosphate, different amounts of volatile chemicals such as carbon dioxide (CO₂), nitrous gases (NO_X), and hydrogen fluoride (HF) may be released. There are too many calcium ions in the mother liquor to ensure the synthesis of plant-available P₂O₅. As a result, the solution is cooled so that calcium nitrate tetrahydrate (CNTH) crystallises after the process.



- Filtration can remove the phosphoric acid solution, leftover calcium nitrate, and nitric acid, known as nitrophosphoric acid, from the CNTH crystals. The nitrophosphoric acid is subsequently neutralised with ammonia, mixed with potassium/magnesium salts, sulphate, and/or micronutrients, and transformed into solid compound fertilisers including nitrate in a rotary granulation drum, fluidized bed, prilling tower, or pug-mill.

List of Technology Licensors and Project Credentials

Technology Licensing Company	Trademark/Patented Technology	Project Credentials
Veolia Environment S.A.	Veolia's HPD® - Evaporation and Crystallization unit	Alkimia Group, tunisia
		Intecs Industrial
		Jacobs Engineering Group Inc.
KBR Inc.	Draft tube Crystallization	RCF
	Flash cooling Crystallization	Matix Fertilizers and Chemicals
	Surface cooling Crystallization	Hindustan Urvarak & Rasayan Limited
	Evaporative Fc Crystallization	CNOOC Chemical Ltd., China
GEA Group	Vacuum Cooling Crystallization & Dryer	Valagro, Eurochem Group
Thyssenkrupp Industrial Solutions	Fluid Bed Granulation, Urea Melt, CO₂ Stripping	Cronus Fertilizers, Gujarat State Fertilizer Corporation
INCRO, S.A.	INCRO's Pre-Neutralizer slurry process	The Fertilisers And Chemicals Travancore Limited
	INCRO's Pipe Reactor slurry Process	Deepak Fertilisers & Petrochemicals Corporation Ltd
	INCRO's Ammonium nitrate solution process	Coromandel Fertilisers Ltd.
	INCRO's Nitrates granulation process	IFFCO

- **Digitization & Automation:** The automated blending system is made up of sensors, an electrical conductivity (EC) metre, and a programme logic controller (PLC). The term PLC refers to a programmable logic controller. It is a control system that analyses the state of input devices on a continuous basis and makes decisions based on programmes to manage the output device quality. Automation provides increased production speed, lower costs, and greater resource utilisation. This research makes use of an electrical conductivity (EC) metre. Automation is being used by businesses to manufacture more goods in a single blender and to enable for exact sequencing control to produce more product swiftly and safely without having to stop production.
- **Crystallization Technologies:** A crystallizer unit is commonly used in the crystallisation process, which is followed by solid/liquid separation and drying/cooling processes. Unlike other production methods like granulation, prilling, mixing, or atomization, crystallisation is a highly selective process and a potent separation tool. It serves two important functions:
 - Production of crystals with a controlled size and shape
 - Purification to reach very high purity levels – usually 99 weight percent or higher – and thoroughly remove insoluble impurities.
- This level of purity can only be achieved through crystallisation. By removing a purge stream from the crystallizer, impurities are diluted. This stops them from co-precipitating with the fertiliser crystals that are required. To further improve and purify the product, further process techniques might be used with the initial crystallisation procedure. For example, a second crystallisation stage reduces waste purge and increases manufacturing yields. It also allows for the use of lower-quality raw materials while still producing higher-value fertiliser products.

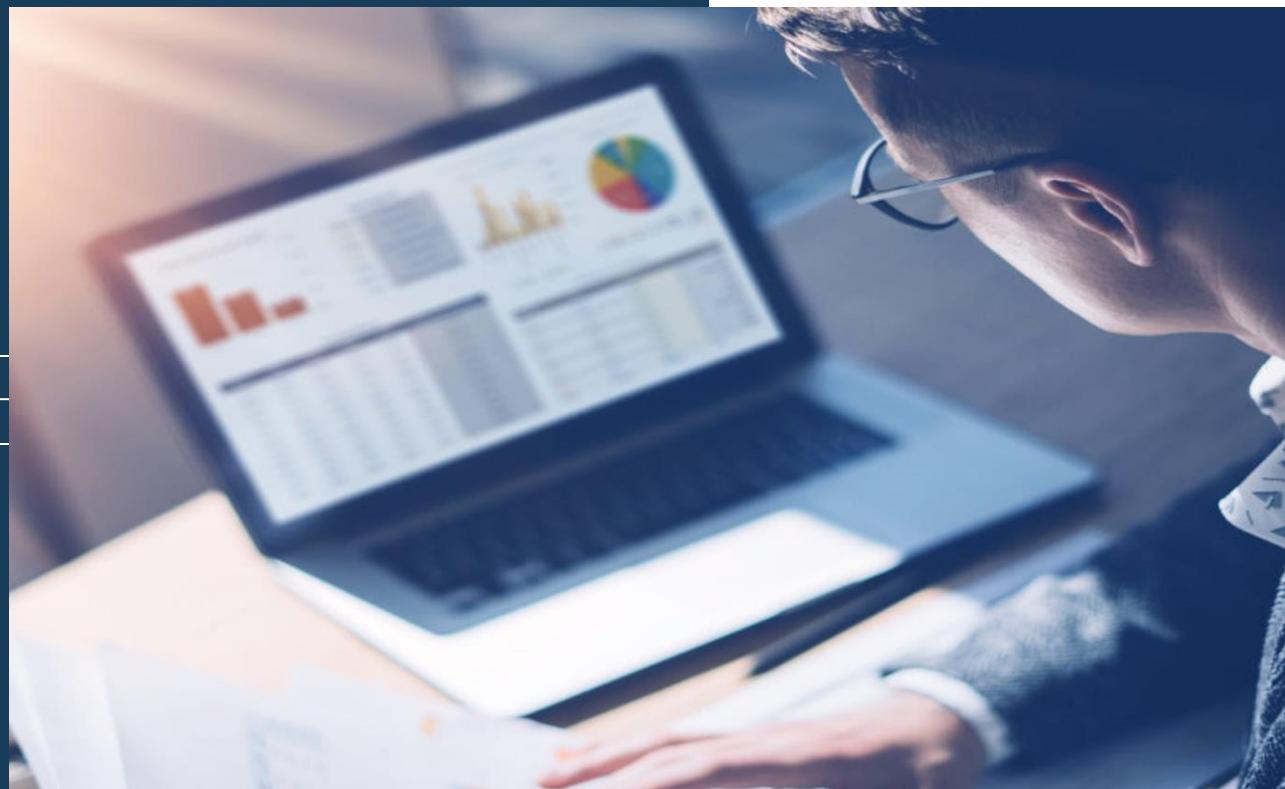
Strategic alliances to provide raw feedstock for production WSF:

- KBR Technology Ammonia 6000 Complete, single-stream ammonia plant solution based on our proprietary PURIFIER™ technology that expands capacity to 6000 MTPD while using proven and reliable designs, reducing CAPEX, OPEX, and emissions of CO₂ and NOx.
- Kellogg Brown & Root (KBR) and Johnson Matthey (JM) are global leaders in ammonia and methanol technology respectively and have formed an alliance to offer a co-production flowsheet incorporating these leading technologies.
- The co-production scheme is based on the JM SMR methanol technology and KBR Purifier™ ammonia technology.
- High mono-pressure and proprietary dual-pressure technologies developed to be energy- and cost-efficient while ensuring high ammonia conversion for facilities with a wide range of production targets.

Preference of Blue green Ammonia as feedstock

- **Blue Ammonia:** The Conventional ammonia process is the largest carbon dioxide emitting chemical industry process. KBR's Blue Ammonia technology is based on the PurifierPlus™ process that uses natural gas to produce ammonia with the capture and sequestration of CO₂.
- **Green Ammonia:** Ammonia is a pungent gas that is widely used to make agricultural fertilisers. Green ammonia production is where the process of making ammonia is 100% renewable and carbon-free.

Key Success and Risk Factor Assessment

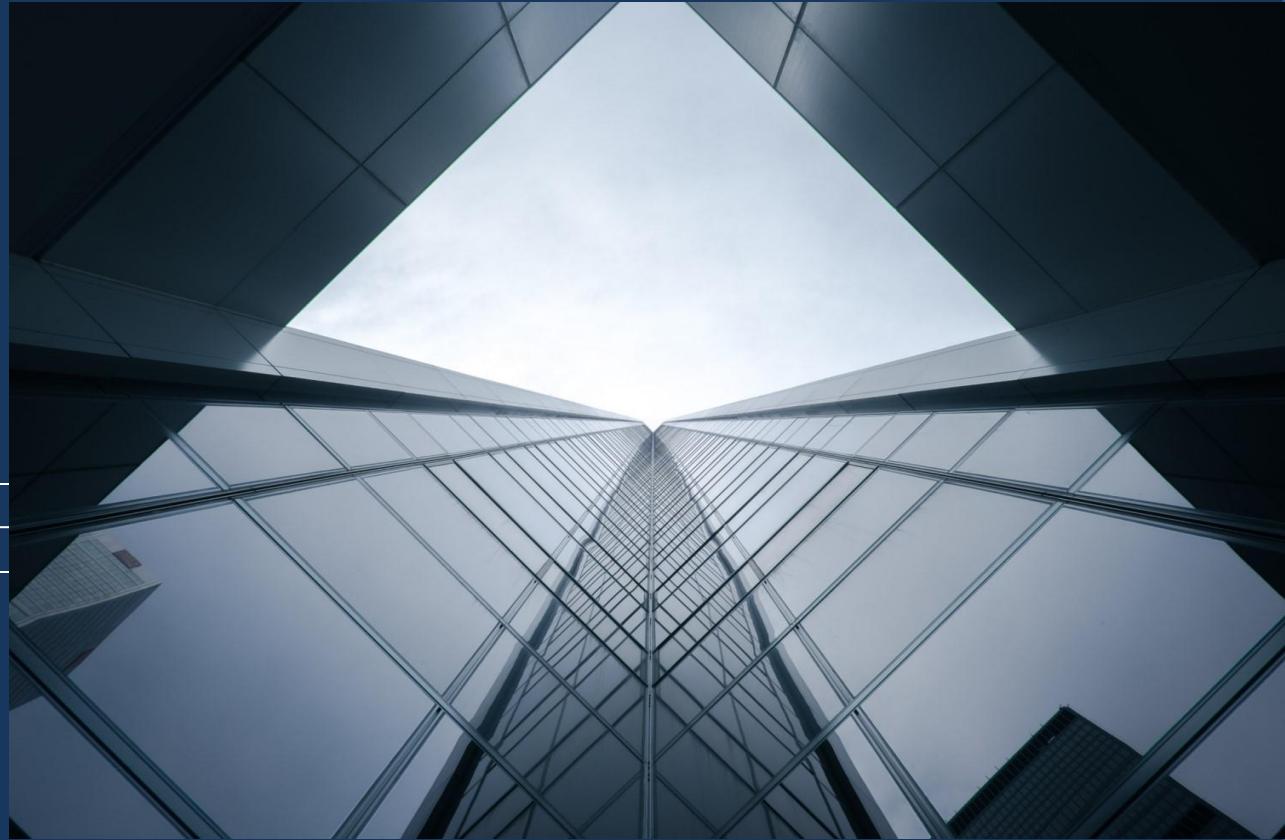


Marketing Strategy to be employed for entry and product positioning

- **Improving Distributor Network:** In order to increase visibility and reach of their products, manufacturers need to significantly focus on resources to develop strong dealer and distributor network. These dealers and distributors are typically multi-branded and are located across metros, cities, towns as well as rural areas.
- Sales in Tier 2, Tier 3, Tier 4 cities and rural market are highly dependent on relationship of dealers and distributors with further value chain. In these geographies, dealers and distributors have great abilities to influence customer purchase decisions. These dealers are well integrated with great marketability to improve penetration of brand.
- The organized players in India have developed a significant market position with the development of an extensive distribution network through long term relationship with dealers and distributors. Sales incentives, better margins, coupon discounts, payment terms are some of the strategies helping producers to leverage long term relationship with distribution network. Therefore, new entrants or existing companies in resin market are highly recommended to focus on strengthening distributor network to make strong foothold in the market.
- **Importing Raw Materials:** Importing raw materials from countries like China and Europe can benefit domestic manufacturers as raw materials prices are high which serves as a feedstock to produce water-soluble fertilizers. Due to lower profit margin companies can import raw materials which will allow domestic manufacturers ear good profit margin and decrease the dependency of water-soluble fertilizers from other countries.

- **Increasing demand of Nano Urea:** Increasing production of Nano-Urea is one of the major threats as it is expected to replace the usage of urea granules as well as impact the growth of water-soluble fertilizers as one of the most widely used fertilisers in farmlands across the world. Nano urea liquid is expected to potentially replace 13.7 million tonnes of conventional urea usage by 2023. Conventional granular urea is one of the most important nitrogenous fertilisers in the country, with a high nitrogen content of 46 per cent, and is available at one of the lowest market prices.
- **High Raw Material Price:** Raw material prices are extremely high in the country which are used as a feedstock to produce water-soluble fertilizer such as nitric acid, phosphoric acid. High raw material prices is one of the major factor hindering the production volume of water-soluble fertilizers in India. For Instance, Calcium Nitrate is produced in both forms in India, crystal as well as granular, Out of which granular is majorly used as a fertilizer but lack of quality due to higher prices of raw material and lack of infrastructure and climatic conditions are one of the reasons affecting the production of water-soluble fertilizers in India.

Market Dynamics



1

Reducing Nutrient Deficiency and Increasing Yield

2

High Efficiency and Ease of Use of Water Soluble Fertilizers

- Every second, thousands of tonnes of topsoil are lost, and arable land diminishes by thousands of hectares. A billion hectares of land have been rendered useless for agriculture due to erosion itself.
- In an industrialised society, environmental conservation is critical. Fertilizer use in agriculture can be extremely beneficial to food production,. As a result, there has been a growth in the use of water soluble fertilizers that have no or low impact on the environment and helps to reduce the nutrient deficiency.
- Water soluble fertilizers (WSF) ensure that the precise amount of nutrients is supplied according to crop's requirements, resulting in better yield productivity in less area.
- Fertigation is one of the applications of WSF. Under fertigation, fertilizers are incorporated within the irrigation water, ensuring nutrients are distributed evenly in the soil. This method increases the efficiency of fertilizers, which eventually leads to 25-50% higher yields.
- Water saving and yield under drip-fertigation systems for some of the crops:
 - Banana production – About 35% of the water can be saved and yield can be increased up to 37 tons per hectare (t/ha) as compared to 26 t/ha by conventional system.
 - Sugarcane – About 29% of the water can be saved and yield can be increased up to 207t/ha as compared to 120 t/ha by conventional system.

3

Growing Emphasis on Micro-Irrigation Scheme

- WSF is usually used in micro-irrigation such as drip and sprinkler system. The government of India is encouraging farmers to adopt micro-irrigation by offering various schemes and incentives. The government has undertaken following initiatives for promoting micro-irrigation:
- The government has proposed to Government of India created the RIDF in NABARD in 1995-96, with an initial corpus of Rs.2,000 crore. With the allocation of Rs.40,490.95 crore for 2021-22 under RIDF XXVII, the cumulative allocation has reached Rs.418410.52 crore, including Rs.18,500 crore under Bharat Nirman.
- The data provided by the Ministry of Agriculture and Farmers Welfare to the Lok Sabha as of 3rd February 2021 shows that the net irrigated area in the country is 68,649 thousand ha. The agriculture land covered under micro-irrigation is 12,908.44 thousand ha in which drip irrigation is 6,112.05 thousand ha and sprinkler irrigation is 6,796.39 thousand ha. This means that out of total irrigated land in the country only 19 per cent is under micro-irrigation.
- Andhra Pradesh, Karnataka, Gujarat, Maharashtra and Tamil Nadu command a share of over 75% of the coverage expansion. In order to expedite micro-irrigation coverage, the government is also planning to take help of private companies under Public Private Partnership (PPP) model.

4

Rising demand of Hydroponics and Drip irrigation

- WSFs (Water Soluble Fertilizers) are an excellent source of nutrients for indoor hydroponic vegetables. WSF fertiliser mixes, such as General Hydroponics® FloraPro®, are made from high-quality, technical-grade fertiliser salts that are dry and powdered. WSFs must first be dissolved (or solubilized) in water before being used.
- There has been an increase in demand for water soluble fertilisers to prevent system blockages since they dissolve entirely in the water supply with fewer pollutants and have a lower probability of deposition and blocking the water & nutrient supply.
- Drip irrigation system is universally adopted technique to efficiently use water resources. It reduces water utilization up to 70% and improves yield up to 90% with maintaining health of soil. This technique is best suited to plants grown in rows in the area of water scarcity, hilly area and in sandy soil, majorly in the western part of India. Increase in area under drip irrigation system specially in regions with water scarcity has lead to increase in demand for water soluble fertilizers as it is the perfect solution to provide nutrients to the crops without blocking systems.

- **Increasing Use of Organic Fertilizers:** Continuous usage of chemical fertilizers decreases soil fertility. As per the report by Parliamentary Standing Committee on Agriculture, unequal use of inorganic fertilizers and pesticides drastically decreases soil fertility. In India, 292 districts consume 85% of all the country's chemical fertilizers. As per the report, lack of awareness about the negative impact of chemical fertilizers among farmers has led to such imbalance.
- In order to combat nutrients imbalance in soil, usage of organic fertilizers is gaining traction among farmers. Under National Project on Organic Farming (NPOF), government is providing financial aid to farmers for using organic fertilizers. Thus, growing consumption of organic fertilizers along with government subsidy is likely to have negative impact on water soluble fertilizers.
- **High Price of Water-Soluble Fertilizers owing to Imports:** India imports over 80% of WSF and produces 10-15% to meet its demand. China, Israel, Jordan and Norway are the major exporters of WSF to India. Imported WSFs are levied with import duty, which is added to the overall prices of WSF. Unaffordability of WSF by small farmers is the major restraining factor, however, increasing domestic production and government initiatives on promoting micro-irrigation are expected to bring down the prices in the future.

Composted Manure

- Although manure is a complete fertiliser, the NPK ratio varies depending on the animal source. Fresh manures have a higher rate; however, they should not be applied to plant roots. Application rates differ a lot, therefore, double-check the label for the correct amounts. Some manure is applied at a rate of 500 pounds per 1,000 square feet, while others are applied at 70 pounds per 1,000 square feet. Dig manure into vegetable beds in the early spring or use it as a top dressing for flower beds and borders in the spring or late fall. With all these advantages, composted manure may prove to be one of the greatest alternatives to water-soluble fertilisers.

Guano

- The excrement of seabirds, bats, and seals is known as guano. Guano has significant levels of nitrates and contains ammonia, uric acid, phosphoric acid, oxalic acid, and carbonic acid. Because of the high phosphorus content, this is an excellent phosphorus fertiliser and a great alternative to water-soluble fertilisers.

Nano Urea

- This new product is anticipated to take the place of urea granules, which are one of the most used fertilisers on the planet. With a nitrogen concentration of 46%, conventional granular urea is one of the most significant nitrogenous fertilisers in the country, and it is available at one of the lowest market costs. The new nano urea liquid will boost crop yields while also improving nutritional quality. The novel product is projected to reduce environmental pollution caused by granular urea by minimising its excessive application, which exacerbates soil, water, and air pollution, as well as climate change problems, and can be used as a substitute for water soluble fertilisers, particularly in India.

Increasing demand for Micronutrients based Fertilizers

- 
- The deficiencies of nutrient elements and inappropriate nutrient management practices in agricultural soils of the world is one of the reasons for low crop productivity, reduced nutritional quality of agricultural produce, and animal/human malnutrition.
 - Fertilizers that contain trace elements (such as boron, copper, manganese, zinc, and cobalt) that is, substances that plants require in small quantities. Micronutrients play a vital role in ensuring balanced nutrition to crops, and the lack of these may limit crop growth.
 - They are distinguished according to trace element; there are also polymicronutrient fertilizers, which contain two or more trace elements. Salts of trace elements, industrial wastes (slag or slurry), frits (alloys of salts with glass), and chelates (compounds of organic substances with metals, such as zinc and copper) are used as micronutrient fertilizers.

Advent of Nano Fertilizers

- 
- Nanoparticles have unique qualities that make them a potential plant growth enhancer, such as enhanced sorption capacity, a higher surface-to-volume ratio, and controlled-release kinetics to targeted areas. Nano-structured fertilizers can be employed as a smart delivery system of nutrients to plants because of these characteristics. Nano-fertilizers distribute their nutrients much more slowly than ordinary fertilizers. This strategy enhances nutritional management by enhancing nutrient use efficiency and reducing nutrient leakage into groundwater. Nano-fertilizers are made to release active components in response to biological and environmental demands. According to scientists, nano-fertilizers also boost agricultural output by enhancing photosynthetic activity, seedling growth, seed germination rate, nitrogen metabolism, carbohydrate and protein synthesis.



Increasing Usage of Bio-Based Fertilizers

- Fertilisers contain some of the most important nutrients, such as nitrogen and phosphates. Phosphorus is a scarce resource, and Europe's phosphorus supply is insignificant. The nitrogen recovery cycle consumes a lot of energy and has an impact on food output. Traditional fertilisers have a number of drawbacks that bio-based fertilisers can help to overcome. It can also overcome hazards linked with diminishing effectiveness of soil nutritional management through natural processes, in addition to its evident benefit to sustainability. It stimulates innovation, research, and even investment not only in technology and product development but also in the circular economy from an innovation aspect.
- Bio-based fertilisers (BBF) are an alternative to mineral fertilisers for farmers. However, a lack of knowledge about the best and safest ways to use bio-based fertilisers in agriculture prevents their widespread use.



Trend of Customized Fertilizers

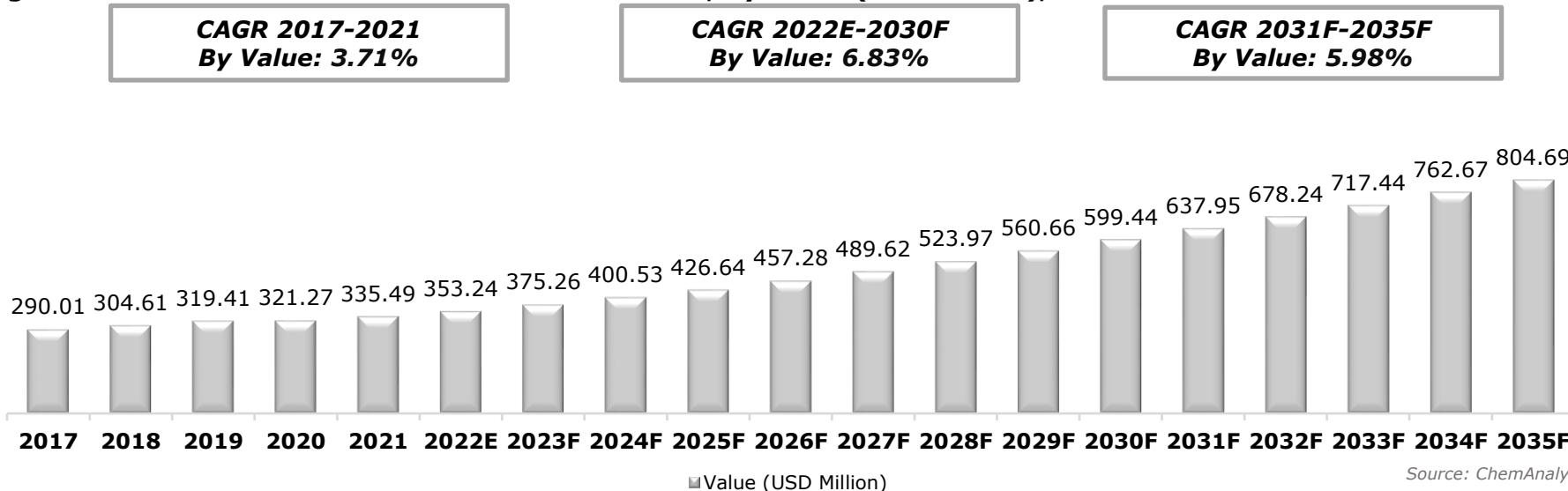
- Based on proven scientific plant nutrition principles and research, customised fertilisers provide the finest nutritional bundle for premium quality plant development and productivity. They are defined as a bundle for high-yielding, high-quality plant growth. They are defined as a multi-nutrient carriers designed to contain macro and/or micronutrient forms from both inorganic and organic sources, manufactured through a systematic granulation process, satisfying the crop's nutritional needs, specific to its site, soil, and stage, validated by a scientific crop model capability developed by an accredited fertiliser manufacturing/marketing company. The software tools are expected to be used by prospective makers or marketers. Agrotechnology Transfer Decision Support System (DSSAT). Crop Model, for example, can be used to calculate the best fertiliser grades for a specific crop.

India WSF Market Outlook (2022-2035)



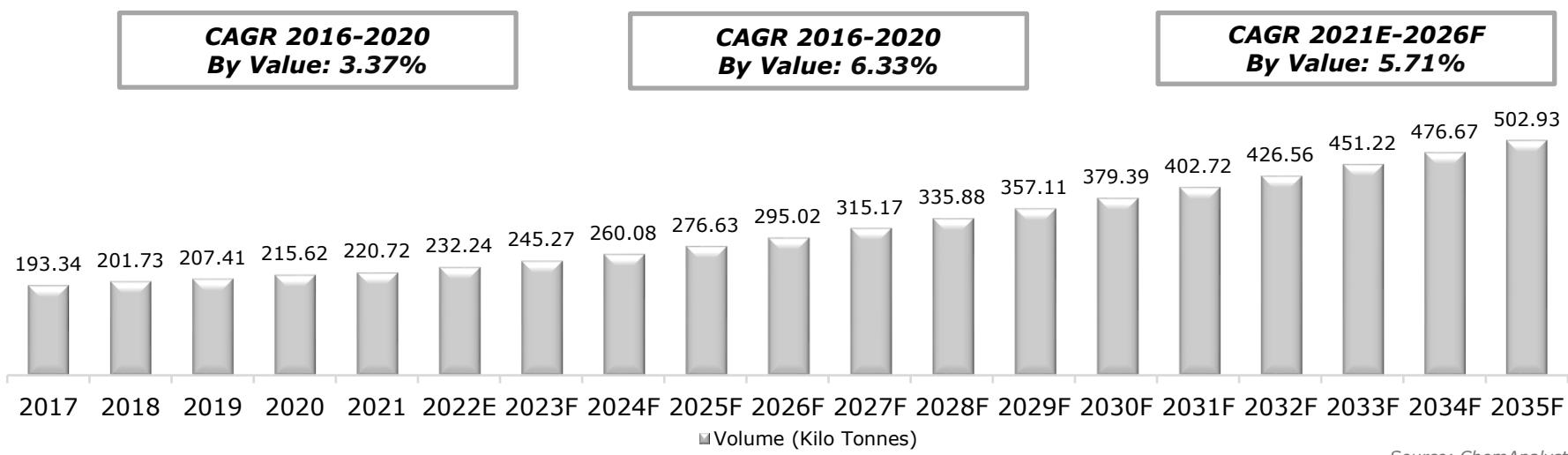
India Water Soluble Fertilizer Market Size, By Value & Volume, 2017-2035

Figure 1: India Water Soluble Fertilizer Market Size, By Value (USD Million), 2017-2035F



Source: ChemAnalyst

Figure 2: India Water Soluble Fertilizer Market Size, By Volume (Kilo Tonnes), 2017-2035F



Source: ChemAnalyst

- India water soluble fertilizers market is anticipated to witness robust growth during forecast period, owing to continuous growth of agriculture produce involving augment demand for edible crops, fruits & vegetables as well as cash crops in the nation.
- The market growth has also buoyed particularly from hydroponics and vertical farming where in liquid spray based fertilizers for horticulture, foliage crops cultivation is employing water soluble fertilizers as preferred mode.
- Moreover, expansion of micro-irrigation land, increasing fertilizers production capacities in India along with increasing government initiatives towards decreasing dependence on imports of fertilizers and increasing awareness regarding the benefits of using water soluble fertilizers are further anticipated to boost growth in India water soluble fertilizers market in the coming years.
- The growth trend is anticipated to escalate in continued momentum owing to high adoption rate and paradigm shift from conventional fertilisers towards water soluble fertilizers. This owing to numerous advantages such as reduced emissions and effluent on soil such as NH_3 , reduced dosage of additives, greater spray coverage area on soil per unit resulting in economic consumption. With substitutes such as Nano Urea which is also provided in liquid dispersion, the demand and subsequent production rate of conventional granulated urea is expected to be halved in next 5 years followed by further reduction upto 40% in the next decade.
- The pricing being on the higher side is holding back its profound sales across all sales channels as compared to conventional urea at present. However, this issue is likely to be mitigated by subsidies and investment policies announced by government which will enable new units to be set up as well as achieving economies of scale for producing water soluble fertilizers.

India Water Soluble Fertilizer Market Share, By Type

Table 1: India Water Soluble Fertilizer Market Share, By Type, By Value (USD Million) & By Volume (Kilotonnes), 2017-2035F

By Type		2017	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2035F
Calcium Nitrate (15.5-0-0-19)	Value	98.97	115.37	122.07	129.38	138.42	147.23	157.67	168.67	180.40	192.98	206.15	275.61
	Volume	75.58	86.86	91.79	96.74	102.80	109.20	116.37	124.22	132.32	140.64	149.31	197.22
Potassium Nitrate (13-0-45)	Value	45.54	49.53	52.33	55.89	59.85	64.01	68.93	74.19	79.71	85.46	91.61	123.46
	Volume	26.52	28.20	29.78	31.65	33.69	36.00	38.60	41.49	44.41	47.33	50.43	67.15
Potassium Sulphate (0-0-50)	Value	26.45	25.90	26.71	28.15	29.60	31.06	32.79	34.62	36.47	39.19	42.02	57.38
	Volume	15.05	14.09	14.46	15.12	15.75	16.45	17.22	18.08	18.90	20.20	21.54	29.17
Mono Ammonium Phosphate (12-61-0)	Value	88.68	104.77	109.50	115.92	123.04	130.81	139.70	149.04	158.86	169.59	180.97	241.56
	Volume	58.07	67.73	70.73	74.43	78.49	83.31	88.53	94.23	100.02	106.09	112.48	148.26
Mono Potassium Phosphate (0-52-34)	Value	30.36	39.92	42.63	45.93	49.62	53.53	58.20	63.10	68.52	73.43	78.69	106.67
	Volume	18.12	23.84	25.48	27.32	29.36	31.67	34.31	37.15	40.23	42.85	45.63	61.14
Total	Value	290.01	335.49	353.24	375.26	400.53	426.64	457.28	489.62	523.97	560.66	599.44	804.69
	Volume	193.34	220.72	232.24	245.27	260.08	276.63	295.02	315.17	335.88	357.11	379.39	502.93

Source: ChemAnalyst

India Water Soluble Fertilizer Market Share, By End Use

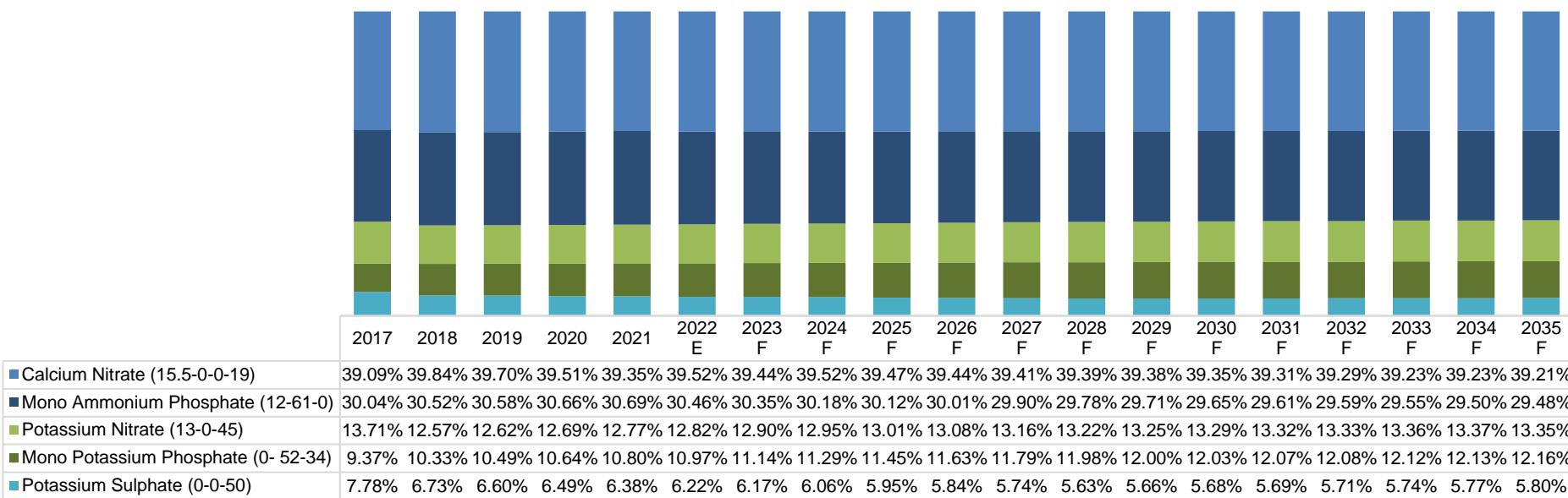


Table 2: India Water Soluble Fertilizer Market Share, By End Use, By Value (USD Million) & By Volume (Kilotonnes), 2017-2035F

By Type		2017	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2035F
Gardening & Horticulture	Value	107.72	124.97	131.65	140.08	149.71	159.57	171.16	183.42	196.56	210.42	225.25	303.10
	Volume	77.33	88.52	93.17	98.52	104.49	111.20	118.64	126.71	135.24	143.73	152.90	203.04
Foliage Crops	Value	70.06	81.10	85.46	90.86	97.11	103.54	110.92	118.91	127.20	136.07	145.32	194.39
	Volume	41.15	47.02	49.50	52.33	55.57	59.16	63.05	67.47	71.87	76.39	81.08	107.20
Fruits & Vegetable	Value	81.32	94.22	99.34	105.62	112.69	120.15	128.74	137.95	147.68	158.18	169.21	227.38
	Volume	51.04	58.41	61.51	65.02	68.92	73.38	78.25	83.65	89.18	94.92	100.89	134.13
Field & Cash Crops	Value	30.91	35.20	36.78	38.70	41.03	43.38	46.45	49.34	52.53	55.99	59.67	79.82
	Volume	23.82	26.77	28.05	29.40	31.10	32.88	35.08	37.35	39.59	42.06	44.53	58.56
Total	Value	290.01	335.49	353.24	375.26	400.53	426.64	457.28	489.62	523.97	560.66	599.44	804.69
	Volume	193.34	220.72	232.24	245.27	260.08	276.63	295.02	315.17	335.88	357.11	379.39	502.93

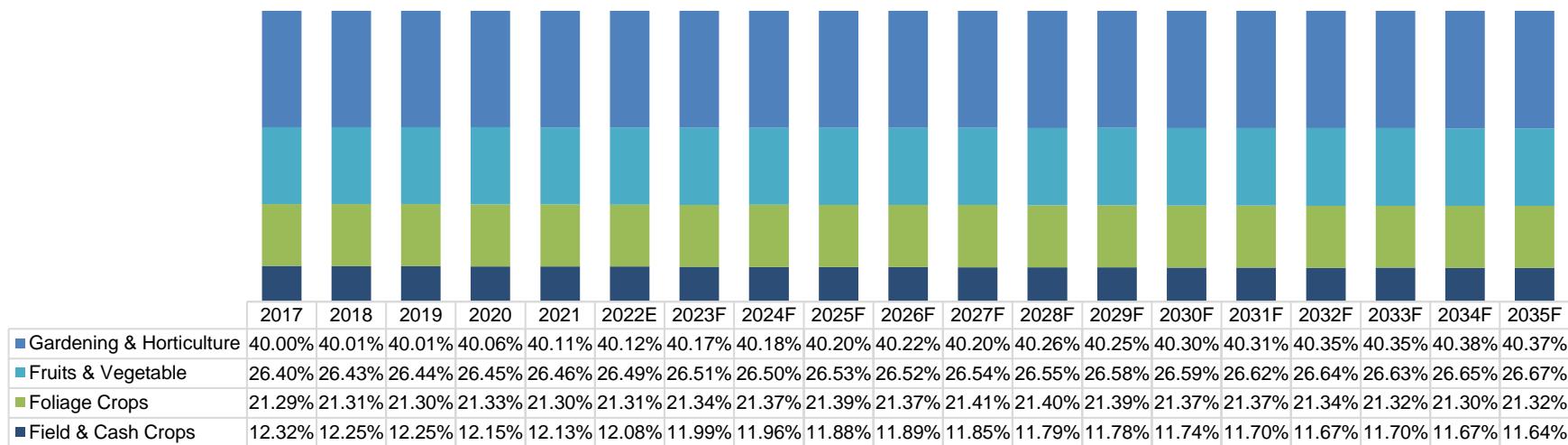
India Water Soluble Fertilizer Market Share, By Type

Figure 3: India Water Soluble Fertilizer Market Share, By Type, By Volume, 2017-2035F



Source: ChemAnalyst

Figure 4: India Water Soluble Fertilizer Market Share, By End Use, By Volume, 2017-2035F



Source: ChemAnalyst

India Water Soluble Fertilizer Market Share, By Region



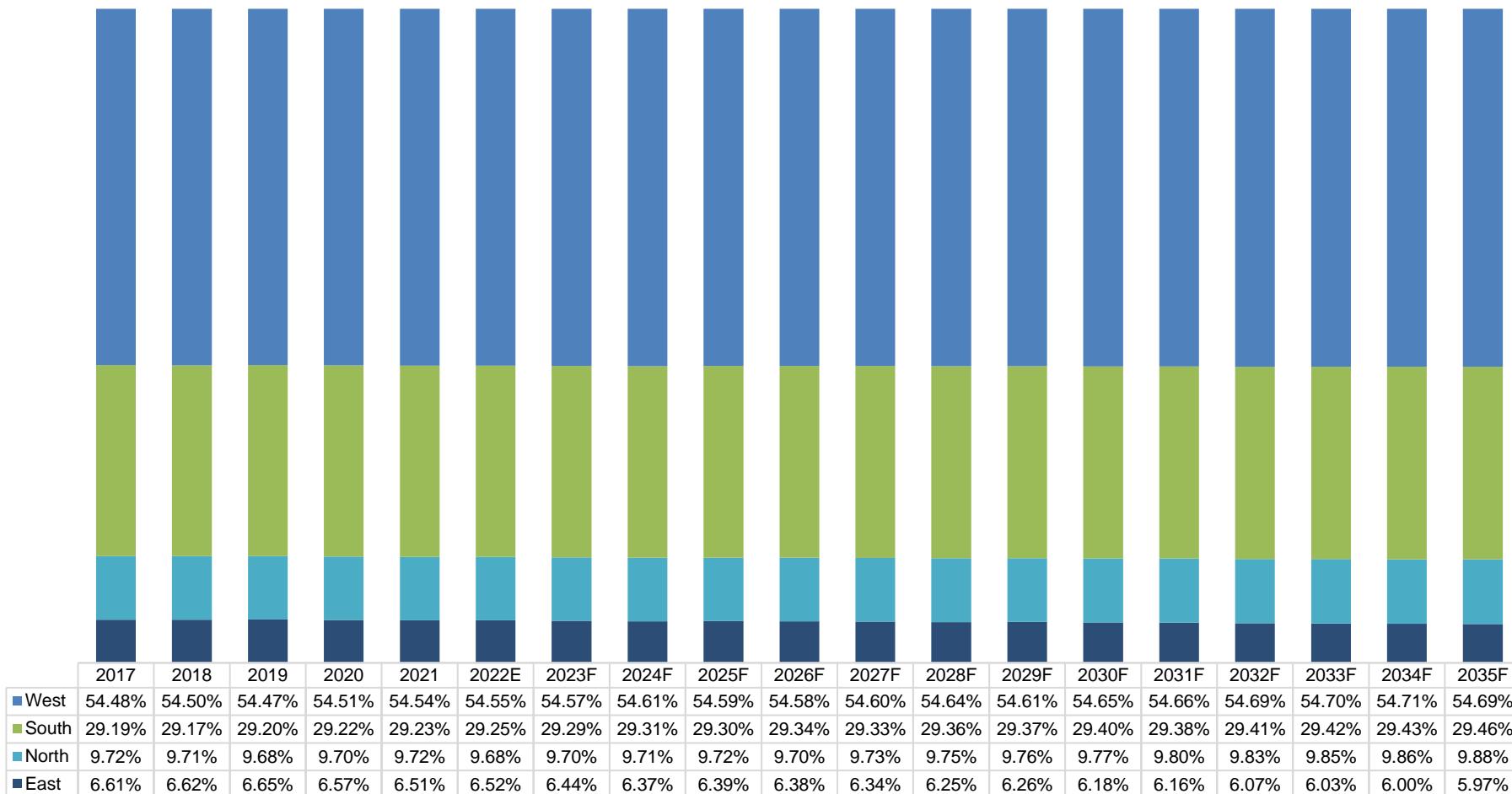
Table 3: India Water Soluble Fertilizer Market Share, By Region, By Value (USD Million) & By Volume (Kilotonnes), 2017-2035F

By Type		2017	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2035F
West	Value	140.57	162.82	171.46	182.23	194.66	207.26	222.10	237.91	254.81	272.48	291.57	391.72
	Volume	105.33	120.38	126.69	133.84	142.03	151.01	161.02	172.08	183.52	195.02	207.34	275.05
South	Value	100.60	116.52	122.75	130.55	139.42	148.47	159.32	170.53	182.66	195.50	209.20	281.32
	Volume	56.44	64.52	67.93	71.84	76.23	81.05	86.56	92.44	98.61	104.88	111.54	148.16
North	Value	31.79	36.77	38.75	41.20	44.06	46.97	50.39	53.91	57.79	61.95	66.06	88.19
	Volume	18.79	21.45	22.48	23.79	25.25	26.89	28.62	30.67	32.75	34.85	37.07	49.69
East	Value	17.05	19.39	20.28	21.28	22.39	23.93	25.47	27.27	28.71	30.72	32.61	43.45
	Volume	12.78	14.37	15.14	15.80	16.57	17.68	18.82	19.98	20.99	22.35	23.45	30.03
Total	Value	290.01	335.49	353.24	375.26	400.53	426.64	457.28	489.62	523.97	560.66	599.44	804.69
	Volume	193.34	220.72	232.24	245.27	260.08	276.63	295.02	315.17	335.88	357.11	379.39	502.93

Source: ChemAnalyst

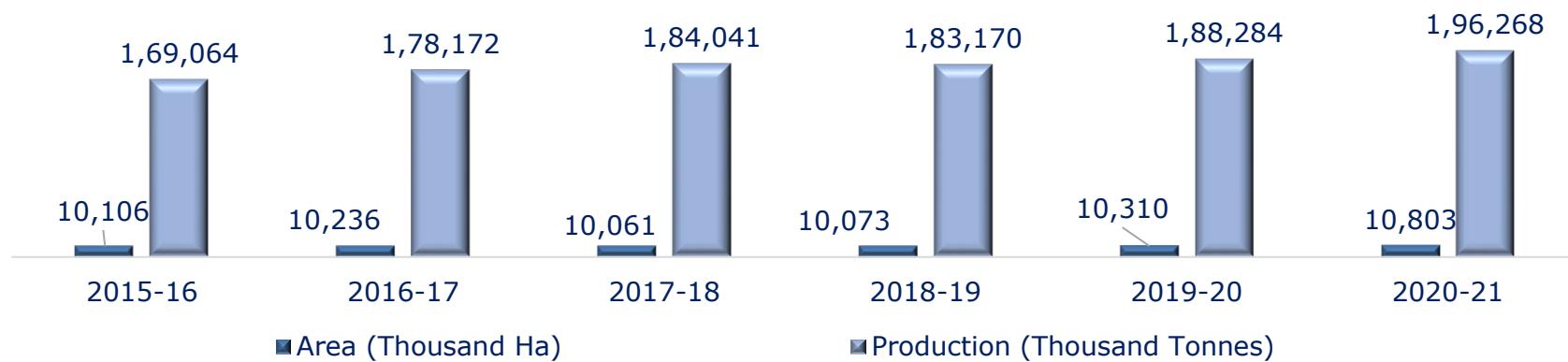
India Water Soluble Fertilizer Market Share, By Region

Figure 5: India Water Soluble Fertilizer Market Share, By Region, By Volume, 2017-2035F



India Water Soluble Fertilizer Market: End Use Sector Macroeconomic Growth Indicators

Figure 6: Area and production of vegetable crops in India, 2015-16 to 2020-21



Source: Press Information Bureau

Figure 7: India Liquid Fertilizers Market Size, By Value, 2017 & 2023F (USD Billion)



Source: ChemAnalyst

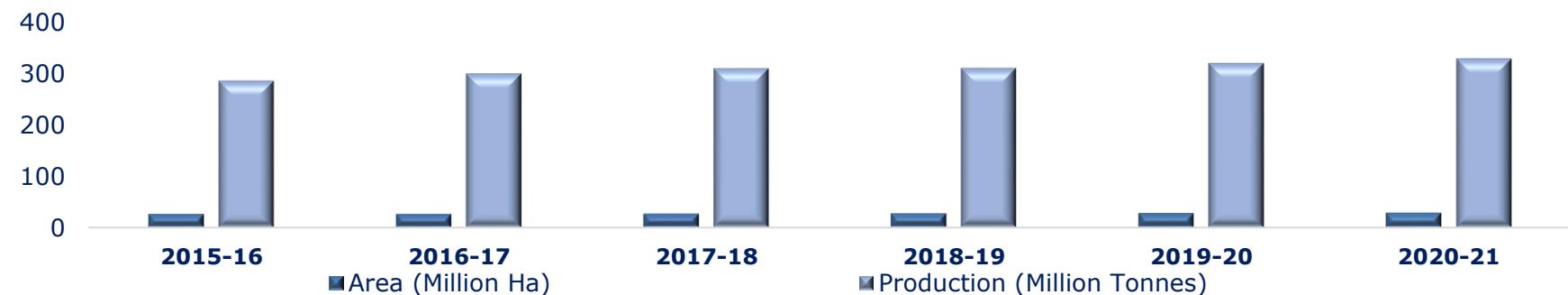
India Water Soluble Fertilizer Market: End Use Sector Macroeconomic Growth Indicators

Figure 8: India Total Food Grain Production, By Type, By Volume, 2016-2020 (Million Metric Tons)



Source: Ministry of Agriculture & Farmers Welfare, Chemanalyst estimates

Figure 9: Area and production of total horticulture in India, 2015-16 to 2020-21



Source: Press Information Bureau

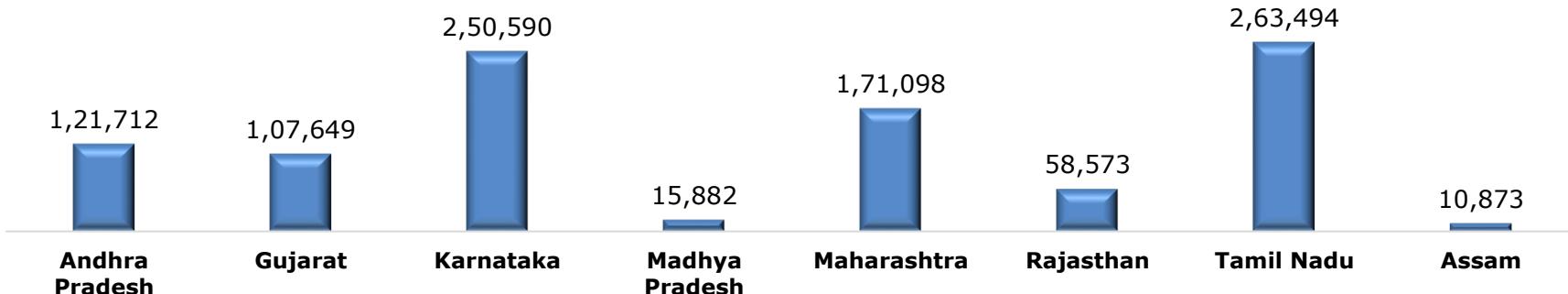
Figure 10: Area Covered under Micro Irrigation in India, 2005-2021 (Million Hectare)



Source: Ficci , ChemAnalyst estimates

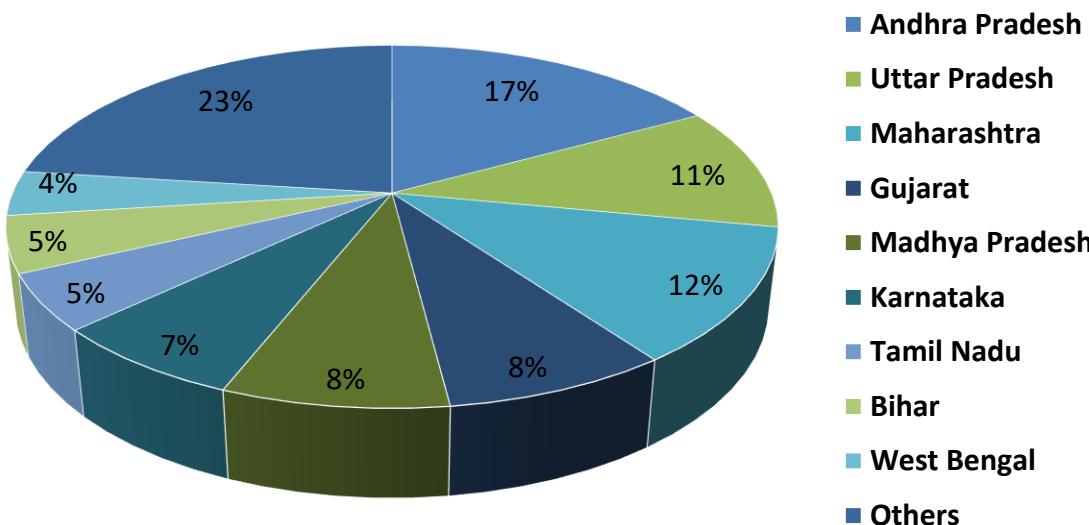
India Water Soluble Fertilizer Market: Regional Macroeconomic Growth Indicators

Figure 11: Partial List of Area Covered Under Drip Irrigation ('000 Hectares), By State, 2020



Source: Ministry of Agriculture & Farmers Welfare

Figure 12: India major fruits producing Share in 2021, By Key States



Source: Ministry of Agriculture & Farmers Welfare

- India Liquid fertilizers market consisting primarily of water-soluble fertilizer and nano urea is projected to grow by over 5 % in the next 5-6 years at a healthy pace and is expected to grow further in the next decade due to rapid adoption rate in domestic market of India. An immense growth opportunity also exists for inter-regional markets of Southeast Asia such as SAARC and ASEAN countries to cater the potential demand
- Water soluble fertilizers are highly preferred by horticulturists as they provide essential nutrients to fruits and vegetables in dry climate and reduce dependency on rain. Moreover, horticulture crops include almost all food crops that form a major part of the diet for the huge population of India. Thus, these crops generate maximum demand for water soluble fertilizers for better yield.
- With greater yield rate per million hectare every year is likely to call for increased consumption of fertilizers
- The total production of vegetables is higher in comparison to fruits throughout the country. Potato, onion, brinjal and cabbage are the major contributors to vegetables. Mango, banana and jackfruit are the major contributor to fruits segment.
- Southern and Western India are understood to be the major demand generating regions for water soluble fertilizers, as the soil of these regions poses a challenge for cultivators due to high clay level. Thus, to boost the yield, there is high demand for water soluble fertilizers in these regions as they provide essential nutrients such as nitrogen, phosphorous and zinc, and easily dissolve into the soil.
- In the Southern and Western region, Andhra Pradesh and Maharashtra account for majority shares in water soluble fertilizers market, due to various factors such as large areas covered under drip irrigation and sprinkle irrigation, in which water soluble fertilizers are highly used.

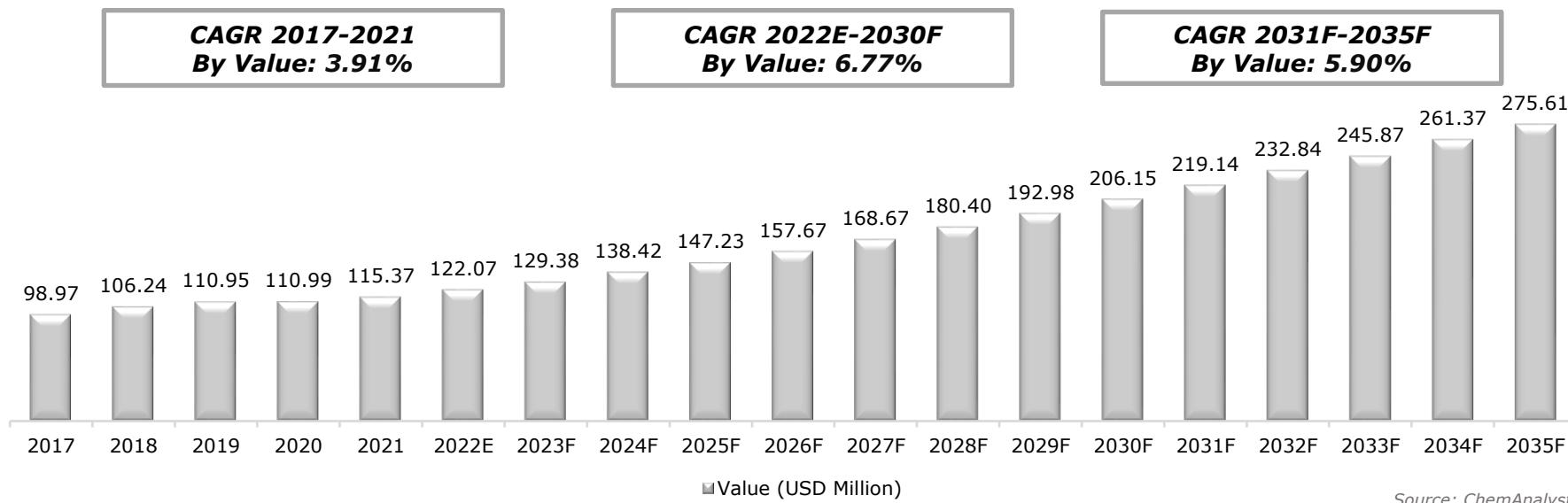
India WSF Market Outlook by Type (2022-2035)



- Calcium nitrate has the leading share in India water soluble market owing to nutrient deficiency in the soil, it provides both calcium and nitrogen. Although ammonium nitrate is a commonly used as a source of nitrogen, but it interferes with calcium uptake and causes calcium deficiency disorders in plants. The solution is to apply calcium nitrate instead to any crop that tends to develop calcium deficiency disorders. Calcium Nitrate is followed by mono ammonium phosphate in terms of demand of water-soluble fertilizers.
- MAP has more Phosphorus (P) than most other fertilisers and is used when high Phosphorus (P) levels are required or for flowering plants such as fruits and vegetables. Because it is 100 percent water soluble, it may be applied as a foliar fertiliser, which is the most efficient way to apply any fertiliser.
- MPP has zero nitrogen content and has 100% plant nutrients thus being preferred product for nitrogen free cultivation as well as increased need of potassium and phosphorous in root system. The product is ideally used for sucrose fruits such as mango, sugarcane as well as vineyards, melons, vegetables and floriculture. The product also is used for foliage cultivation which is moderately acidic , compatible with majority of pesticides . However, the product is not recommended be mixed with calcium or magnesium fertilizers. Iron, manganese, zinc and copper and should be used in chelates
- Potassium nitrate also known as saltpeter is commercially sold as either in water-soluble, crystalline material primarily intended for dissolving and applying with water or in a prilled form for soil application. The major cause of utilizing the product is for high-value crops that benefit from nitrate (NO_3^-) nutrition and a source of potassium (K^+) free of chloride (Cl^-). Key examples include greenhouse plant production and hydroponic culture
- Potassium Sulphate is a water-soluble fertilizer consisting of Potassium and Sulphate Sulphur in high content coupled with an optimal amount of Sodium. The product is best used for drip irrigation and foliar application of fertilizer. This combination ensures strong flower and fruit development. Water soluble fertilizers are highly preferred by horticulturists as they provide essential nutrients to fruits and vegetables in dry
- The demand growth is believed to primarily driven by horticulture, hydroponics, drip / micro irrigation, foliage, fruits & vegetables cultivation and production. With domestic sales as well as export sales also gaining significant traction past 7-8years, the mentioned products are likely to be consumed at brisk rate

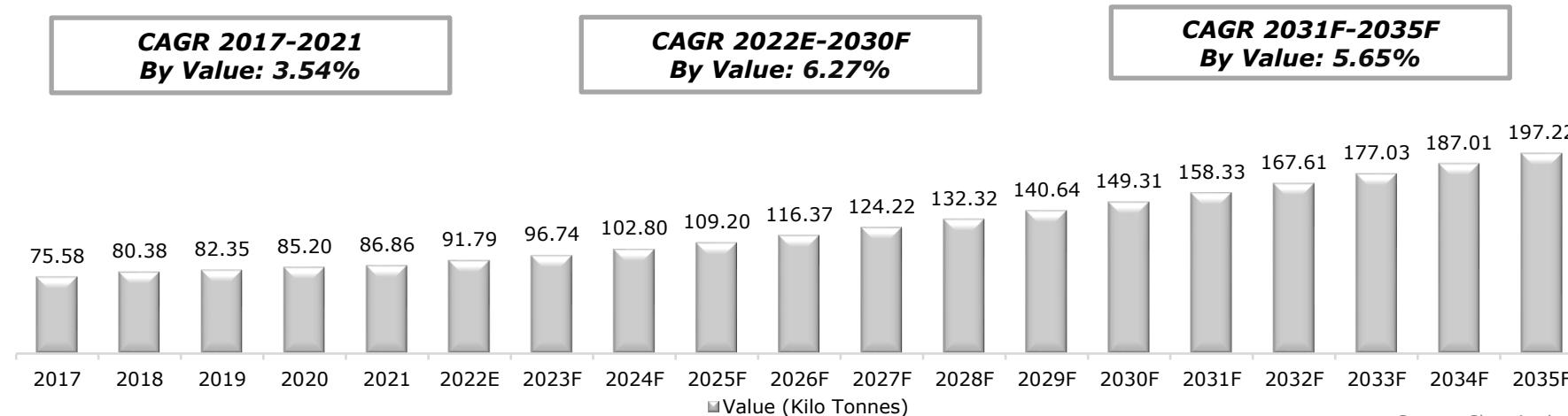
Calcium Nitrate Water Soluble Fertilizer Market Size

Figure 13: Calcium Nitrate Water Soluble Fertilizer Market Size, By Volume (USD Million), 2017-2035F



Source: ChemAnalyst

Figure 14: Calcium Nitrate Water Soluble Fertilizer Market Size, By Volume (Kilo tonnes), 2017-2035F



Source: ChemAnalyst

Calcium Nitrate Water Soluble Fertilizer Market Share, By End Use



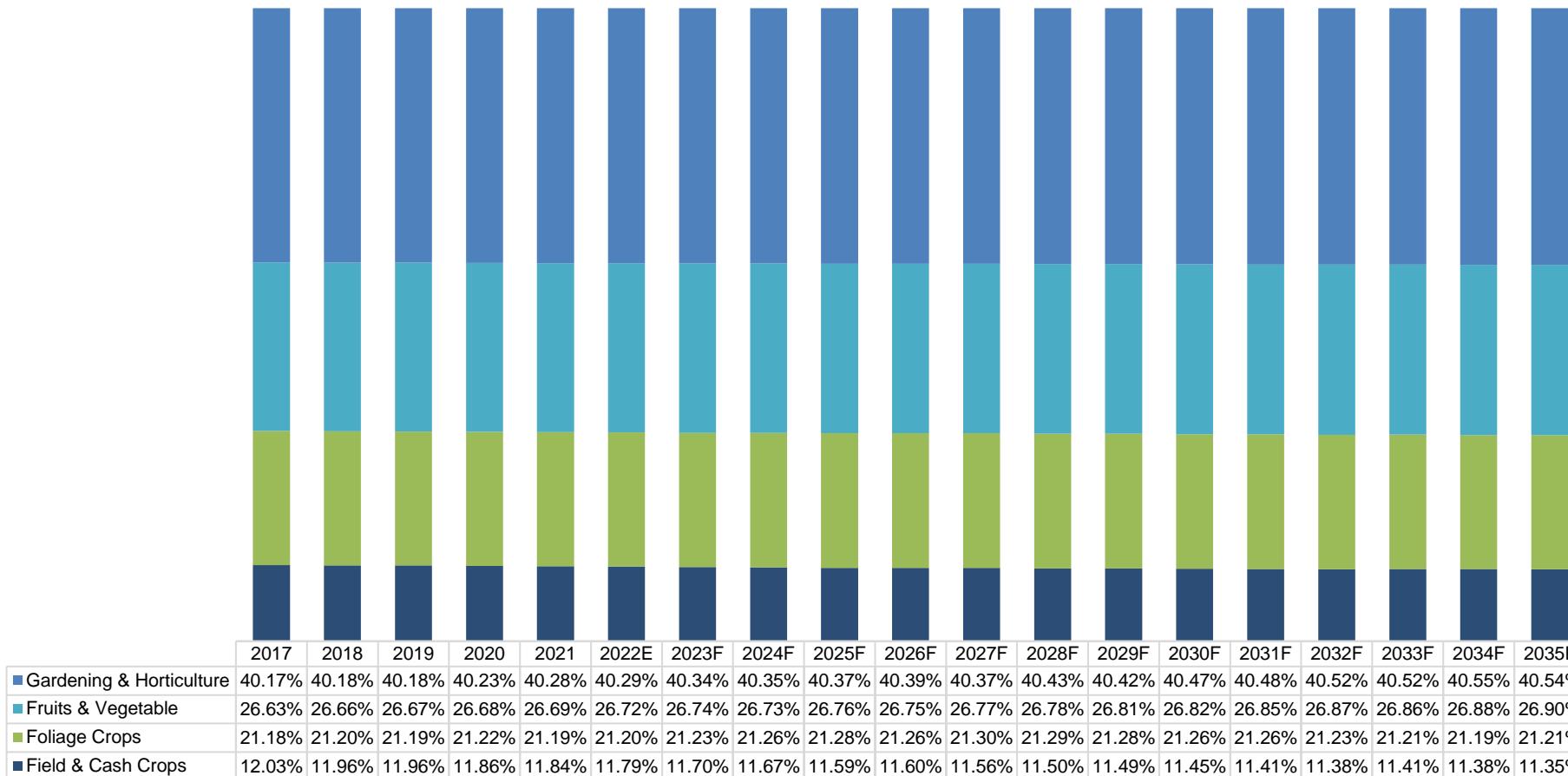
Table 4: Calcium Nitrate Water Soluble Fertilizer Market Share, By End Use, By Value (USD Million) & By Volume (Kilotonnes), 2017-2035F

By End Use		2017	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2035F
Gardening & Horticulture	Value	38.05	44.49	47.10	49.99	53.55	56.99	61.08	65.39	70.03	74.95	80.17	107.43
	Volume	30.36	34.99	36.98	39.03	41.48	44.08	47.00	50.15	53.50	56.85	60.42	79.95
Foliage Crops	Value	23.09	26.93	28.52	30.25	32.42	34.51	36.94	39.57	42.30	45.23	48.26	64.30
	Volume	16.01	18.41	19.46	20.54	21.85	23.24	24.74	26.46	28.17	29.93	31.74	41.83
Fruits & Vegetable	Value	27.34	31.91	33.81	35.87	38.36	40.84	43.72	46.81	50.08	53.63	57.33	76.73
	Volume	20.13	23.18	24.53	25.87	27.48	29.22	31.13	33.25	35.43	37.71	40.04	53.05
Field & Cash Crops	Value	10.49	12.03	12.63	13.26	14.09	14.88	15.92	16.90	17.99	19.16	20.39	27.18
	Volume	9.09	10.28	10.82	11.32	12.00	12.66	13.50	14.36	15.22	16.16	17.10	22.38
Total	Value	98.97	115.36	122.06	129.37	138.42	147.23	157.67	168.67	180.40	192.98	206.15	275.61
	Volume	75.59	86.86	91.79	96.75	102.81	109.20	116.37	124.22	132.32	140.64	149.31	197.22

Source: ChemAnalyst

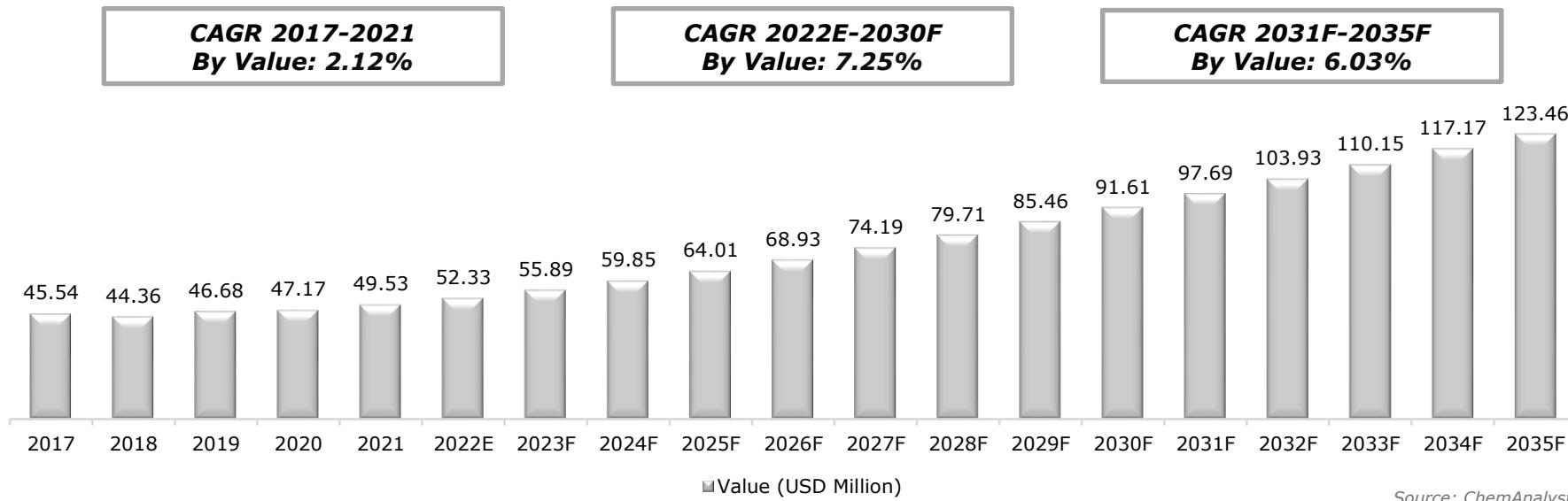
Calcium Nitrate Water Soluble Fertilizer Market Share, By End Use

Figure 15: Calcium Nitrate Water Soluble Fertilizer Market Share, By End Use, By Volume, 2017-2035F



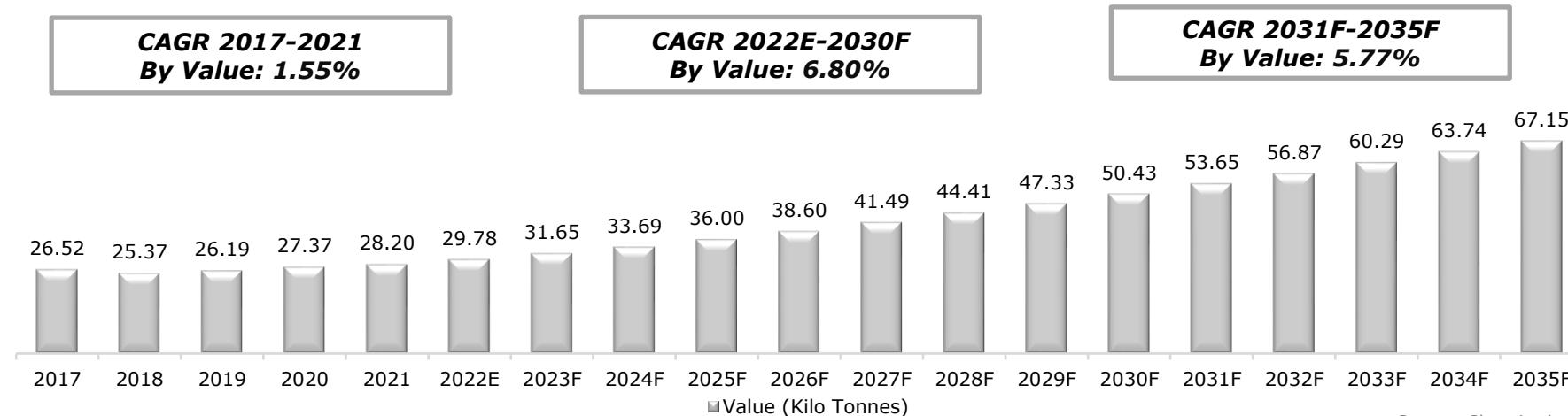
Potassium Nitrate Water Soluble Fertilizer Market Size

Figure 16: Potassium Nitrate Water Soluble Fertilizer Market Size, By Volume (USD Million), 2017-2035F



Source: ChemAnalyst

Figure 17: Potassium Nitrate Water Soluble Fertilizer Market Size, By Volume (Kilo tonnes), 2017-2035F



Source: ChemAnalyst

Potassium Nitrate Water Soluble Fertilizer Market Share, By End Use



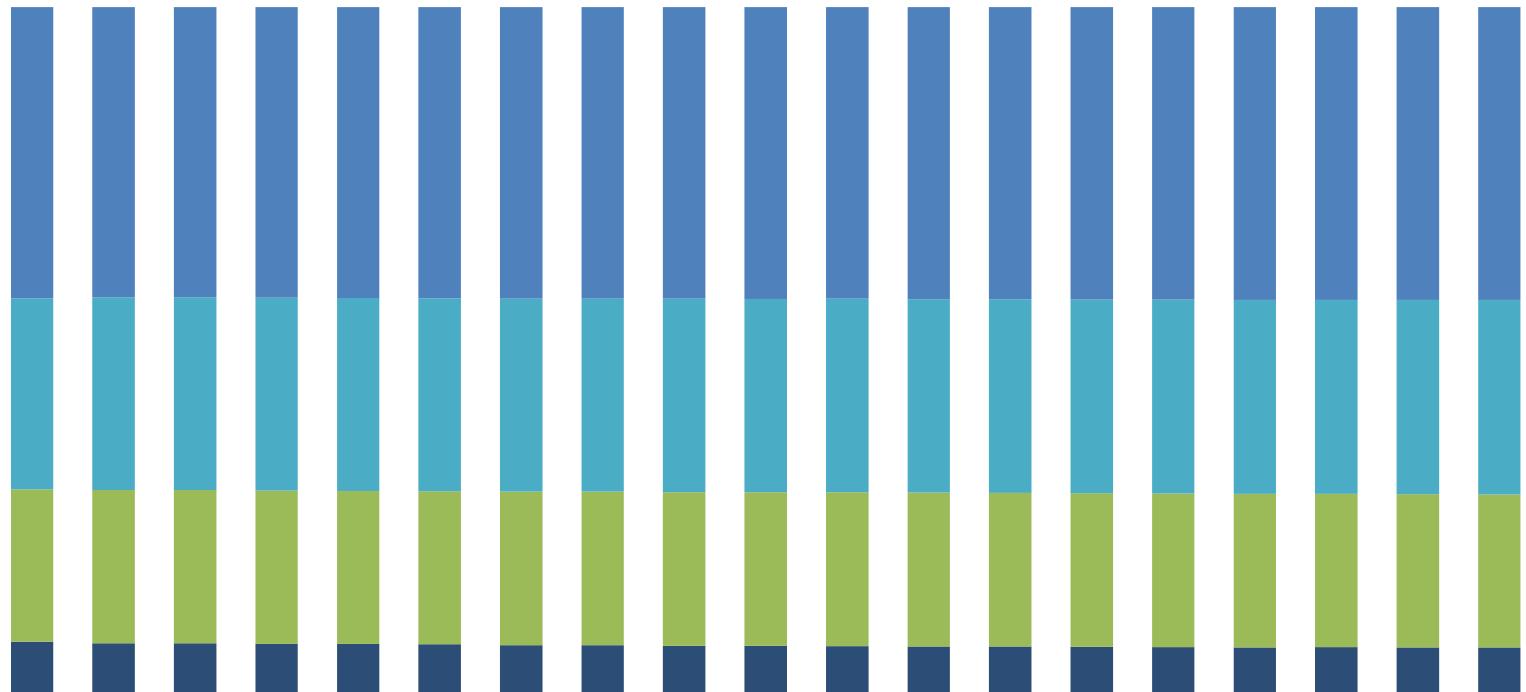
Table 5: Potassium Nitrate Water Soluble Fertilizer Market Share, By End Use, By Value (USD Million) & By Volume (Kilotonnes), 2017-2035F

By End Use		2017	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2035F
Gardening & Horticulture	Value	17.43	19.01	20.10	21.50	23.05	24.67	26.59	28.64	30.81	33.05	35.47	47.92
	Volume	10.69	11.36	12.00	12.77	13.59	14.53	15.59	16.75	17.96	19.13	20.41	27.22
Foliage Crops	Value	10.68	11.62	12.29	13.14	14.10	15.09	16.24	17.50	18.80	20.14	21.57	28.96
	Volume	5.59	5.97	6.31	6.72	7.16	7.66	8.21	8.84	9.46	10.07	10.72	14.24
Fruits & Vegetable	Value	12.54	13.66	14.45	15.45	16.54	17.71	19.06	20.53	22.06	23.68	25.40	34.27
	Volume	7.02	7.53	7.96	8.46	9.01	9.63	10.32	11.11	11.89	12.69	13.52	18.06
Field & Cash Crops	Value	4.88	5.23	5.48	5.80	6.16	6.55	7.04	7.52	8.04	8.59	9.17	12.32
	Volume	3.22	3.34	3.51	3.70	3.93	4.17	4.48	4.80	5.11	5.44	5.77	7.62
Total	Value	45.54	49.52	52.32	55.88	59.85	64.01	68.93	74.19	79.71	85.46	91.61	123.47
	Volume	26.52	28.20	29.78	31.65	33.69	36.00	38.60	41.49	44.41	47.33	50.43	67.15

Source: ChemAnalyst

Potassium Nitrate Water Soluble Fertilizer Market Share, By End Use

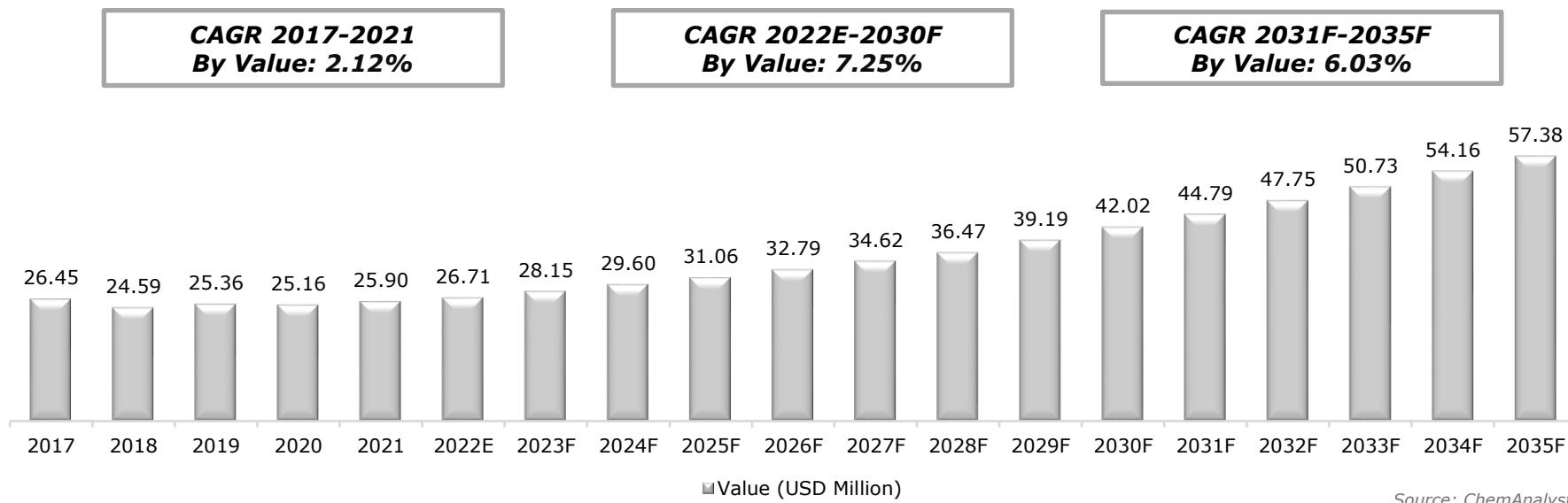
Figure 18: Potassium Nitrate Water Soluble Fertilizer Market Share, By End Use, By Volume, 2017-2035F



	2017	2018	2019	2020	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	2033F	2034F	2035F
Gardening & Horticulture	40.30%	40.18%	40.18%	40.23%	40.28%	40.29%	40.34%	40.35%	40.37%	40.39%	40.37%	40.43%	40.42%	40.47%	40.48%	40.52%	40.52%	40.55%	40.54%
Fruits & Vegetable	26.46%	26.66%	26.67%	26.68%	26.69%	26.72%	26.74%	26.73%	26.76%	26.75%	26.77%	26.78%	26.81%	26.82%	26.85%	26.87%	26.86%	26.88%	26.90%
Foliage Crops	21.10%	21.20%	21.19%	21.22%	21.19%	21.20%	21.23%	21.26%	21.28%	21.26%	21.30%	21.29%	21.28%	21.26%	21.26%	21.23%	21.21%	21.19%	21.21%
Field & Cash Crops	12.15%	11.96%	11.96%	11.86%	11.84%	11.79%	11.70%	11.67%	11.59%	11.60%	11.56%	11.50%	11.49%	11.45%	11.41%	11.38%	11.41%	11.38%	11.35%

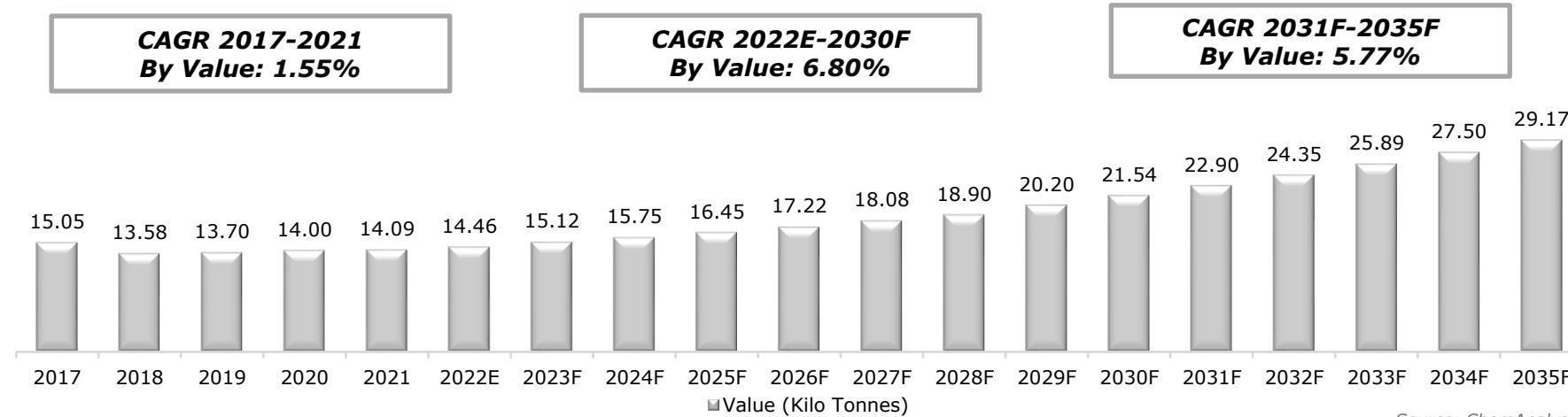
Potassium Sulphate Water Soluble Fertilizer Market Size

Figure 19: Potassium Sulphate Water Soluble Fertilizer Market Size, By Volume (USD Million), 2017-2035F



Source: ChemAnalyst

Figure 20: Potassium Sulphate Water Soluble Fertilizer Market Size, By Volume (Kilo tonnes), 2017-2035F



Source: ChemAnalyst

Potassium Sulphate Water Soluble Fertilizer Market Share, By End Use



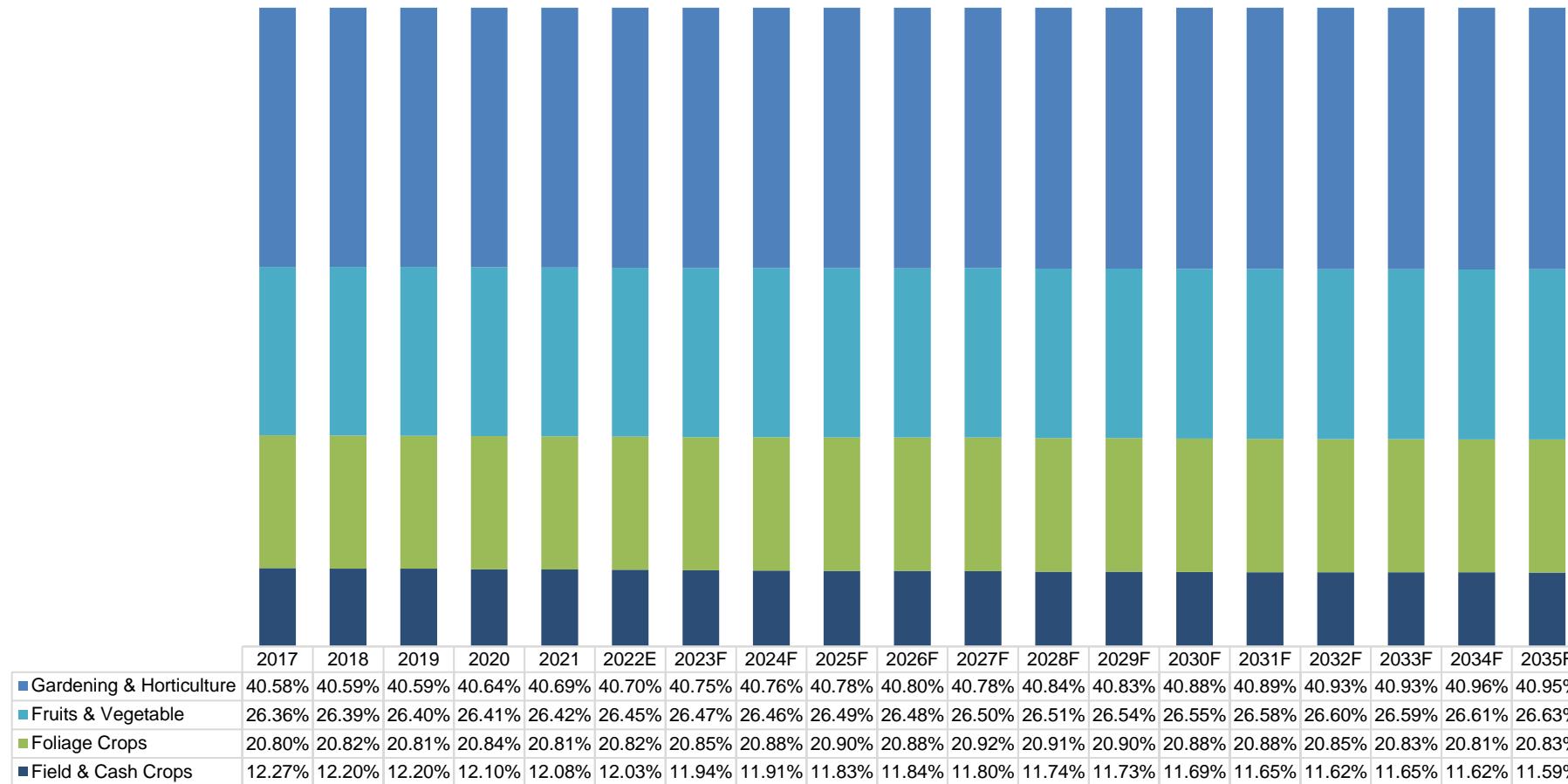
Table 6: Potassium Sulphate Water Soluble Fertilizer Market Share, By End Use, By Value (USD Million) & By Volume (Kilotonnes), 2017-2035F

By End Use		2017	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2035F
Gardening & Horticulture	Value	10.07	9.89	10.20	10.77	11.34	11.91	12.58	13.29	14.02	15.07	16.18	22.15
	Volume	6.11	5.73	5.88	6.16	6.42	6.71	7.02	7.37	7.72	8.25	8.81	11.94
Foliage Crops	Value	6.10	5.98	6.17	6.50	6.85	7.20	7.59	8.03	8.45	9.08	9.72	13.23
	Volume	3.13	2.93	3.01	3.15	3.29	3.44	3.59	3.78	3.95	4.22	4.50	6.08
Fruits & Vegetable	Value	7.41	7.27	7.51	7.92	8.32	8.74	9.23	9.75	10.27	11.05	11.86	16.21
	Volume	3.97	3.72	3.82	4.00	4.17	4.36	4.56	4.79	5.01	5.36	5.72	7.77
Field & Cash Crops	Value	2.87	2.76	2.83	2.95	3.08	3.21	3.39	3.55	3.72	3.99	4.26	5.80
	Volume	1.85	1.70	1.74	1.81	1.88	1.95	2.04	2.13	2.22	2.37	2.52	3.38
Total	Value	26.45	25.90	26.71	28.14	29.60	31.06	32.79	34.62	36.47	39.19	42.02	57.39
	Volume	15.05	14.09	14.46	15.12	15.75	16.45	17.22	18.08	18.90	20.20	21.54	29.17

Potassium Sulphate Water Soluble Fertilizer Market Share, By End Use



Figure 21: Potassium Sulphate Water Soluble Fertilizer Market Share, By End Use, By Volume, 2017-2035F

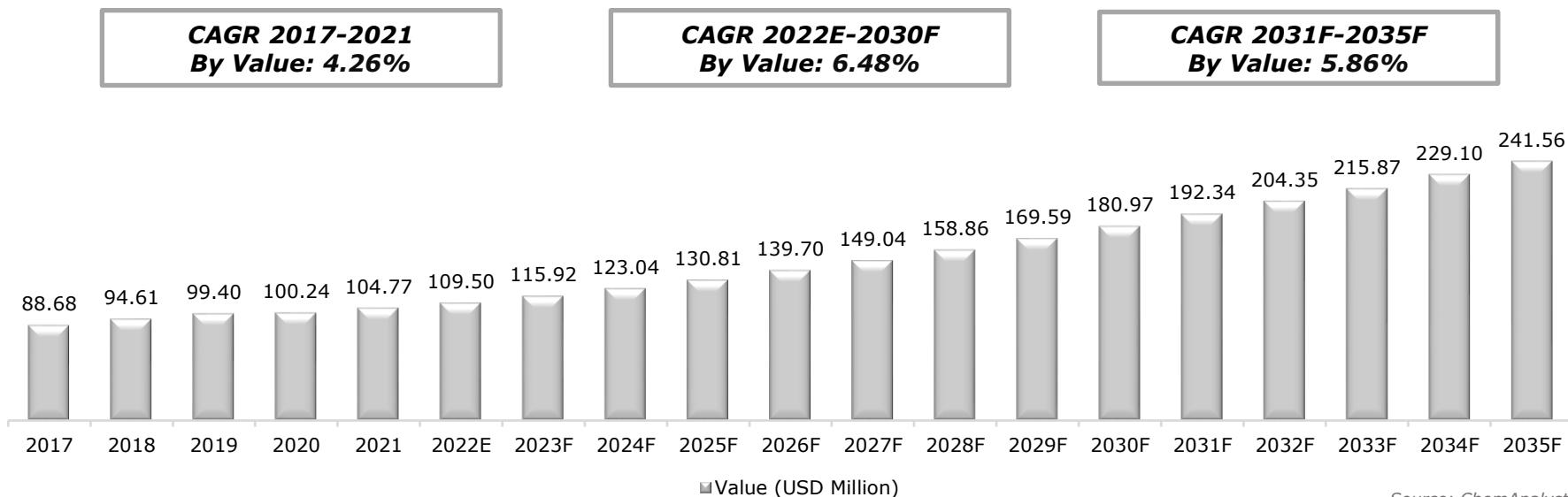


Source: ChemAnalyst

Mono Ammonium Phosphate Water Soluble Fertilizer Market Size

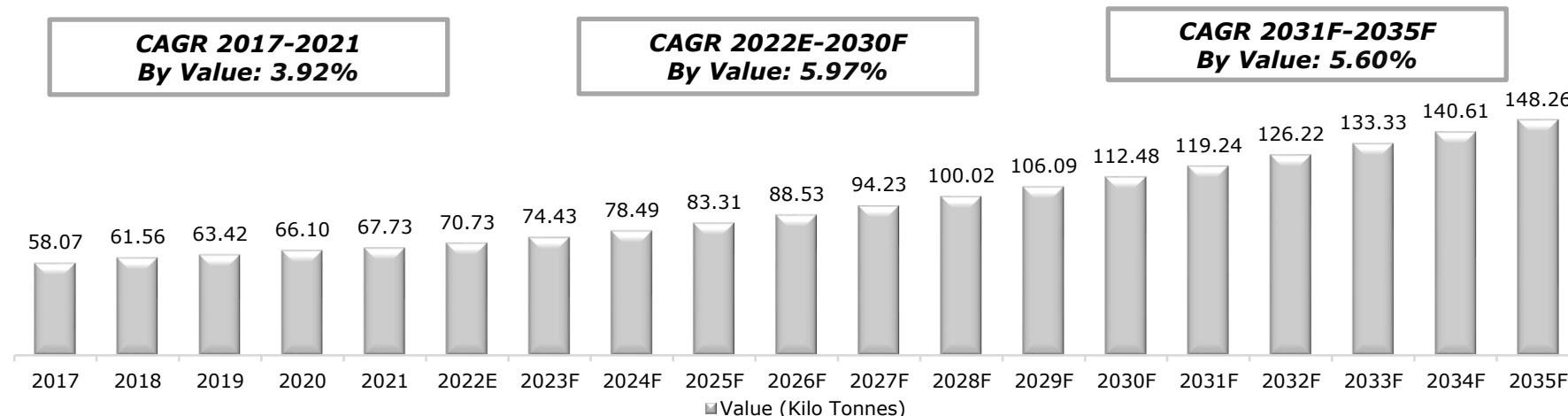


Figure 22: Mono Ammonium Phosphate Water Soluble Fertilizer Market Size, By Volume (USD Million), 2017-2035F



Source: ChemAnalyst

Figure 23: Mono Ammonium Phosphate Water Soluble Fertilizer Market Size, By Volume (Kilo tonnes), 2017-2035F



Source: ChemAnalyst

Mono Ammonium Phosphate Water Soluble Fertilizer Market Share, By End Use



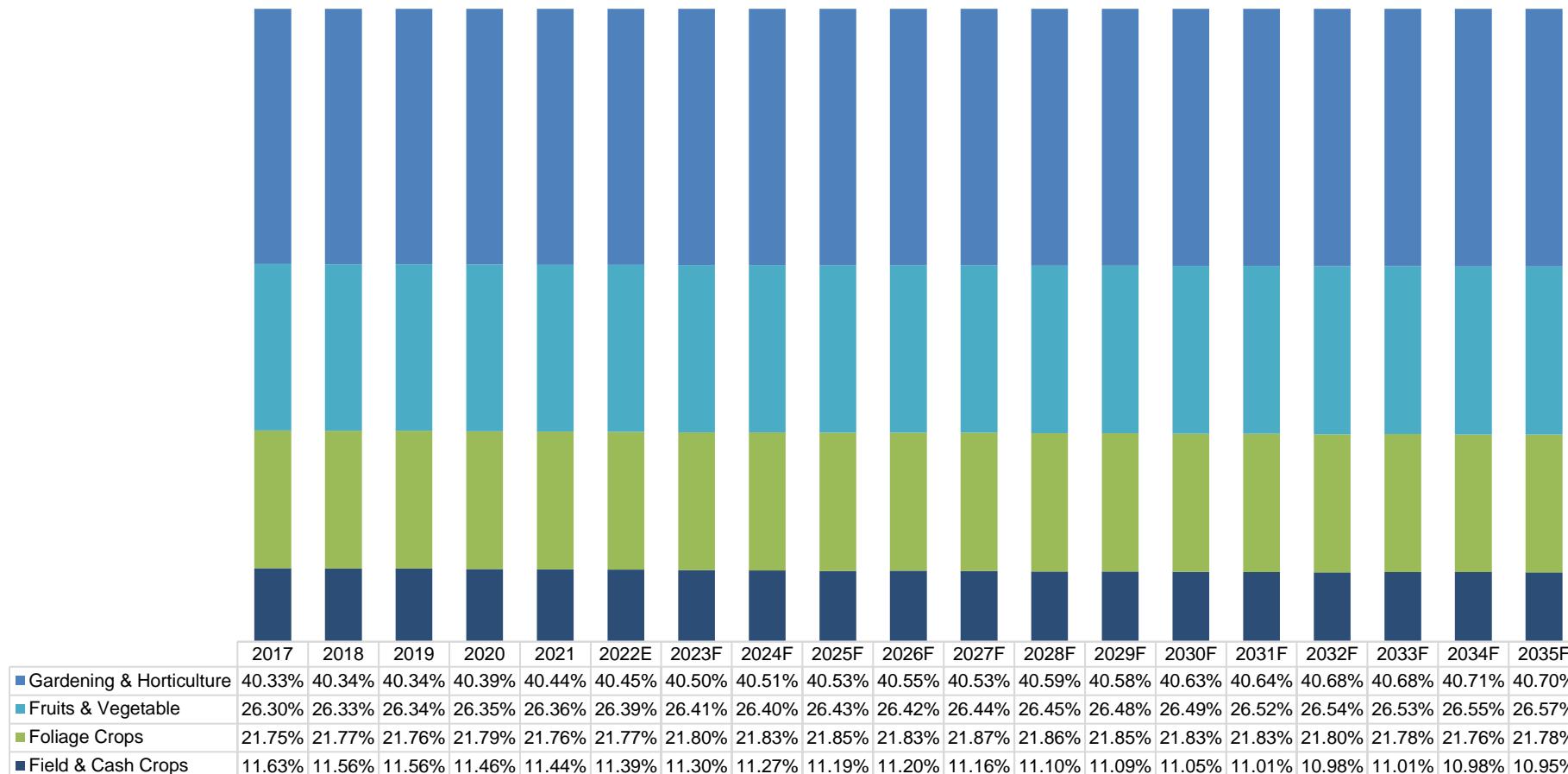
Table 7: Mono Ammonium Phosphate Water Soluble Fertilizer Market Share, By End Use, By Value (USD Million) & By Volume (Kilotonnes), 2017-2035F

By End Use		2017	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2035F
Gardening & Horticulture	Value	34.60	41.00	42.87	45.45	48.31	51.38	54.91	58.63	62.58	66.84	71.41	95.54
	Volume	23.42	27.39	28.61	30.15	31.80	33.77	35.90	38.19	40.60	43.05	45.70	60.34
Foliage Crops	Value	20.40	24.11	25.22	26.72	28.41	30.23	32.27	34.47	36.73	39.19	41.77	55.56
	Volume	12.63	14.74	15.40	16.23	17.13	18.20	19.33	20.61	21.86	23.18	24.56	32.29
Fruits & Vegetable	Value	24.64	29.15	30.51	32.32	34.29	36.49	38.96	41.60	44.35	47.40	50.62	67.64
	Volume	15.27	17.85	18.67	19.66	20.72	22.02	23.39	24.91	26.46	28.09	29.80	39.39
Field & Cash Crops	Value	9.05	10.51	10.90	11.42	12.03	12.70	13.55	14.34	15.20	16.16	17.17	22.85
	Volume	6.75	7.75	8.06	8.41	8.85	9.32	9.92	10.52	11.10	11.77	12.43	16.23
Total	Value	88.68	104.76	109.49	115.91	123.04	130.81	139.70	149.04	158.86	169.59	180.97	241.59
	Volume	58.08	67.73	70.73	74.44	78.50	83.31	88.53	94.23	100.02	106.09	112.48	148.26

Source: ChemAnalyst

Mono Ammonium Phosphate Water Soluble Fertilizer Market Share, By End Use

Figure 24: Mono Ammonium Phosphate Water Soluble Fertilizer Market Share, By End Use, By Volume, 2017-2035F



Mono Potassium Phosphate Water Soluble Fertilizer Market Size



Figure 25: Mono Potassium Phosphate Water Soluble Fertilizer Market Size, By Volume (USD Million), 2017-2035F

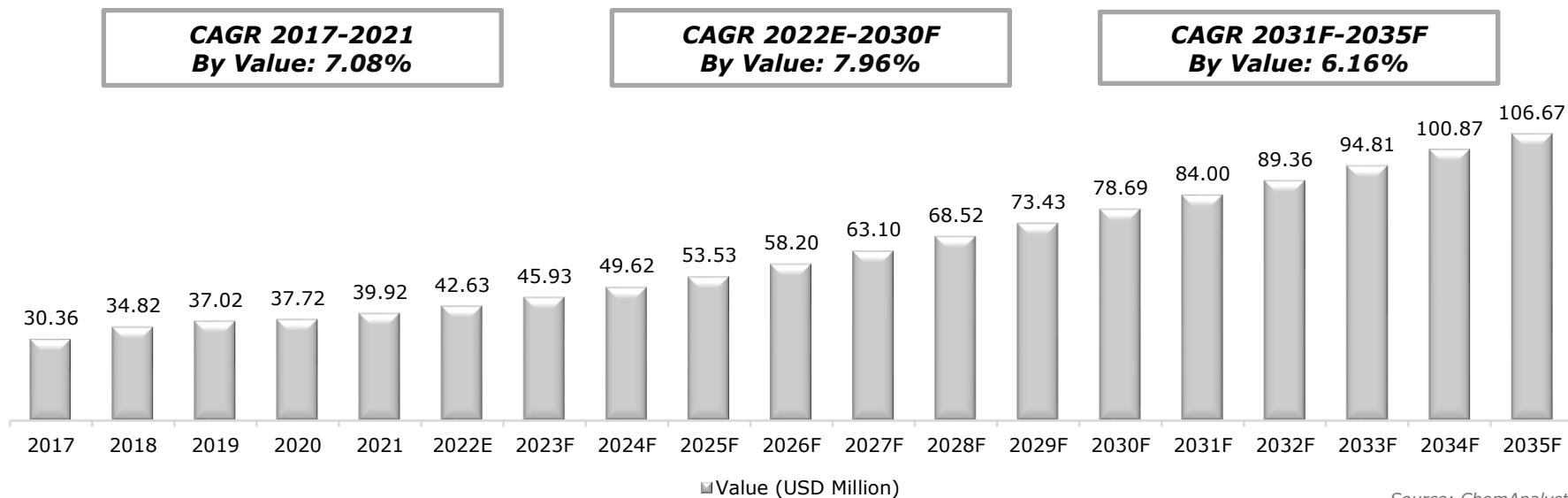
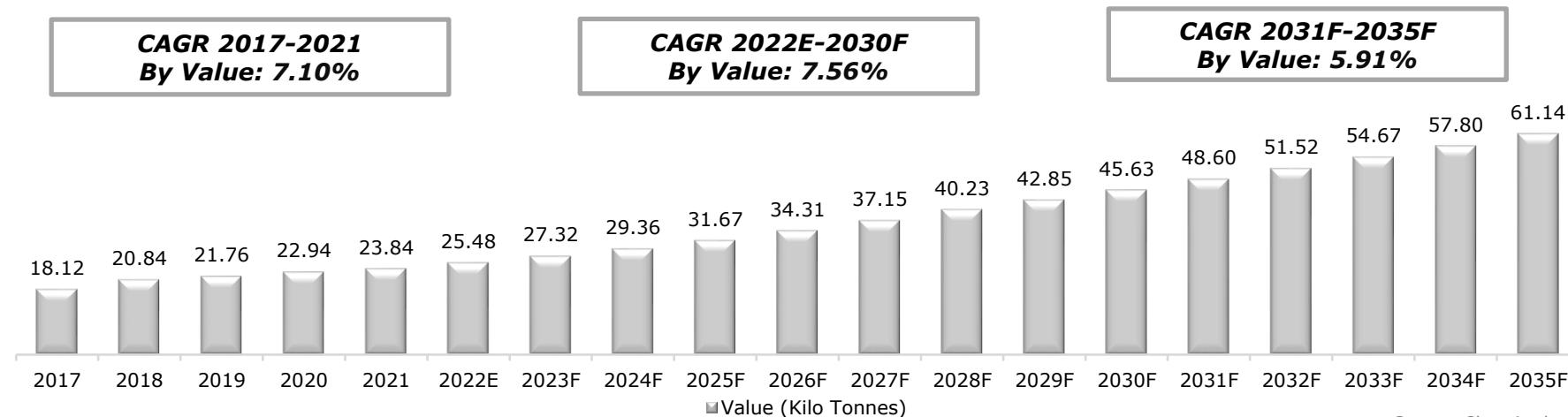


Figure 26: Mono Potassium Phosphate Water Soluble Fertilizer Market Size, By Volume (Kilo tonnes), 2017-2035F



Mono Potassium Phosphate Water Soluble Fertilizer Market Share, By End Use

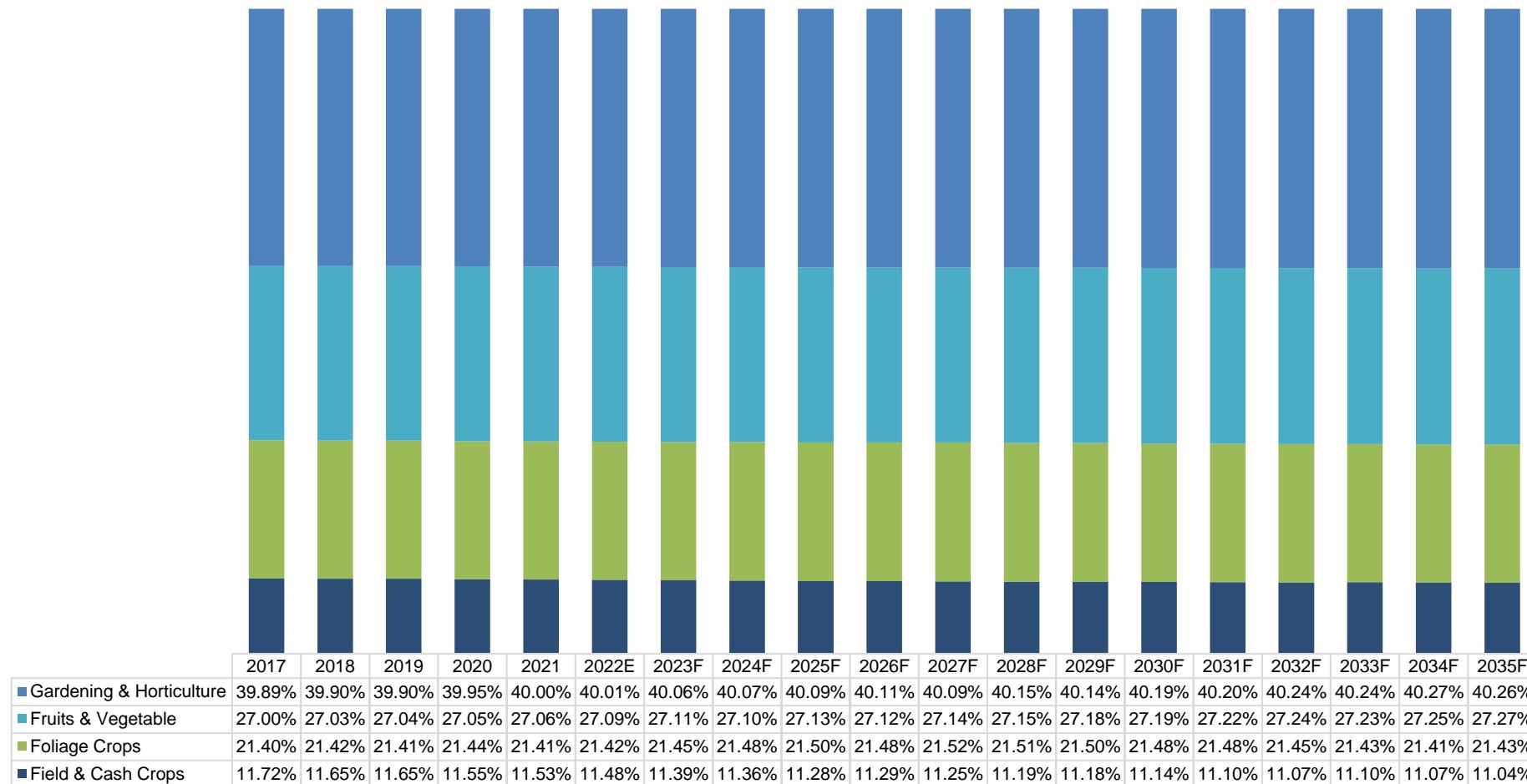


Table 8: Mono Potassium Phosphate Water Soluble Fertilizer Market Share, By End Use, By Value (USD Million) & By Volume (Kilotonnes), 2017-2035F

By End Use		2017	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2035F
Gardening & Horticulture	Value	11.79	15.54	16.60	17.92	19.38	20.92	22.76	24.70	26.85	28.79	30.89	41.97
	Volume	7.23	9.54	10.19	10.95	11.77	12.70	13.76	14.90	16.15	17.20	18.34	24.61
Foliage Crops	Value	7.15	9.41	10.05	10.84	11.73	12.67	13.77	14.94	16.22	17.37	18.59	25.12
	Volume	3.88	5.10	5.46	5.86	6.31	6.81	7.37	8.00	8.65	9.21	9.80	13.10
Fruits & Vegetable	Value	8.30	10.93	11.69	12.60	13.61	14.70	15.98	17.33	18.83	20.20	21.66	29.40
	Volume	4.89	6.45	6.90	7.41	7.96	8.59	9.30	10.08	10.92	11.65	12.41	16.67
Field & Cash Crops	Value	3.12	4.04	4.28	4.57	4.90	5.25	5.70	6.13	6.62	7.06	7.54	10.19
	Volume	2.12	2.75	2.92	3.11	3.34	3.57	3.87	4.18	4.50	4.79	5.08	6.75
Total	Value	30.36	39.92	42.63	45.92	49.62	53.53	58.20	63.10	68.52	73.43	78.69	106.68
	Volume	18.12	23.84	25.48	27.32	29.36	31.67	34.31	37.15	40.23	42.85	45.63	61.14

Mono Potassium Phosphate Water Soluble Fertilizer Market Share, By End Use

Figure 27: Mono Potassium Phosphate Water Soluble Fertilizer Market Share, By End Use, By Volume, 2017-2035F



West India WSF Market Outlook (2022-2035)



West India Water Soluble Fertilizer Market Size, By Value



Figure 28: West India Water Soluble Fertilizer Market Size, By Value (USD Million), 2017-2035F

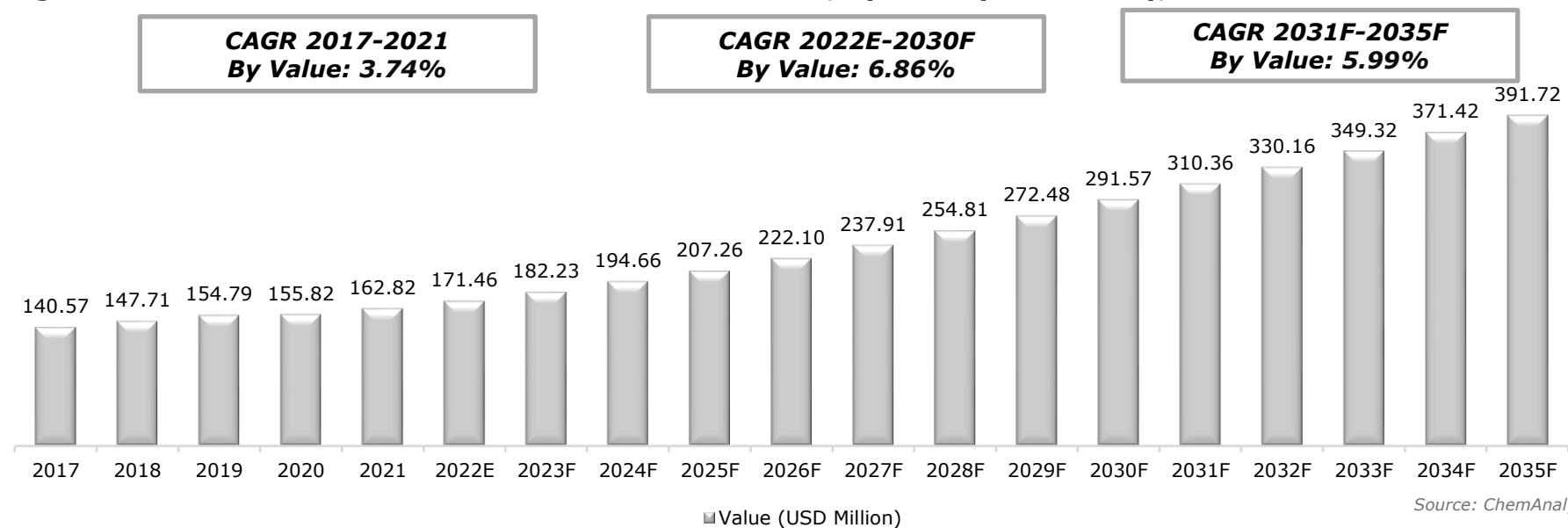
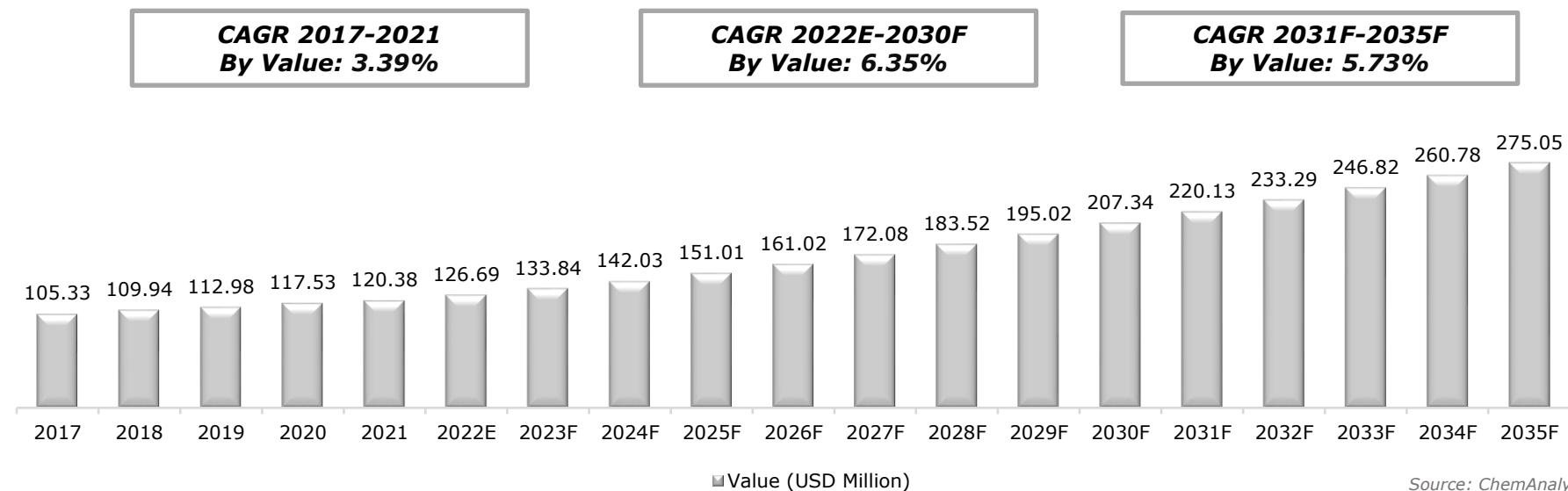


Figure 29: West India Water Soluble Fertilizer Market Size, By Volume (Kilo Tonnes), 2017-2035F



West India Water Soluble Fertilizer Market Share, By Type



Table 9: West India Water Soluble Fertilizer Market Share, By Type, By Value (USD Million) & By Volume (Kilotonnes), 2017-2035F

By Type		2017	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2035F
Calcium Nitrate (15.5-0-0-19)	Value	48.85	57.00	60.32	63.96	68.48	72.81	77.96	83.43	89.31	95.48	102.08	136.59
	Volume	40.83	46.97	49.65	52.35	55.66	59.11	62.98	67.25	71.68	76.15	80.90	106.94
Potassium Nitrate (13-0-45)	Value	21.62	23.51	24.84	26.55	28.46	30.43	32.76	35.28	37.94	40.65	43.62	58.84
	Volume	14.61	15.57	16.44	17.48	18.62	19.89	21.32	22.92	24.56	26.15	27.89	37.16
Potassium Sulphate (0-0-50)	Value	13.45	13.30	13.73	14.49	15.26	16.02	16.92	17.89	18.88	20.27	21.75	29.69
	Volume	7.94	7.39	7.58	7.92	8.25	8.61	9.00	9.45	9.87	10.55	11.26	15.27
Mono Ammonium Phosphate (12-61-0)	Value	43.42	51.35	53.68	56.86	60.40	64.19	68.54	73.16	78.05	83.27	88.93	118.81
	Volume	31.43	36.70	38.34	40.35	42.58	45.18	48.00	51.11	54.29	57.55	61.06	80.54
Mono Potassium Phosphate (0-52-34)	Value	13.23	17.65	18.88	20.37	22.05	23.81	25.92	28.14	30.63	32.81	35.19	47.79
	Volume	10.52	13.75	14.68	15.74	16.92	18.23	19.73	21.36	23.12	24.61	26.23	35.15
Total	Value	140.57	162.82	171.46	182.23	194.66	207.26	222.10	237.91	254.81	272.48	291.57	391.72
	Volume	105.33	120.38	126.69	133.84	142.03	151.01	161.02	172.08	183.52	195.02	207.34	275.05

West India Water Soluble Fertilizer Market Share, By End Use

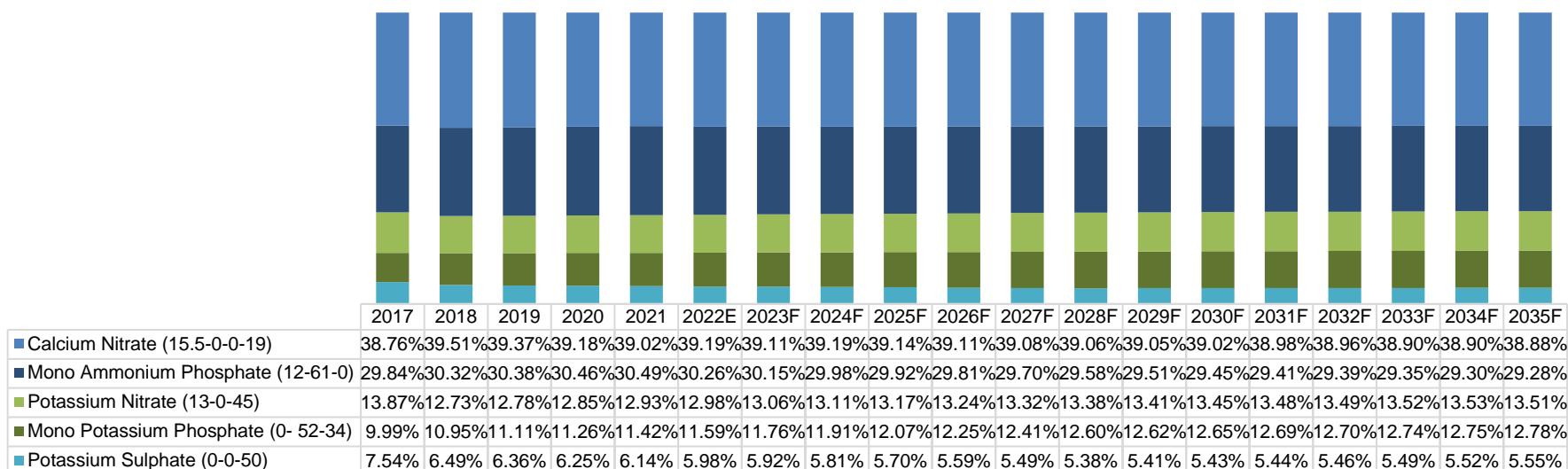


Table 10: West India Water Soluble Fertilizer Market Share, By End Use, By Value (USD Million) & By Volume (Kilotonnes), 2017-2035F

By Type		2017	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2035F
Gardening & Horticulture	Value	56.18	65.21	68.69	73.07	78.12	83.24	89.24	95.66	102.53	109.70	117.47	158.10
	Volume	46.63	53.39	56.20	59.41	63.03	67.06	71.53	76.41	81.56	86.65	92.18	122.37
Foliage Crops	Value	33.96	39.37	41.49	44.14	47.20	50.30	53.88	57.79	61.87	66.13	70.70	94.72
	Volume	21.96	25.12	26.47	27.99	29.74	31.65	33.73	36.10	38.48	40.88	43.42	57.40
Fruits & Vegetable	Value	38.33	44.46	46.89	49.88	53.26	56.77	60.81	65.19	69.84	74.77	80.03	107.61
	Volume	25.56	29.29	30.85	32.62	34.60	36.83	39.26	41.99	44.80	47.66	50.69	67.47
Field & Cash Crops	Value	12.09	13.77	14.39	15.14	16.08	16.95	18.17	19.27	20.56	21.88	23.35	31.30
	Volume	11.18	12.58	13.18	13.83	14.66	15.46	16.50	17.59	18.68	19.83	21.04	27.81
Total	Value	140.57	162.82	171.46	182.23	194.66	207.26	222.10	237.91	254.81	272.48	291.57	391.72
	Volume	105.33	120.38	126.69	133.84	142.03	151.01	161.02	172.08	183.52	195.02	207.34	275.05

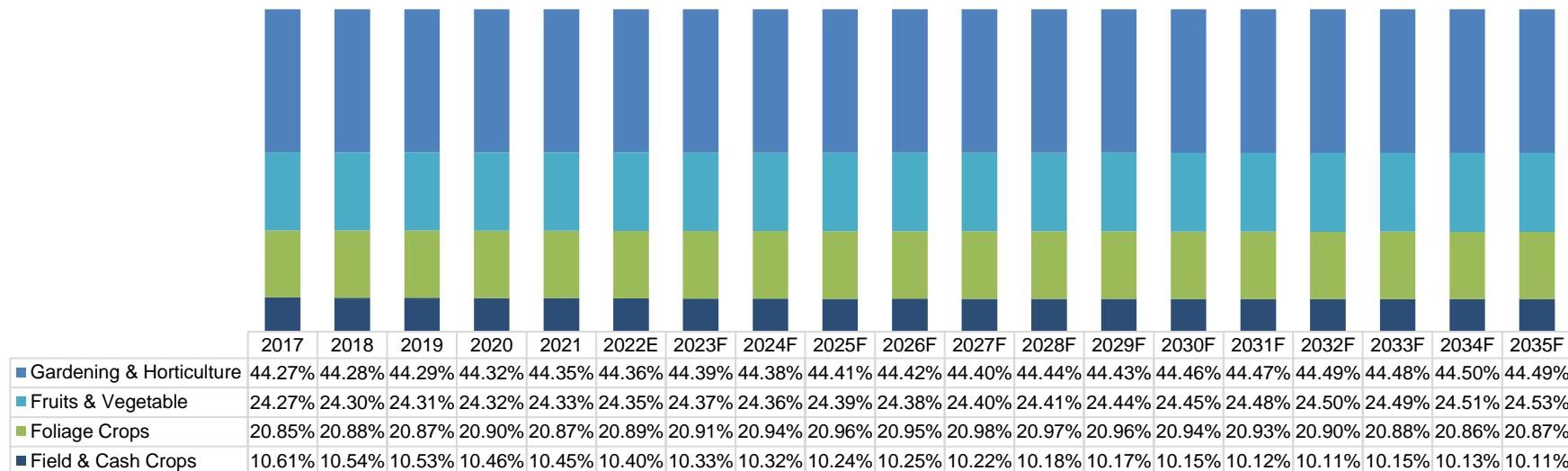
West India Water Soluble Fertilizer Market Share, By Type

Figure 30: West India Water Soluble Fertilizer Market Share, By Type, By Volume, 2017-2035F



Source: ChemAnalyst

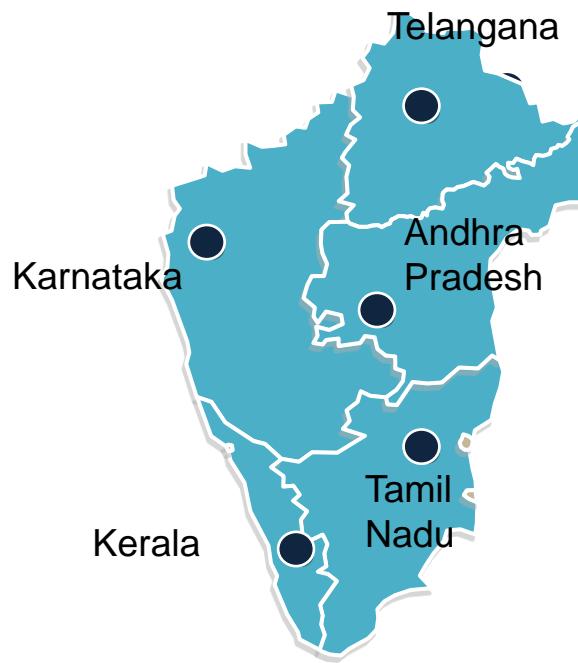
Figure 31: West India Water Soluble Fertilizer Market Share, By End Use, By Volume, 2017-2035F



Source: ChemAnalyst

- The primary fertiliser-consuming states in the west zone include Gujarat, Madhya Pradesh, Chhattisgarh, Maharashtra, and Rajasthan. These five states together account for 31% of the country's total fertiliser use. Goa, Daman and Diu, and Dadra Nagar Haveli have a tiny share of the zone (0.03 per cent). Maharashtra is ranked third in terms of overall consumption, accounting for 12% of total consumption in India.
- Except in Rajasthan and Madhya Pradesh, soil fertility in the west zone is low to medium in terms of N and P and medium to high in terms of K, with an NPK ratio that is more or less balanced. The zone's overall NPK utilisation ratio is 7.3:4:1.
- Gardening & horticulture followed by Fruits and Vegetables are expected to lead the demand share for water soluble fertilizers in terms of consumption, whereas Cash and Field Crops is also likely to remain as a prominent end user as compared to other regions e.g. cotton, groundnut, sugarcane.
- Drip irrigation is now required for sugar cane cultivation on more than 3.05 lakh hectares in Maharashtra, according to the Maharashtrian government. Farmers who choose drip irrigation will be granted loans with a 2% interest rate and a maximum loan amount of Rs85,400 per acre. However, as the need for drip irrigation systems grows, so will the demand for water soluble fertilisers. In 2021-2022, Maharashtra's GDP is predicted to grow by 12.1%, with agriculture and related sectors growing by 4.4 percent.
- Similarly, the Gujarat Green Revolution Company (GGRC), on behalf of the Government of Gujarat and the Government of India, has been implementing the Micro Irrigation Scheme in Gujarat in a uniform manner since May 2005. Since May 2005, the Gujarat Green Revolution Company (GGRC) has been implementing the Micro Irrigation Scheme in Gujarat in a uniform manner on behalf of the Government of Gujarat and the Government of India, which is one of the key drivers for water soluble fertiliser consumption in west India.

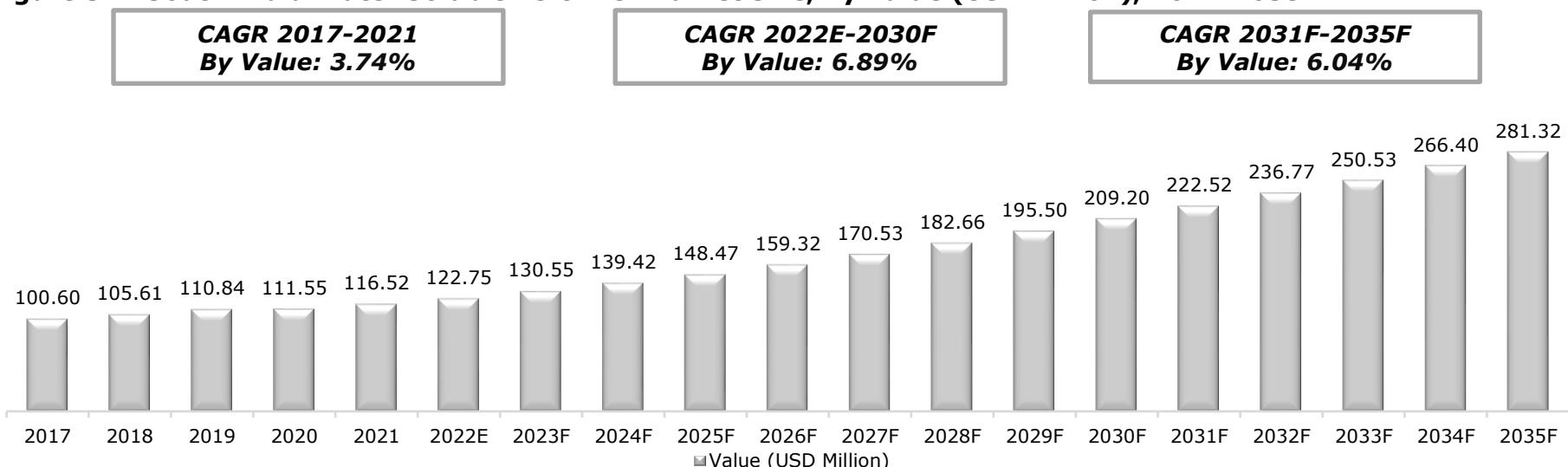
South India WSF Market Outlook (2022-2035)



South India Water Soluble Fertilizer Market Size, By Value

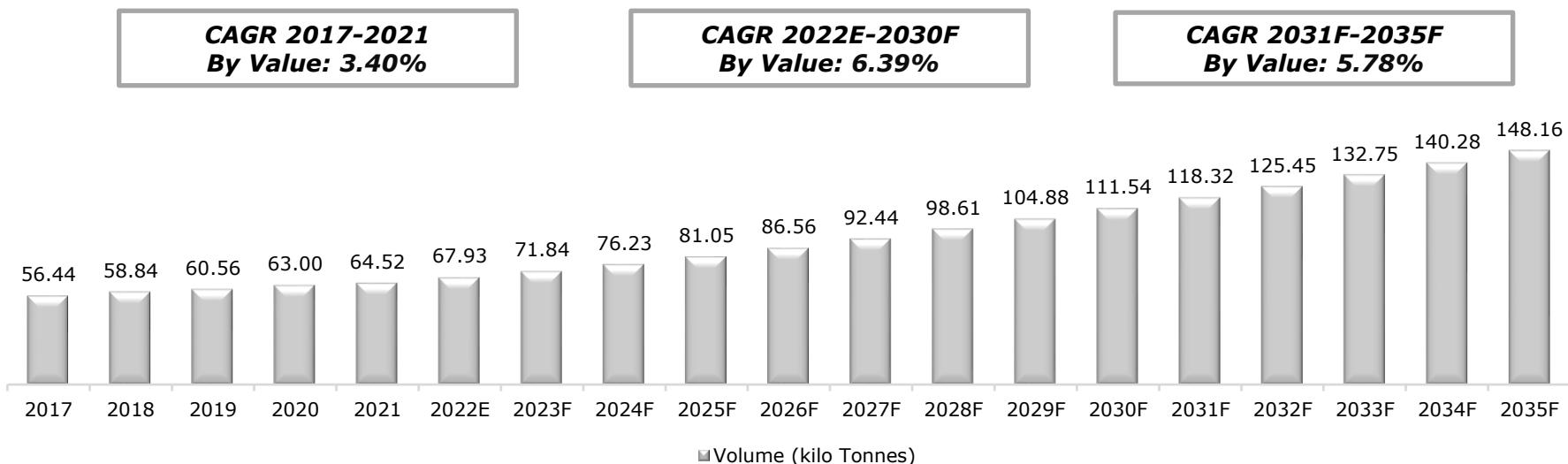


Figure 32: South India Water Soluble Fertilizer Market Size, By Value (USD Million), 2017-2035F



Source: ChemAnalyst

Figure 33: South India Water Soluble Fertilizer Market Size, By Volume (Kilo Tonnes), 2017-2035F



Source: ChemAnalyst

South India Water Soluble Fertilizer Market Share, By Type



Table 11: South India Water Soluble Fertilizer Market Share, By Type, By Value (USD Million) & By Volume (Kilotonnes), 2017-2035F

By Type		2017	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2035F
Calcium Nitrate (15.5-0-0-19)	Value	33.73	39.37	41.69	44.23	47.35	50.35	53.98	57.73	61.79	66.12	70.69	94.66
	Volume	22.56	25.96	27.45	28.97	30.80	32.71	34.91	37.25	39.72	42.24	44.88	59.41
Potassium Nitrate (13-0-45)	Value	16.05	17.49	18.49	19.77	21.18	22.64	24.41	26.26	28.24	30.28	32.49	43.86
	Volume	7.51	7.97	8.43	8.97	9.56	10.21	10.97	11.79	12.63	13.47	14.37	19.17
Potassium Sulphate (0-0-50)	Value	8.80	8.56	8.83	9.31	9.79	10.26	10.83	11.43	12.04	12.94	13.89	19.02
	Volume	4.72	4.49	4.62	4.84	5.05	5.28	5.55	5.83	6.11	6.53	6.97	9.44
Mono Ammonium Phosphate (12-61-0)	Value	30.46	36.04	37.68	39.94	42.41	45.08	48.19	51.40	54.83	58.55	62.53	83.61
	Volume	17.18	20.06	20.97	22.10	23.32	24.75	26.33	28.02	29.77	31.59	33.53	44.29
Mono Potassium Phosphate (0-52-34)	Value	11.56	15.05	16.07	17.31	18.70	20.15	21.91	23.72	25.75	27.60	29.60	40.17
	Volume	4.46	6.03	6.46	6.95	7.49	8.10	8.80	9.55	10.37	11.05	11.79	15.85
Total	Value	100.60	116.52	122.75	130.55	139.42	148.47	159.32	170.53	182.66	195.50	209.20	281.32
	Volume	56.44	64.52	67.93	71.84	76.23	81.05	86.56	92.44	98.61	104.88	111.54	148.16

South India Water Soluble Fertilizer Market Share, By End Use



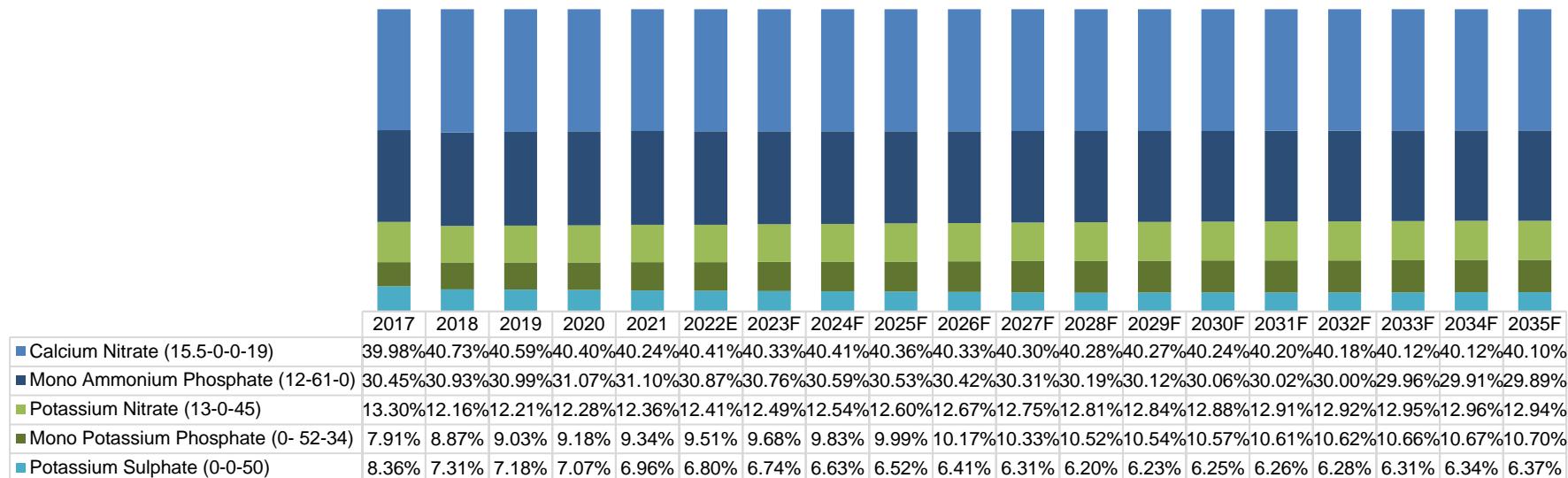
Table 12: South India Water Soluble Fertilizer Market Share, By End Use, By Value (USD Million) & By Volume (Kilotonnes), 2017-2035F

By Type		2017	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2035F
Gardening & Horticulture	Value	41.25	47.87	50.44	53.70	57.39	61.16	65.65	70.33	75.38	80.72	86.44	116.44
	Volume	23.58	27.01	28.45	30.11	31.94	33.98	36.30	38.75	41.38	44.00	46.82	62.24
Foliage Crops	Value	18.40	21.33	22.50	23.96	25.63	27.32	29.30	31.41	33.63	35.97	38.45	51.51
	Volume	9.06	10.37	10.93	11.57	12.30	13.10	13.98	14.96	15.95	16.95	18.00	23.81
Fruits & Vegetable	Value	32.81	38.04	40.13	42.70	45.59	48.59	52.13	55.83	59.82	64.09	68.60	92.30
	Volume	19.28	22.08	23.26	24.61	26.11	27.78	29.66	31.70	33.82	36.01	38.30	51.00
Field & Cash Crops	Value	8.15	9.27	9.69	10.20	10.82	11.40	12.24	12.96	13.83	14.72	15.71	21.07
	Volume	4.51	5.06	5.29	5.55	5.88	6.18	6.61	7.03	7.47	7.93	8.41	11.11
Total	Value	100.60	116.52	122.75	130.55	139.42	148.47	159.32	170.53	182.66	195.50	209.20	281.32
	Volume	56.44	64.52	67.93	71.84	76.23	81.05	86.56	92.44	98.61	104.88	111.54	148.16

Source: ChemAnalyst

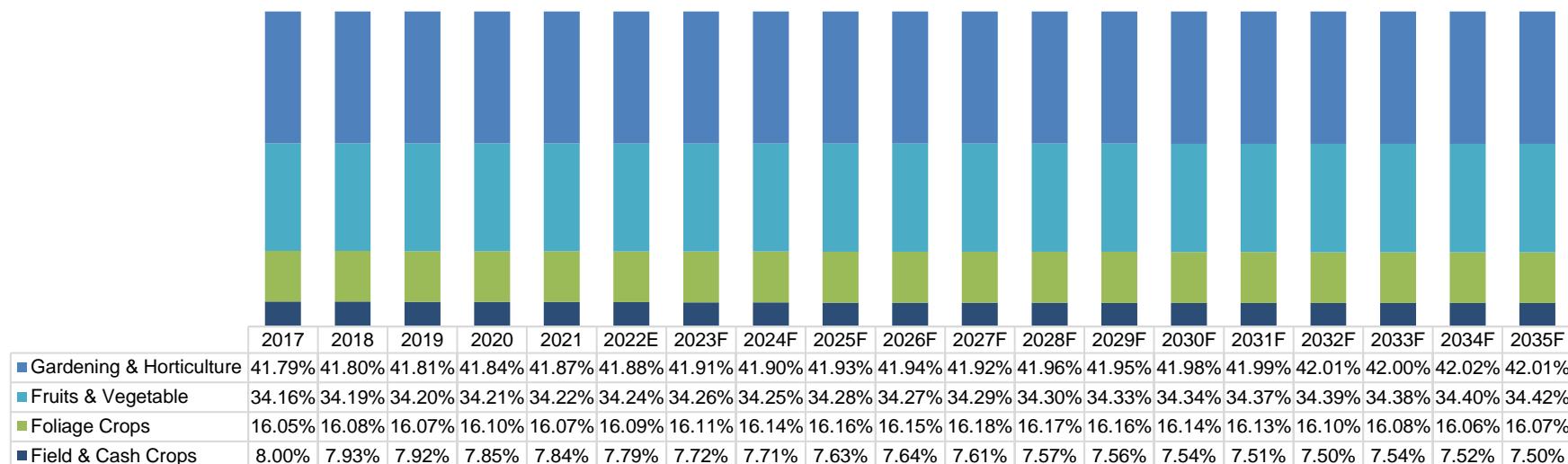
South India Water Soluble Fertilizer Market Share, By Type

Figure 34: South India Water Soluble Fertilizer Market Share, By Type, By Volume, 2017-2035F



Source: ChemAnalyst

Figure 35: South India Water Soluble Fertilizer Market Share, By End Use, By Volume, 2017-2035F



Source: ChemAnalyst

- Andhra Pradesh, Tamil Nadu, Karnataka, and Kerala are the most fertiliser-consuming states in the south zone. These four states account for roughly 26% of the country's total fertiliser use.
- Andhra Pradesh is in second place, accounting for 12% of total consumption in India, whereas Puducherry and the Andaman & Nicobar Islands account for only 0.08 percent. In the south zone, soil fertility is low to medium in terms of N and P, and medium to high in terms of K. The zone's NPK utilisation ratio is 3.9:2.2:1.
- Gardening & horticulture followed by Fruits and Vegetables are expected to lead the demand share for water soluble fertilizers in terms of consumption, whereas Foliage Crops is also likely to contribute to a sound extent to overall market e.g. banana, palm, ornamental plants, etc.
- The agriculture department has issued work order to bring 3,768 acres of farmland under drip irrigation at a cost of 11.49 crore in the 2021-22 financial year in Coimbatore.
- The agricultural department had continued with the previous system of providing 90 percent subsidy for drip/micro irrigation systems for farmers with landholding sizes of up to two hectares and 45 percent subsidy for farmers with landholding sizes of 2 to 5 hectares.
- The share of agriculture to Andhra Pradesh's gross value added (GVA) is 37.27 per cent, almost double of the national level of 19.7 per cent and the highest after bifurcation of the State. Whereas Tamil Nadu's agriculture contribution is to GDP is 13.05%.

North India WSF Market Outlook (2022-2035)



North India Water Soluble Fertilizer Market Size, By Value



Figure 36: North India Water Soluble Fertilizer Market Size, By Value (USD Million), 2017-2035F

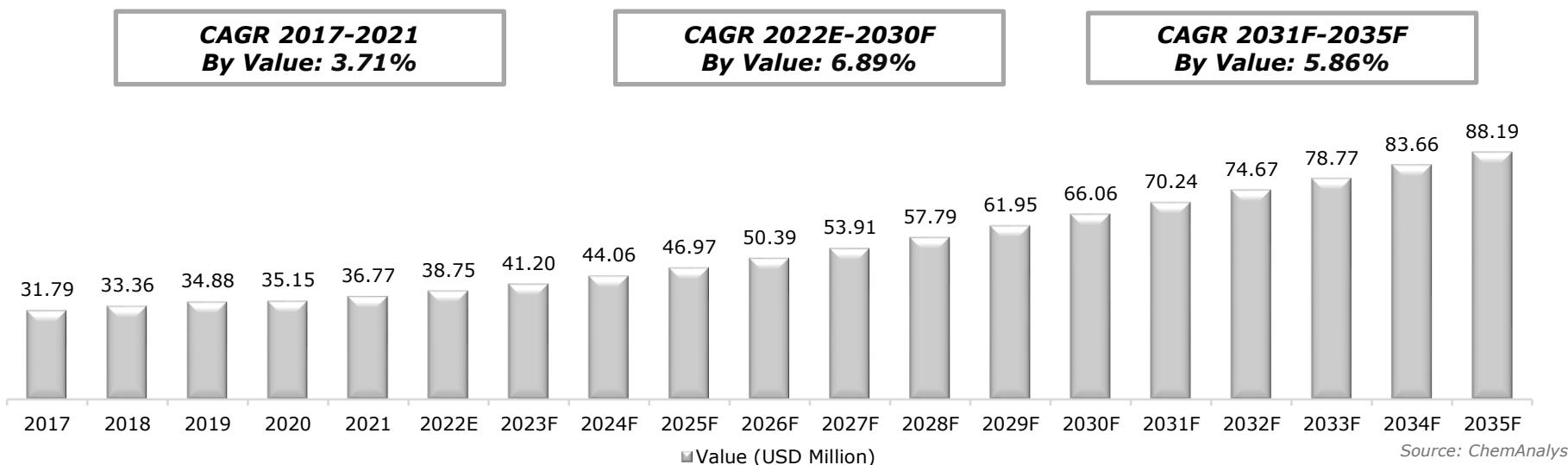
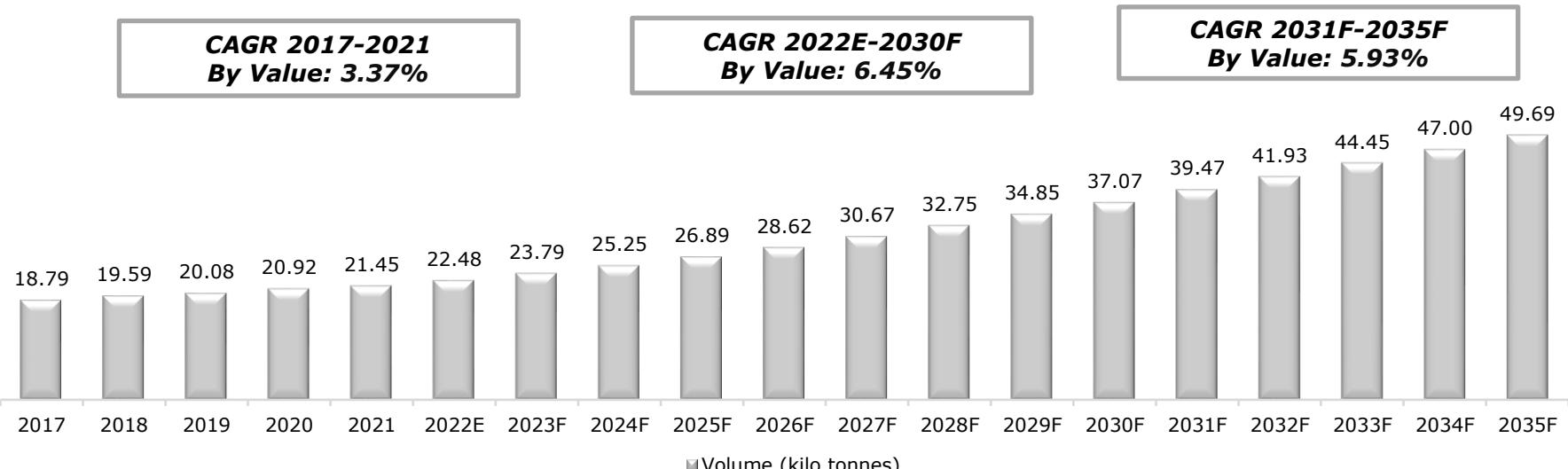


Figure 37: North India Water Soluble Fertilizer Market Size, By Volume (kilo Tonnes), 2017-2035F



North India Water Soluble Fertilizer Market Share, By Type



Table 13: North India Water Soluble Fertilizer Market Share, By Type, By Value (USD Million) & By Volume (Kilotonnes), 2017-2035F

By Type		2017	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2035F
Calcium Nitrate (15.5-0-0-19)	Value	10.74	12.52	13.26	14.07	15.08	16.06	17.21	18.39	19.71	21.12	22.50	29.92
	Volume	7.21	8.28	8.72	9.20	9.79	10.41	11.07	11.86	12.65	13.46	14.31	19.11
Potassium Nitrate (13-0-45)	Value	5.17	5.64	5.96	6.37	6.84	7.32	7.89	8.48	9.13	9.80	10.48	14.04
	Volume	2.59	2.75	2.89	3.08	3.28	3.51	3.76	4.05	4.35	4.64	4.94	6.66
Potassium Sulphate (0-0-50)	Value	2.65	2.55	2.62	2.76	2.91	3.05	3.22	3.39	3.57	3.84	4.11	5.59
	Volume	1.48	1.39	1.42	1.49	1.55	1.62	1.69	1.78	1.87	2.00	2.14	2.92
Mono Ammonium Phosphate (12-61-0)	Value	9.59	11.33	11.85	12.56	13.35	14.21	15.19	16.19	17.29	18.49	19.67	26.11
	Volume	5.66	6.60	6.86	7.24	7.64	8.12	8.61	9.19	9.78	10.38	11.02	14.68
Mono Potassium Phosphate (0-52-34)	Value	3.63	4.72	5.05	5.43	5.88	6.34	6.89	7.46	8.11	8.70	9.30	12.53
	Volume	1.86	2.44	2.59	2.78	2.99	3.23	3.49	3.78	4.10	4.37	4.66	6.32
Total	Value	31.79	36.77	38.75	41.20	44.06	46.97	50.39	53.91	57.79	61.95	66.06	88.19
	Volume	18.79	21.45	22.48	23.79	25.25	26.89	28.62	30.67	32.75	34.85	37.07	49.69

Source: ChemAnalyst

North India Water Soluble Fertilizer Market Share, By End Use



Table 14: North India Water Soluble Fertilizer Market Share, By End Use, By Value (USD Million) & By Volume (Kilotonnes), 2017-2035F

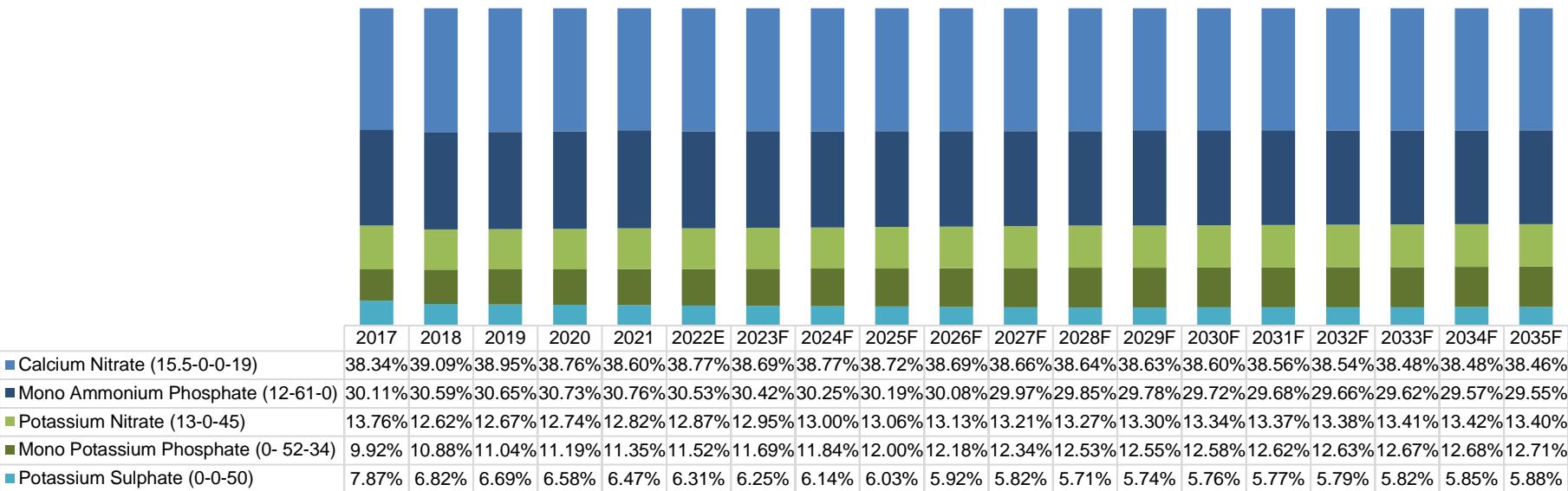
By Type		2017	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2035F
Gardening & Horticulture	Value	8.11	9.41	9.92	10.57	11.31	12.08	12.97	13.89	14.91	15.99	17.07	22.85
	Volume	5.20	5.95	6.24	6.61	7.01	7.47	7.96	8.52	9.11	9.70	10.32	13.85
Foliage Crops	Value	13.43	15.54	16.39	17.43	18.65	19.90	21.34	22.85	24.49	26.24	27.97	37.28
	Volume	7.34	8.39	8.79	9.31	9.89	10.53	11.21	12.02	12.83	13.66	14.52	19.42
Fruits & Vegetable	Value	5.60	6.49	6.86	7.30	7.80	8.33	8.93	9.57	10.26	11.02	11.76	15.72
	Volume	3.05	3.49	3.66	3.88	4.12	4.39	4.67	5.01	5.36	5.71	6.08	8.19
Field & Cash Crops	Value	4.64	5.32	5.58	5.90	6.29	6.67	7.15	7.61	8.14	8.70	9.26	12.35
	Volume	3.20	3.62	3.79	3.99	4.23	4.48	4.78	5.11	5.44	5.79	6.15	8.22
Total	Value	31.79	36.77	38.75	41.20	44.06	46.97	50.39	53.91	57.79	61.95	66.06	88.19
	Volume	18.79	21.45	22.48	23.79	25.25	26.89	28.62	30.67	32.75	34.85	37.07	49.69

Source: ChemAnalyst

North India Water Soluble Fertilizer Market Share, By Type

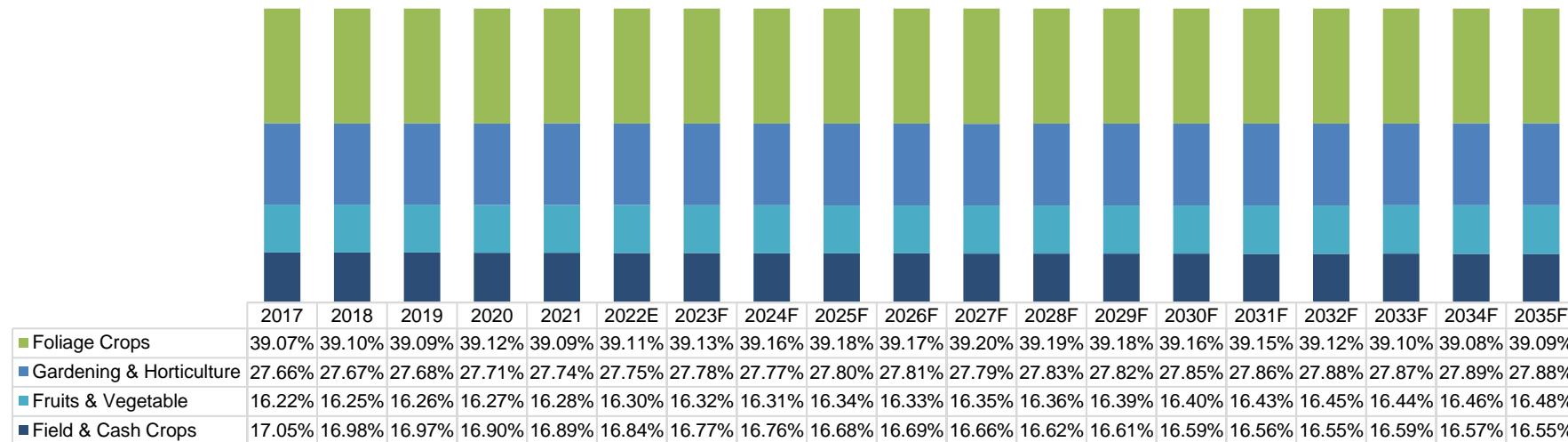


Figure 38: North India Water Soluble Fertilizer Market Share, By Type, By Volume, 2017-2035F



Source: ChemAnalyst

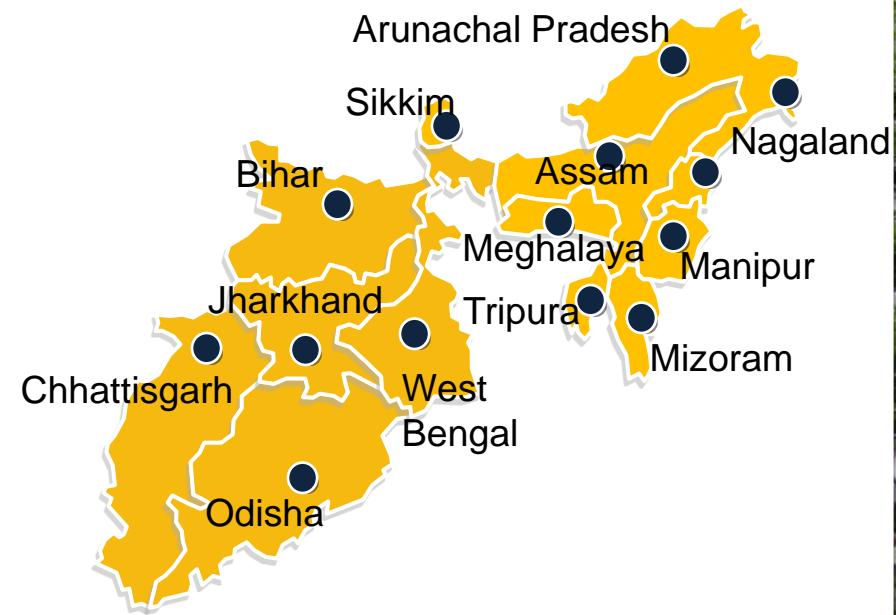
Figure 39: North India Water Soluble Fertilizer Market Share, By End Use, By Volume, 2017-2035F



Source: ChemAnalyst

- The largest fertiliser-consuming states in the north zone are Haryana, Punjab, Uttar Pradesh (UP), and Uttarakhand. These four states account for roughly 28% of the country's overall fertiliser use. Himachal Pradesh and Jammu & Kashmir, on the other hand, account for less than 1% of the total. UP is the most consumed state in India, accounting for 15% of total consumption.
- Haryana (220 kg) and Punjab (243 kg) have the highest per-hectare consumption, while Uttar Pradesh (168 kg) and Uttarakhand (142 kg) have the lowest. In the north zone, soil fertility is low to medium in terms of nitrogen and phosphate, and medium to high in terms of potash. The use of nitrogen is extensive. Use of N is high and P medium and K low in the north zone—the ratio of NPK use being 20.4: 6.8: 1.
- Foliage followed by Gardening and Horticulture are expected to lead the demand share for water soluble fertilizers in terms of consumption, whereas Cash and Field Crops is also likely to remain as a significant contributor to regional market as well as exports e.g. wheat, sugarcane, flora, exotic fruits , etc.
- Interventions in horticulture in India, have led to an increase in per capita availability of fruits from 158 gm/person/day in 2007- 08 to 209.8 gm/person/day in 2019-20.
- According to a survey, at least 1.80 lakh acres of land in Haryana's Sonepat, Rohtak, Jhajjar, and Charkhi Dadri districts are either saline or waterlogged, which is one of the major concerns for growing crops in the region. The survey will also be conducted in Nuh, Bhiwani, Hisar, Fatehabad, and Sirsa districts in the next phase.

East India WSF Market Outlook (2022-2035)



East India Water Soluble Fertilizer Market Size, By Value



Figure 40: East India Water Soluble Fertilizer Market Size, By Value (USD Million), 2017-2035F

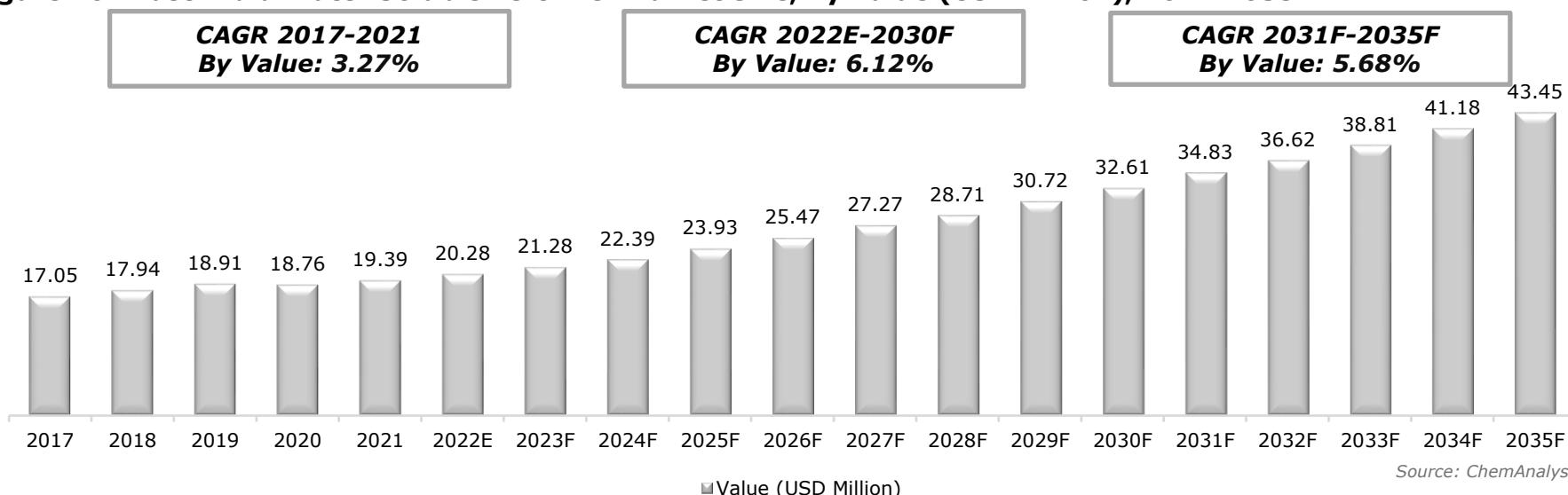
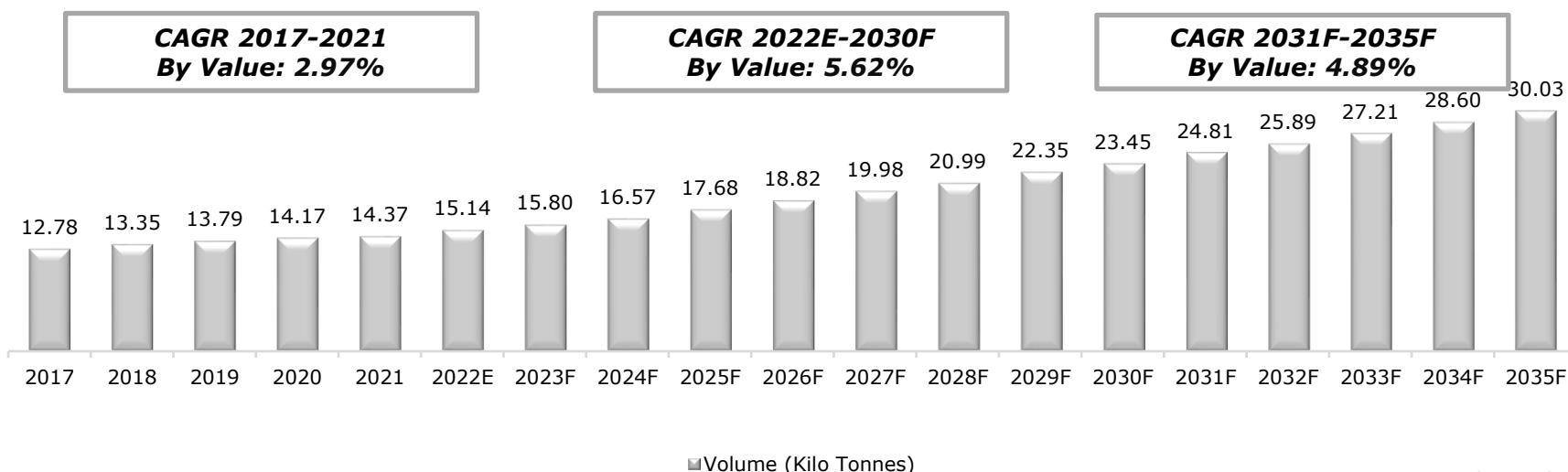


Figure 41: East India Water Soluble Fertilizer Market Size, By Volume (USD Million), 2017-2035F



East India Water Soluble Fertilizer Market Share, By Type



Table 15: East India Water Soluble Fertilizer Market Share, By Type, By Value (USD Million) & By Volume (Kilotonnes), 2017-2035F

By Type		2017	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2035F
Calcium Nitrate (15.5-0-0-19)	Value	5.65	6.47	6.80	7.12	7.51	8.02	8.52	9.12	9.59	10.26	10.88	14.44
	Volume	4.99	5.65	5.98	6.22	6.54	6.97	7.41	7.86	8.26	8.79	9.21	11.75
Potassium Nitrate (13-0-45)	Value	2.70	2.89	3.03	3.20	3.38	3.62	3.87	4.17	4.41	4.73	5.03	6.73
	Volume	1.81	1.91	2.02	2.12	2.23	2.39	2.55	2.73	2.88	3.07	3.23	4.16
Potassium Sulphate (0-0-50)	Value	1.55	1.49	1.52	1.59	1.65	1.73	1.82	1.92	1.99	2.14	2.27	3.08
	Volume	0.91	0.82	0.84	0.87	0.89	0.93	0.97	1.01	1.04	1.12	1.17	1.54
Mono Ammonium Phosphate (12-61-0)	Value	5.21	6.05	6.28	6.57	6.87	7.33	7.77	8.29	8.70	9.28	9.83	13.03
	Volume	3.80	4.37	4.57	4.74	4.95	5.27	5.59	5.91	6.19	6.57	6.88	8.76
Mono Potassium Phosphate (0-52-34)	Value	1.95	2.49	2.64	2.81	2.99	3.23	3.48	3.77	4.03	4.32	4.59	6.17
	Volume	1.27	1.63	1.74	1.85	1.96	2.12	2.29	2.47	2.63	2.81	2.95	3.82
Total	Value	17.05	19.39	20.28	21.28	22.39	23.93	25.47	27.27	28.71	30.72	32.61	43.45
	Volume	12.78	14.37	15.14	15.80	16.57	17.68	18.82	19.98	20.99	22.35	23.45	30.03

Source: ChemAnalyst

East India Water Soluble Fertilizer Market Share, By End Use



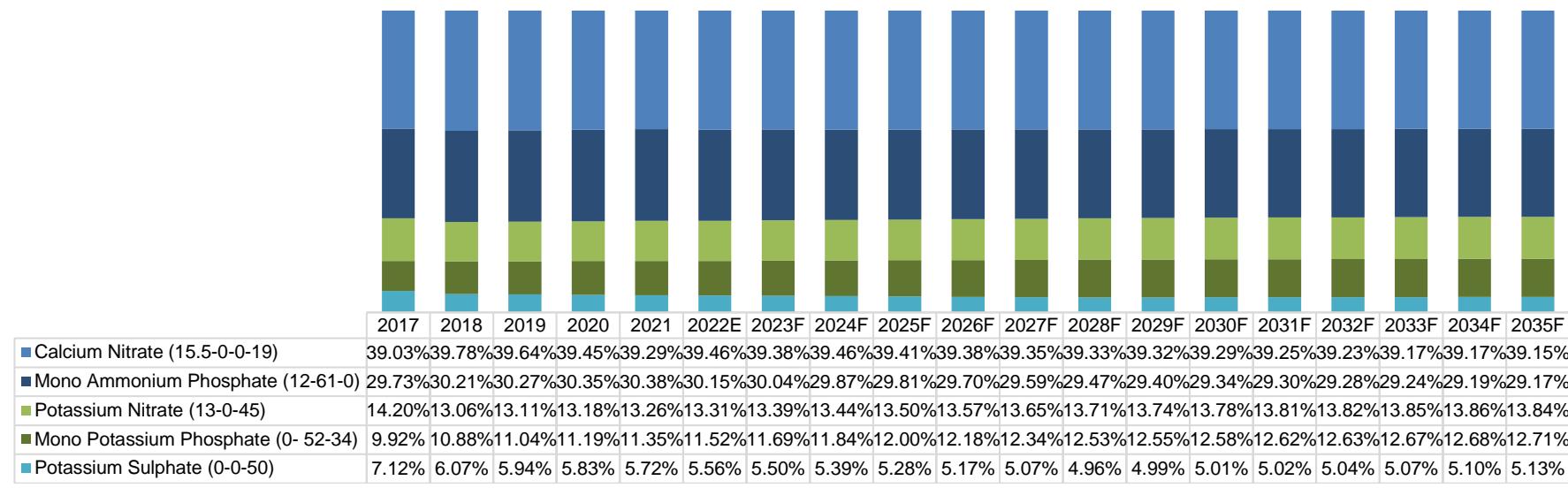
Table 16: East India Water Soluble Fertilizer Market Share, By End Use, By Value (USD Million) & By Volume (Kilotonnes), 2017-2035F

By Type		2017	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2035F
Gardening & Horticulture	Value	2.17	2.49	2.60	2.74	2.89	3.10	3.30	3.54	3.74	4.01	4.26	5.71
	Volume	1.92	2.17	2.29	2.39	2.51	2.68	2.86	3.03	3.19	3.39	3.57	4.58
Foliage Crops	Value	4.27	4.86	5.08	5.34	5.62	6.02	6.40	6.86	7.22	7.72	8.19	10.89
	Volume	2.79	3.14	3.31	3.46	3.63	3.88	4.13	4.39	4.61	4.91	5.14	6.56
Fruits & Vegetable	Value	4.58	5.22	5.46	5.74	6.03	6.46	6.87	7.36	7.75	8.30	8.82	11.76
	Volume	3.15	3.55	3.74	3.90	4.09	4.37	4.65	4.95	5.20	5.54	5.81	7.47
Field & Cash Crops	Value	6.03	6.83	7.13	7.46	7.84	8.36	8.90	9.51	10.00	10.69	11.34	15.10
	Volume	4.92	5.51	5.80	6.04	6.33	6.74	7.18	7.62	8.00	8.51	8.92	11.42
Total	Value	17.05	19.39	20.28	21.28	22.39	23.93	25.47	27.27	28.71	30.72	32.61	43.45
	Volume	12.78	14.37	15.14	15.80	16.57	17.68	18.82	19.98	20.99	22.35	23.45	30.03

Source: ChemAnalyst

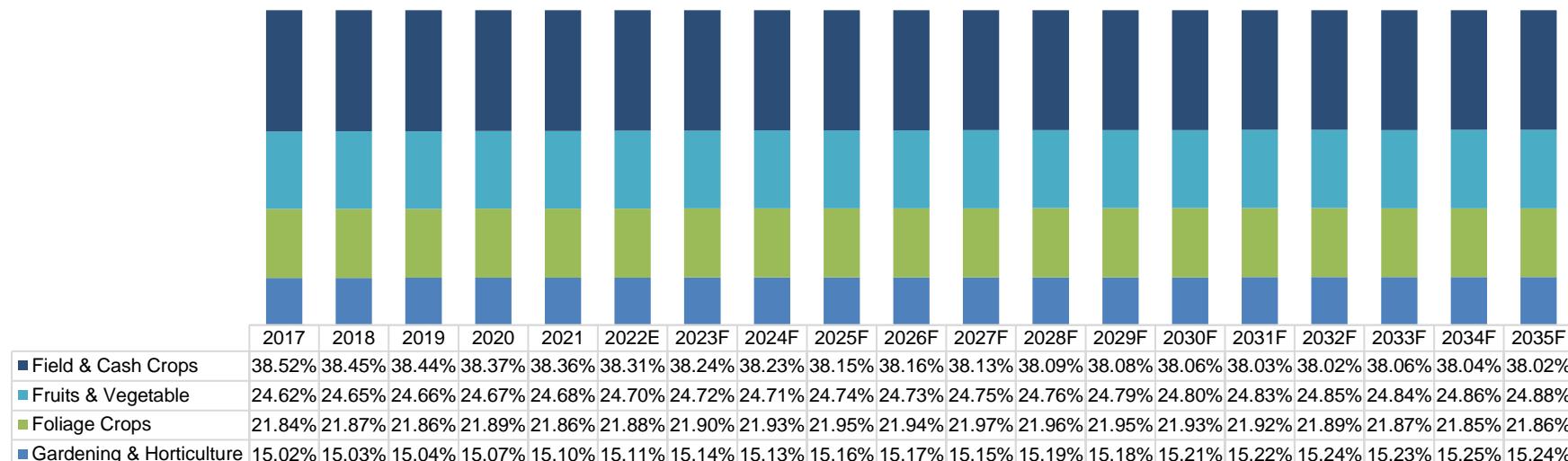
East India Water Soluble Fertilizer Market Share, By Type

Figure 42: East India Water Soluble Fertilizer Market Share, By Type, By Volume, 2017-2035F



Source: ChemAnalyst

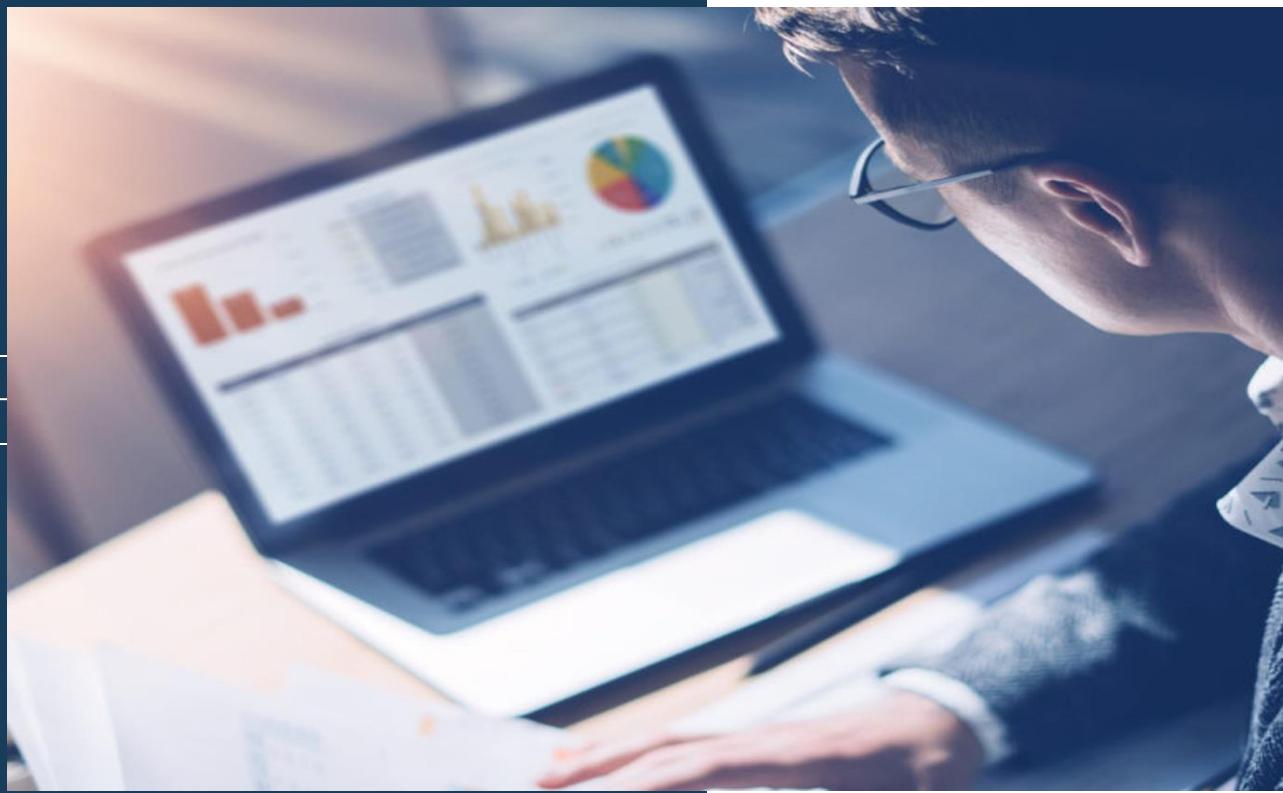
Figure 43: East India Water Soluble Fertilizer Market Share, By End Use, By Volume, 2017-2035F



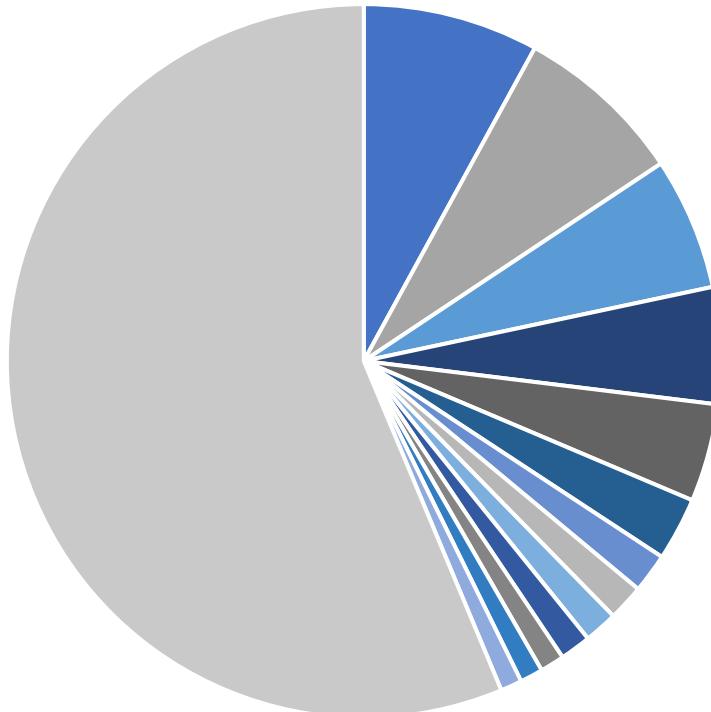
Source: ChemAnalyst

- Bihar, West Bengal, Odisha, Assam, Chhattisgarh and Jharkhand are the most fertiliser-consuming states in the east zone, accounting for 14% of total fertiliser nutrient consumption in the country. Other states in the zone, such as Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura, account for under 0.1 percent of the country's total fertilizer use.
- The amount of fertiliser used per hectare varies greatly, ranging from 2.4 kg in Arunachal Pradesh or 3.2 kg in Nagaland to 192 kg in Bihar and 169 kg in West Bengal. In the east zone, soil fertility is low to medium in terms of nitrogen and phosphate, and medium in terms of potash. NPK use ratio is around 4.2:1.8:1 in the east zone.
- Field & Cash Crops e.g. rice, jute, etc. followed by Fruits and Vegetables are expected to lead the demand share for water soluble fertilizers in terms of consumption, whereas Foliage Crops is also likely to emerge as a prominent contributor to regional market growth.
- The total geographical area of the State is 78.483-lakh hectare. Gross cropped area of the State is 41, 59,977 hectare out of which net area shown is 28, 10,597 hectare that is 35.81% of the geographical area of Assam. The economy of Assam is predominantly agricultural based, as about 85% of the populations live on agricultural activities for their livelihood and 15 % is dependent on allied services.

Competition Landscape



India Water Soluble Fertilizer Market Share Analysis, By Company, 2021



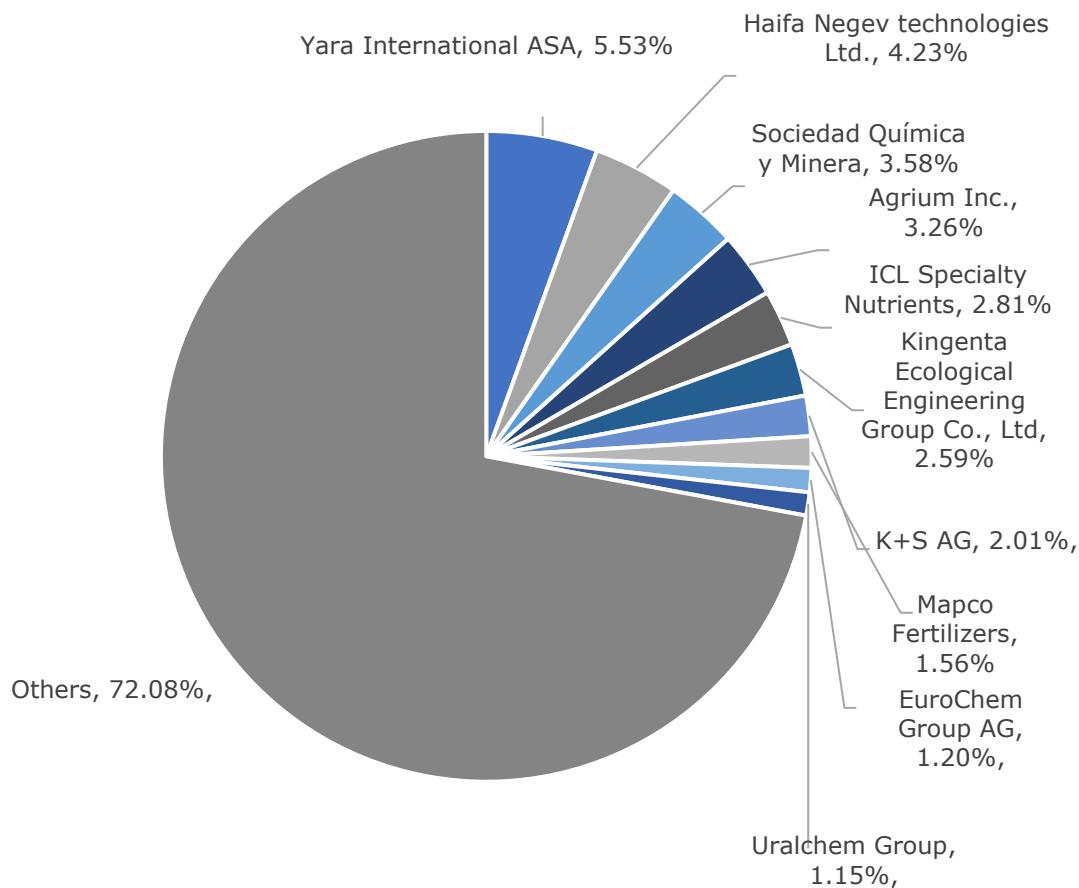
- Coromandel International Corporation
- Yara International Chemicals company
- Zuar Agro Chemicals Limited
- Indian Farmers Fertiliser Cooperative Corporation
- Rashtriya Chemicals and Fertilizers Limited
- Mangalore Chemicals & Fertilizers Chemicals Company
- Aries Agro Ltd.
- Chambal Fertilizers & Chemicals Ltd.
- DCM Shriram Limited
- SPIC
- Transworld Furtichem Pvt Ltd

Others includes Mahafeed Speciality Fertilizers India Pvt Ltd, Fertinagro India Private Limited, Pratik Industries, Positive Group, etc.

- India water soluble fertilizer market is highly fragmented and is marked by the presence of organized and unorganized players.
- Top 6 companies contribute around 35% share in India water soluble fertilizer market. Coromandel International Corporation is leading the market player followed by Mangalore Chemicals & Fertilizers Chemicals company.
- Other prominent players operating in the market include Aries Agro Ltd., Chambal Fertilizers & Chemicals Ltd., DCM Shriram Limited and SPIC among others
- India water soluble fertilizer is completely an import driven market, Majority of the companies import water soluble fertilizer from countries such as China, Russia.
- Aggregating labelling and reselling of water-soluble fertilizers are mainly done by the companies in India.
- Various companies operating in the market are following strategies like mergers & acquisitions, collaborations & partnerships, and new product launches in order to stay competitive and have an edge over the other players operating in the industry.

India Water Soluble Fertilizer Market Share, By Company, 2021

Company	Market share (2021)
Coromandel International Corporation	8.04%
Yara International Chemicals company	7.78%
Zuari Agro Chemicals Limited	6.06%
Indian Farmers Fertiliser Cooperative Corporation	5.33%
Rashtriya Chemicals and Fertilizers Limited	4.48%
Mangalore Chemicals & Fertilizers Chemicals Company	2.90%
Aries Agro Ltd.	1.80%
Chambal Fertilizers & Chemicals Ltd.	1.65%
DCM Shriram Limited	1.53%
SPIC	1.42%
Transworld Furtichem Pvt Ltd	1.11%
Shri Laxminarayan Chem & fertilizer	1.05%
Mahafeed Specialty Fertilizers India Pvt. Ltd.	0.98%
Others	56.85%



- Global water-soluble fertilizer market is highly fragmented and is marked by the presence of organized and unorganized players.
- Top 10 companies control more than 28% share in global water-soluble fertilizer market. Yara International ASA is leading the market player followed by Haifa Negev technologies Ltd.
- Both the company holds a good track record in achieving high production rate and following maximum safety norms.
- Other prominent players operating in the market includes Sociedad Química y Minera, Agrium Inc.. among others.
- Various companies operating in the market are following strategies like mergers & acquisitions, collaborations & partnerships, and new product launches in order to stay competitive and have an edge over the other players operating in the industry.

Others include: Anorel NV, PhosAgro Group etc.

Business Description

- MCF has the annual production capacity of 691000MT.
- Imported Fertilizer Handling Facility has been installed by MCFL. Trucks/tippers will transport the fertiliser from the port and dump it within the Bulk Storage Silo or to a receiving Hopper outside the silo for bagging and dispatch. The Silo has a 20,000 MT capacity.
- The terminal allows for direct ship unloading. A 10,000 MT atmospheric pressure storage tank holds ammonia. The phosphoric acid is dumped into two 8,000 MT capacity tanks.
- Bulk handling conveyors with a capacity of 150 tonnes per hour transport the material from the port to the Bagging factory. The Bagging Plant features two 60-tonne-per-hour-capacity streams that can be loaded onto waggons or trucks.
- There are two separate silos for storing 30,000 MT of urea and 10,000 MT of phosphoric fertiliser.



Annual Turnover(Revenue)
289.85 USD Million

Founded: 1989

Headquarters : Bangalore, India

Key products

- Mono Ammonium Phosphate
- Mono Potassium Phosphate
- Potassium Sulphate
- Calcium Nitrate
- Potassium Nitrate



Key Personnel

Mr. Akshay Poddar (**Chairman**)



Head Office

Level-11, UB Towers,
UB City No.24, Vittal Mallya Road,
Bangalore - 560 001

Phone : 080-4585 5599

Website: www.mangalorechemicals.com

Business Description

- TIFERT was a strategic investment for Coromandel in 2009. Coromandel (15%), Gujarat State Fertilizers and Chemicals Ltd (15%), The Compagnie des phosphates de Gafsa (35%) or Groupe Chimique Tunisien (15%) are among the Indian and Tunisian partners (35 percent). The plant, which is located in La Skhira, Tunisia, has a capacity of producing 3.6 lakh tonnes of merchant grade acid, which is split equally between Indian partners.
- Foskor is a South African phosphate producer that is vertically integrated. Coromandel owns 14 percent of Foskor, which ensures supply stability and flexibility in the phosphoric acid market. The Acid Plant at Richards Bay, KwaZulu-Natal, has a capacity of producing 7.2 lakh tonnes of high-quality, low-cadmium merchant grade acid.
- Coromandel has an employee base of over 4,894 employees.



Annual Turnover(Revenue)
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Founded: 1989

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Key products

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- Mono Potassium Phosphate
- Potassium Sulphate
- Calcium Nitrate
- Potassium Nitrate

**Key Personnel**

Mr. Akshay Poddar (**Chairman**)

**Head Office**

Coromandel House, Sardar Patel Road
Secunderabad 500003
Telangana, India

Phone : 91 40 66997300

Website: www.coromandel.biz

Business Description

- Kandla Unit is IFFCO's first production facility to manufacture Complex fertilizers.
- Kandla Unit produces 9,16,600 MTPA (P2O5) annually and produces a variety of complex fertiliser grades such as DAP, NPK, Zinc Sulphate Monohydrate, and water-soluble fertilisers such as Urea Phosphate, 19:19:19,18:18:18.
- IFFCO Kalol plant has a production capacity of 1100 MTPD of Ammonia and 1650 MTPD of Urea.
- IFFCO Phulpur plants has two Units with a combined production capacity of 2955 MTPD of Ammonia & 5145 MTPD of Urea.
- Paradeep facility has a production capacity of 23,10,000 MTPA of Sulphuric Acid, 8,75,000 MTPA of Phosphoric Acid and 19,20,000 MTPA of DAP.
- IFFCO Aonla manufactures Ammonia and Urea and houses two production units having a combined installed capacity of 3480 MTPD of Ammonia and 6060 MTPD of Urea.



Founded: 1967

Headquarters : New Delhi,
India



Annual Turnover(Revenue)

3711.58 USD Million

Key products

- Mono Ammonium Phosphate
- Mono Potassium Phosphate
- Potassium Sulphate
- Calcium Nitrate
- Potassium Nitrate



Key Personnel

Mr. H.O.Suri (**CEO**)



Head Office

IFFCO SADAN C-1, DISTT. CENTRE, SAKET PLACE,
NEW DELHI - 1100 17

Phone: 42592626

Website: www.iffco.in

Business Description

- In 2011, Yara established its own facilities in India, in the state of Maharashtra, dubbed the "California of India" because to its enormous fruit and vegetable growing area. We've been giving entire crop nutrition solutions to Indian farmers since then.
- They have a pan-India presence in 2018, and Yara Liva (the calcium nitrate series) remains an important product in our portfolio in India.
- On January 12, 2018, Yara completed the acquisition of Tata Chemicals' urea business. All assets and liabilities (working capital) linked to the Babrala facility in Uttar Pradesh were transferred as part of the 421-million-dollar purchase. It's the first foreign direct investment in the heavily regulated urea industry.
- With a strong network of 650-700 dealers, Yara has established a considerable presence in the Northern region and is able to supply increased crop nutrition solutions to farmers in the region.



Annual Turnover(Revenue)
1068 USD Million

Founded: 1967

Headquarters : New Delhi,
India

Key products

- Mono Ammonium Phosphate
- Mono Potassium Phosphate
- Potassium Sulphate
- Calcium Nitrate
- Potassium Nitrate



Key Personnel

Mr. H.O.Suri (**CEO**)



Head Office

502, Global Business Square, Institutional Area,
Sector 44, Gurugram - 122003, Haryana

Phone: 91 124 460 3170

Website: www.yara.in

Business Description

- The Zuari fertiliser plant, which opened in 1973, is a landmark in Goa's growth of large-scale manufacturing. The facility was the greatest industrial enterprise in Goa at the time of its start-up, spurring tremendous economic expansion in the surrounding districts. The facility was built as a result of a financial and technological partnership between the Birla family, US Steel Corporation, International Finance Corporation, and Bank of America. Toyo Engineering Japan was in charge of the plant's design, engineering, and construction. The entire manufacturing facility is divided into four sections: ammonia, urea, NPK A, and NPK B. Zuari's sophisticated fertiliser facilities are based on the slurry granulation process and utilise the latest pipe reactor technology.
- Zuari Agro Chemicals Ltd has started up a Granulated SSP facility with a capacity of 2 lakh MTPA in MIDC Mahad in Maharashtra. The inclusion of SSP under the brand name Super 16 will help Jai Kisan expand its product line.

**Founded:** 1967**Headquarters :** New Delhi,
India**Annual Turnover(Revenue)****1068 USD Million****Key products**

- Mono Ammonium Phosphate
- Mono Potassium Phosphate
- Potassium Sulphate
- Calcium Nitrate
- Potassium Nitrate

**Key Personnel**Mr. H.O.Suri (**CEO**)**Head Office**

Zuari Agro Chemicals Limited

Jai Kisan Bhawan

Zuarinagar

Goa - 403 726 **Phone:** 91-832-2592180**Website:** zuari.in

Business Description

- Company is exploring the feasibility of setting-up Water-Soluble Fertilizer (WSF) manufacturing plant at RCF Thal unit. Five WSF grades namely Mono Ammonium Phosphate (12-61-0), Mono Potassium Phosphate (0-52-34), Potassium Nitrate (13-0-45), Potassium Sulphate (0-0-50) and Calcium Nitrate (15.5-0-0-19) of 10,000 MTPA capacity each are being considered.
- Company produces fertilizers such as Urea (Nitrogenous Fertilizer) at both Trombay and Thal Units, and Suphala 15:15:15 (NPK Fertilizer), Biola (Bio fertilizers), Microla (micronutrient fertilizer) and Sujala (100% water soluble fertilizer) etc. at its Trombay unit.
- The revival of BVFCL Namrup Unit is proposed to be carried out by JV of NFL (28%), Oil India Ltd. (18%), RCF (17%), BVFCL (11%) and Govt. of Assam (26%)
- The proposed project entails setting up a Urea plant with an annual capacity of 1.27 Million MT. The estimated Project Cost is about ₹ 7628 Crore. The feasibility study for the project is being carried out by PDIL



Founded: 1978

Headquarters : Mumbai, India



Annual Turnover(Revenue)

1121.84 USD Million

Key products

- Mono Ammonium Phosphate
- Mono Potassium Phosphate
- Potassium Sulphate
- Calcium Nitrate
- Potassium Nitrate



Key Personnel

Mr. S. C. Mudgerikar (**Chairman**)



Head Office

Priyadarshini Building, Eastern Express Highway,
Sion, Mumbai Maharashtra, 400022

Phone: 022-2552 3000

Website: rcfld.com

Business Description

- EuroChem has grown to become one of the world's largest fertiliser company, with a presence in all three primary nutrients.
- EuroChem Group AG, a renowned global fertiliser manufacturer, has announced the formal launch of a new water-soluble fertiliser production unit at its Lifosa subsidiary in Lithuania in 2018.
- The \$16 million facility will produce 25,000 metric tonnes of crystalline urea phosphate per year, adding to Lifosa's current line of high-quality fertilisers. These include nitrogen-phosphorus fertiliser Diammonium Phosphate (DAP) and water-soluble crystal Monoammonium Phosphate (MAP).
- Crystalline urea phosphate is a water-soluble, chlorine-free fertiliser with no heavy metals that can be used on a variety of soils. It may simply be applied by a sprinkler because it is soluble in water and gives plants with the required nitrogen and phosphorus nutrients for growth.

**Annual Turnover(Revenue)****6.2 USD Billion****Founded:** 2001**Headquarters :** Zug, Switzerland**Key products** Mono Ammonium Phosphate**Key Personnel**Mr. Vladimir Rashevsky (**CEO**)**Head Office**Baarerstrasse 37, 6300 Zug
Switzerland**Phone:** +41-41-727-16-00**Website:** www.eurochemgroup.com

Strategic Recommendations





Preference technology for production

- KBR has pioneered the development of advanced digital and proprietary tools, as well as floating systems solutions, and has provided innovative and dependable process technologies. Superior technologies and solutions optimise production, decrease capital costs, and assure dependable, efficient, and flexible operation, which is why companies chose KBR technology for producing water soluble fertilisers. KBR technologies provide a wide range of solutions, from ammonia and nitric acid to UAN.
- Crystallization systems from Veolia Water Technologies, which provides innovative process solutions for water soluble fertiliser around the world, are also popular among businesses. For fertiliser products such as ammonium sulphate, potassium chloride, potassium sulphate, and potassium nitrate, these unique crystallisation methods provide the flexibility to meet a wide range of production requirements while ensuring crystal size and purity.



India Market scenario

- In India, as the raw material prices of water soluble fertilizers are high which are used as feedstock in comparison to other importing countries, for instance: phosphoric acid cost 47.34/Kg and nitric acid 21.80/kg therefore majority of the companies in India don't manufacture water soluble fertilizer in India, rather import from various countries as feedstock prices are extremely high.
- Drip and Sprinkler irrigation technologies are promoted under the Per Drop More Crop component of Pradhan Mantri Krishi Sinchayee Yojana(PMKSY). Fertigation devices are integral part of the Drip Irrigation System supported under the programme to promote fertigation.
- Besides this, the Indian Council of Agricultural Research (ICAR) imparts training, organizes field demonstrations to educate farmers on advantages of use of water soluble fertilizers.



Preference based on Product

- Water soluble fertilisers such as calcium nitrate and mono ammonium phosphate are widely utilised around the world. Nitrate of calcium One principal (Nitrogen) and one secondary (Calcium) plant nutrient are combined in this totally water soluble fertiliser. The following are the main advantages of utilising calcium nitrate: Calcium is a nutrient that improves the quality and shelf life of food. The plant quickly absorbs the nitrate-nitrogen, which boosts calcium uptake efficiency. Both foliar spraying and drip irrigation are possible.
- The following are the main advantages of using MAP: Phosphorus source with a high concentration for plants Phosphorus is essential for the establishment of a healthy root system, hence it's best used when the crop is young. In addition, the product's nitrogen promotes robust vegetative growth. The ammonium ion lowers the pH of the soil around the root system, allowing for faster and easier phosphorus absorption. Low salt content reduces drip system clogging.



Thank you!!

We look forward to serving your research needs!!

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