



Assessment of Agrochemicals Industry in India

Industry Research ShivChem Agro Limited

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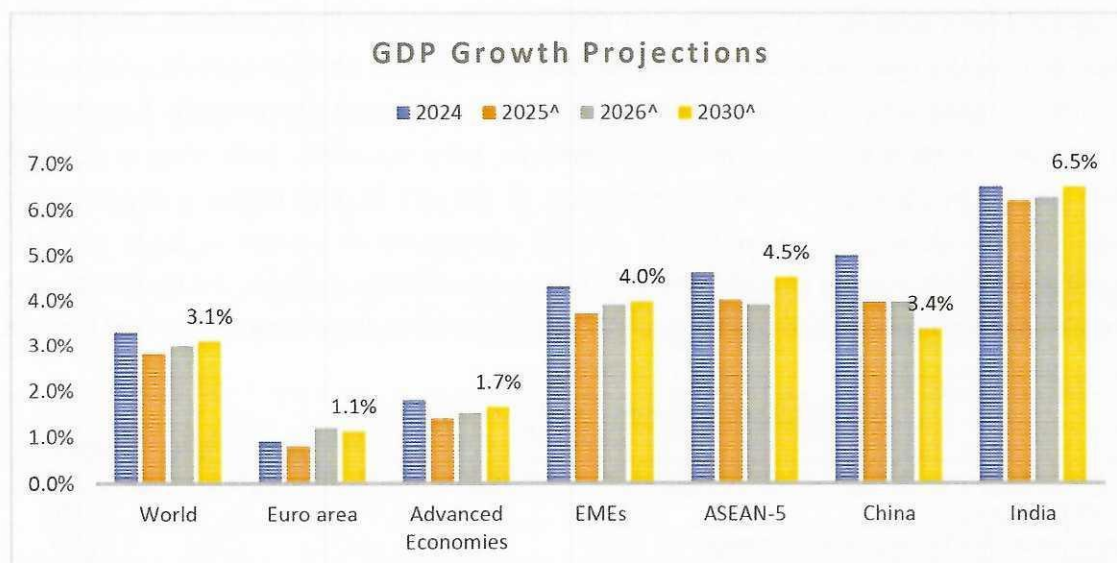
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Global Economic Review

A series of challenges that have appeared since the Covid-19 pandemic continued to impact the economic growth. Rising geopolitical risks, policy uncertainty and ongoing trade tensions further contribute to a slowdown in economic activity. Escalation in geopolitical crisis in the Middle East coupled with uncertainties surrounding the protectionist trade policies and higher tariffs under US President Donald Trump's administration are likely to disrupt global supply chains, hence the overall economic outlook stays fragile.

Reflecting these headwinds, the International Monetary Fund (IMF) projects global growth at 2.8% for 2025 ¹(down from earlier estimates of 3.2%) and 3.0% for 2026 (down from 3.3%). While a modest recovery is expected from 2027 onwards, growth projections are still below earlier expectations, underscoring the persistent risks facing the world economy.

World Bank's Global Economic Prospects - June 2025 report also projects a gloomy economic picture and expects the global growth to weaken to 2.3% in 2025 relative to last year, with deceleration in most economies. The slowdown is largely due to a substantial rise in trade barriers and the pervasive effects of an uncertain global policy environment. Overall, considering the lingering uncertainties on US trade policy stance, the balance of risks to global growth outlook was perceived to be tilted to the downside.

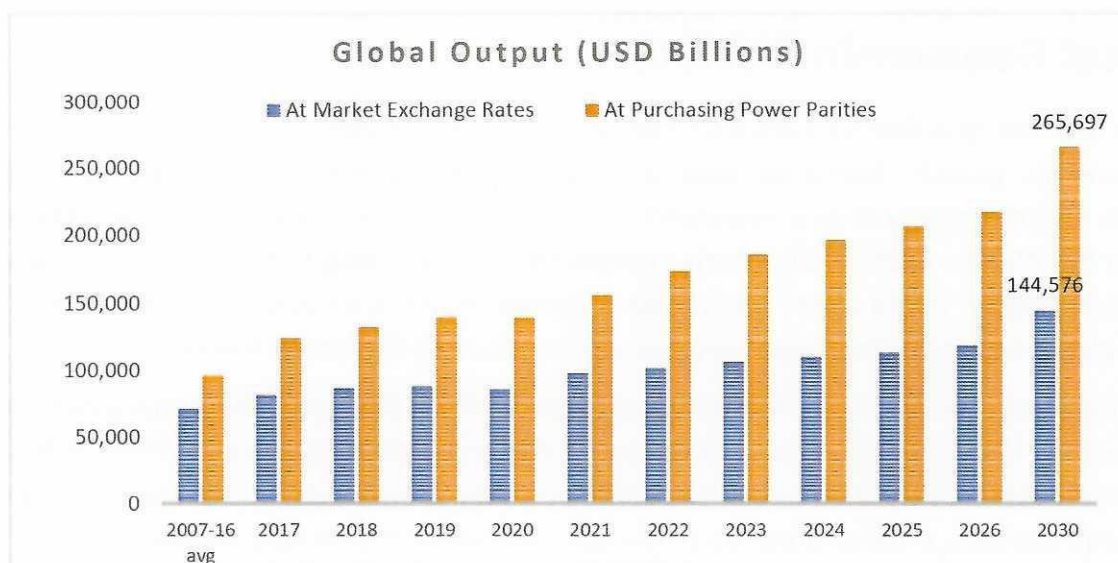


[^] Projections, ASEAN-5: Indonesia, Malaysia, Philippines, Singapore, Thailand.

Source: IMF World Economic Outlook Update, April 2025

¹ IMF, World Economic Outlook Update, April 2025





Source: IMF World Economic Outlook Update, April 2025

Regional Growth

In Advanced Economies (AEs), growth forecasts for 2025 have declined since January, driven by downgrades in some of the world's largest economies particularly due to increasing concerns over trade barriers and the associated policy uncertainty. As per IMF estimates, growth is expected to remain below potential growth estimates in AEs, including in the United States and the euro area. Emerging Market and Developing Economies (EMDEs) growth is forecast to slow significantly in 2025 to 3.8%, with only a modest projected pickup in 2026-27. The projected rate of growth is well below pre-pandemic averages and the deterioration in EMDE growth prospects is driven in large part by economies with a high degree of trade and investment openness. Against the backdrop of a more challenging external environment, growth is estimated to slow in nearly 60% of EMDEs in 2025.

GDP Per Capita, Current Prices (USD per capita)					
	2010	2015	2020	2025	2030 [^]
World	9,757	10,374	11,147	14,213	17,272
Advanced Economies	42,201	43,127	47,603	60,321	72,055
Emerging Market and Developing Economies	3,982	4,793	5,178	6,803	8,759
United States	48,586	57,007	64,454	89,105	105,371
United Kingdom	39,642	44,979	40,231	54,949	68,948
Germany	43,233	41,915	47,342	55,911	65,525
Japan	45,136	35,006	40,160	33,956	41,659
China	4,578	8,174	10,696	13,687	18,617
India	1,351	1,590	1,916	2,878	4,469
[^] Projected by IMF, Calendar year					
Source: https://www.imf.org/					

Global per capita income reflects huge disparities across regions and economies. The world average GDP per capita is estimated at approximately USD 14,213 in 2025 while AEs enjoy much higher living standards, with an average per capita income of about USD 60,321. In contrast, emerging market and developing economies have a markedly lower average, around USD 6,800 per person. Among individual countries, the United States ranks with highest per capita GDP. Among the emerging market economies, China and India's GDP per capita grew at a faster rate compared to US in the last 15 years. India's per capita GDP grew at a CAGR of 5.2% as against US's CAGR of 4.1% between 2010 and 2025.

Global Inflation

Global headline inflation has remained elevated over the past year, briefly edging higher in AEs in early 2025. Tariff induced upward pressure on prices has begun to build along supply chains, particularly in AEs, with manufacturing surveys pointing to rising input and output prices. Inflation expectations have picked up in 2025, especially in some major economies.

According to IMF, headline inflation in AEs has moved closer to targets while core inflation has been slower to fall, particularly on account of persistent services inflation. Inflation in EMEs displayed a mixed but generally easing trend. Inflation projections in 2025 and 2026 have been revised slightly lower in EMDEs on account of weaker demand for traded goods, while revised notably higher in AEs, primarily the United States. According to World Bank, global inflation is projected to average 2.9% in both 2025 and 2026, before easing to 2.5% in 2027, almost in line with the average inflation target. However, there is significant heterogeneity across countries, with inflation projections revised slightly lower in EMDEs in 2025 due to the impact of weaker demand for traded goods, while being revised notably higher in AEs, primarily the United States. Overall, the inflation is sticky at a certain level and is not expected to fall, as much as before.

Global Trade

World trade volume estimates are revised downward sharply for 2025 and 2026 by the World Trade Organization (WTO) in April 2025, marking a substantial reversal from the start of the year due to a surge in tariffs and trade policy uncertainty. Based on the latest developments, the WTO estimates volume of world merchandise trade to decline by 0.2% in 2025 before posting a modest recovery of 2.5% in 2026. The new estimate for 2025 is nearly three percentage points lower than it would have been without recent policy shifts.

The impact of recent trade policy changes varies sharply across regions. In the adjusted forecast, North America now subtracts 1.7 percentage points from global merchandise



trade growth in 2025, turning the overall figure negative. Asia and Europe continue to contribute positively but less than in the baseline scenario, with Asia's contribution halved to 0.6 percentage points. The combined contribution of other regions – Africa, the Commonwealth of Independent States (CIS), including certain associate and former member states, the Middle East, and South and Central America and the Caribbean – also declines but remains positive.

Going ahead, if a more protectionist trade environment emerges, it is likely to lead to a sharp contraction in trade volumes as well. There was already a slowdown in global trade and manufacturing activity in the recent period, due to heightened uncertainty in the trade policy.

Indian Economy

India being the world's fastest-growing economy in the world is expected to remain a major contributor to global growth. However, the Indian economy has shown signs of moderation in FY2025 after a robust 9.2% GDP growth in FY2024. In line with global growth projections, the International Monetary Fund (IMF) in its June report, has downgraded India's growth forecast for FY2026 to 6.3%, down from its earlier forecast of 6.5% due to global headwinds.

India's economy remains on a steady footing despite growing global volatility. The Q1FY2026 GDP estimates signal sharp increase in growth led by services sector performance, while the downside risks emanating from the global environment, including uncertainty surrounding the global trade policies and geopolitical tensions to impact the outlook.

Looking ahead, the recurring geopolitical hurdles along with increased incidence of extreme climate events undermine the growth momentum. Global growth outlook remains fragile, and deterioration is broad-based across the world's economies, hence India is not an exception despite its sound domestic fundamentals. Downside risks emanating from rising protectionism and trade tensions, policy uncertainty, global demand moderation, and geopolitical uncertainties may deteriorate growth prospects. Trade tensions may ease if India succeeds in reaching lasting agreements that address ongoing disputes. RBI's growth projections are slightly higher at 6.5% for FY2026 compared to IMF and World Bank's projections of 6.3% each.



Economic Activity -YoY Growth (At Constant Prices, Base year 2011-12)						
YoY Growth	FY2021	FY2022	FY2023	FY2024	FY2025	Share in GVA (FY2025)
Agriculture, Forestry and Fishing	4.0%	4.6%	6.3%	2.7%	4.6%	14.4%
Industry	-0.4%	12.2%	2.5%	10.8%	5.9%	30.7%
Mining and quarrying	-8.2%	6.3%	3.4%	3.2%	2.7%	2.0%
Manufacturing	3.1%	10.0%	-1.7%	12.3%	4.5%	17.2%
Electricity, gas, water supply and other utility services	-4.2%	10.3%	10.8%	8.6%	5.9%	2.4%
Construction	-4.6%	19.9%	9.1%	10.4%	9.4%	9.1%
Services	-8.4%	9.2%	10.3%	9.0%	7.2%	54.9%
Trade, hotels, transport, storage and communication	-19.9%	15.2%	12.3%	7.5%	6.1%	18.5%
Financial services, real estate and professional services	1.9%	5.7%	10.8%	10.3%	7.2%	23.8%
Public administration, defence and other services	-7.6%	7.5%	6.7%	8.8%	8.9%	12.7%
Gross Value Added (GVA)	-4.1%	9.4%	7.2%	8.6%	6.4%	100%
Gross Domestic Product (GDP)	-5.8%	9.7%	7.6%	9.2%	6.5%	-

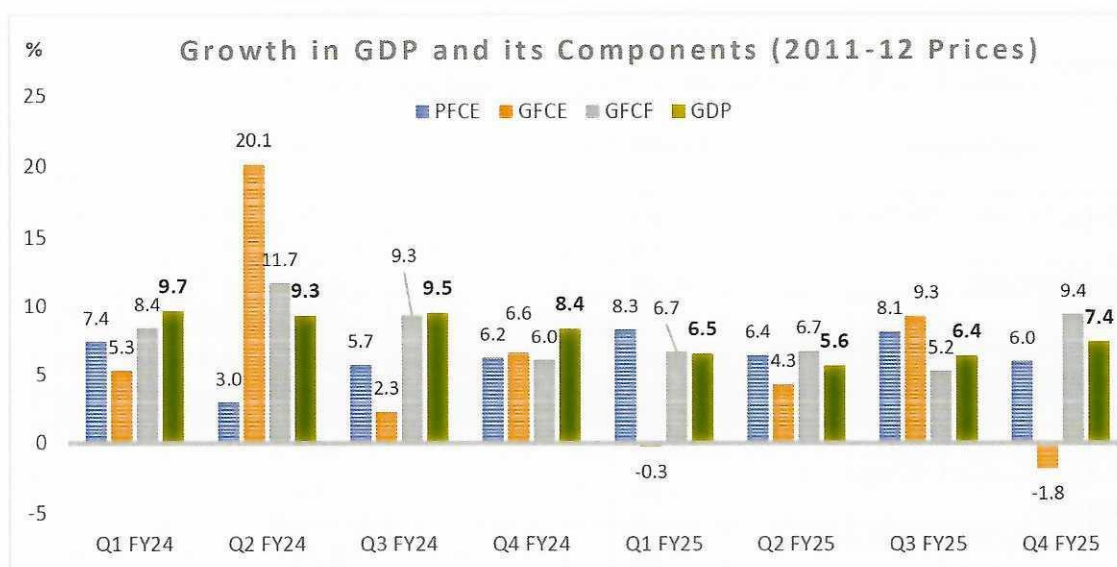
Source: MoSPI, B2K Analytics

Sectoral Performance and Outlook

Services make up close to 55% of the Gross Value Added (GVA) while industries contribute around 30% and the agriculture comprises around 15% of India's GVA.

- Agriculture sector reported stable growth in FY2025, supporting the rural demand. Given the favourable monsoon outlook for 2025, the farm output is projected to remain strong in FY2026.
- Industrial sector has shown strong recovery from its lows despite weaker exports and global trade pressures. The outlook for the manufacturing sector remains mixed due to ongoing global trade uncertainties and geopolitical tensions, which may impose supply chain disruptions. On the other hand, falling inflation and interest rates help revive domestic demand, support investments and the growth in the industrial sector.
- Services sector continued to lead growth, backed by demand, tech adoption, and government spending. The outlook remains positive driven by sustained domestic demand and government initiatives.

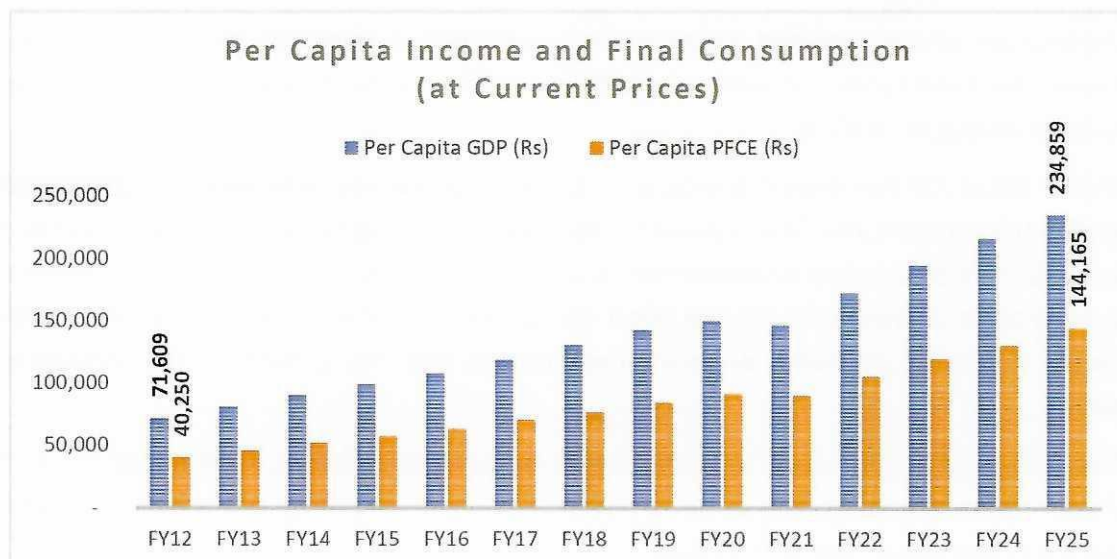




Source: MoSPI, B2K Analytics

India's per capita GDP (at current prices) increased from Rs 71,609 in FY2012, to Rs 234,859 in FY2025, showing CAGR of 9.6%, while in real terms (adjusting inflation) it grew by 5.3% (CAGR) to Rs 133,501 by FY2025.

As per IMF, India's per capita GDP is estimated to witness a steady growth momentum reaching approximately USD 4,469 by 2030², largely due to young and expanding workforce, rising urbanisation, and increasing domestic consumption supported by a growing middle class.



Source: MoSPI, CMIE

² <https://www.imf.org/external/datamapper/NGDPDPC@WEO/OEMDC/ADVEC/WEOWORLD>

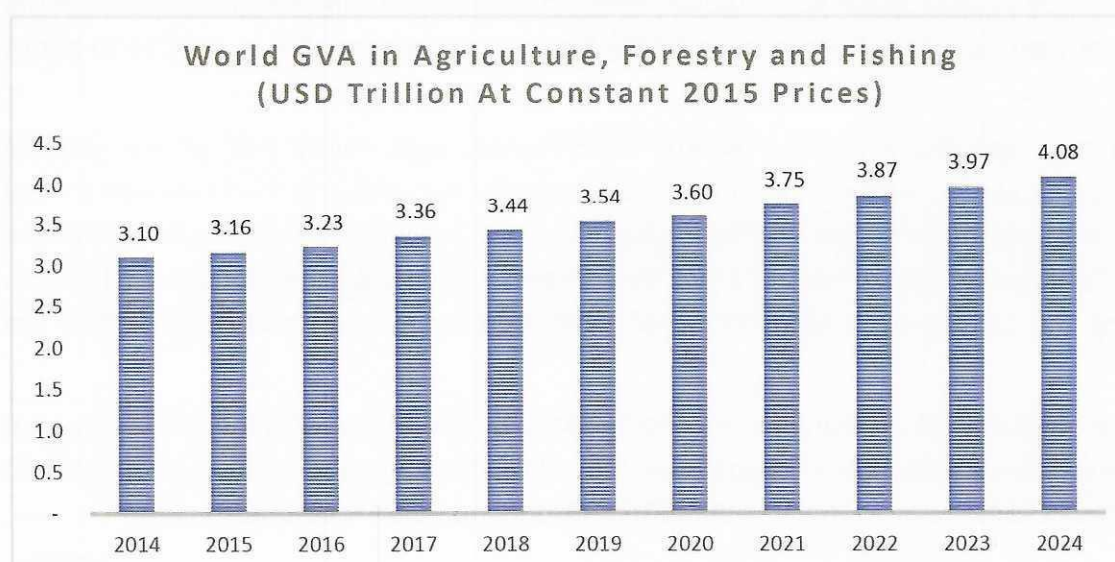


Major Drivers and Challenges for Growth

- Sustained government spending to boost economic activity.
- Strong private investment to support Gross Fixed Capital Formation (GFCF) which risen by 9.4% YoY, in FY2025.
- Easing monetary policy, lower inflation and recently announced GST reforms to boost consumer spending.
- Rising PFCE (household spending) and higher disposable income to drive economic growth.
- Trade uncertainties caused by Trump's tariff policies to have negative impact on India's export growth and its competitiveness.
- Persistent geopolitical tensions (Iran-Israel, Russia-Ukraine) and global trade protectionism is a major downside to growth outlook for FY2026.

Significance of Agriculture in the Economic Activity

Agriculture is fundamental to global well-being providing the food, fibres, and raw materials essential for daily life and is a primary source of income for billions, especially in developing countries. Agriculture's contribution to global GDP is relatively small compared to other sectors such as industry and services. Over the last decade (2014 to 2024), the global GVA in Agriculture, Forestry and Fishing grew steadily at 2.8%.

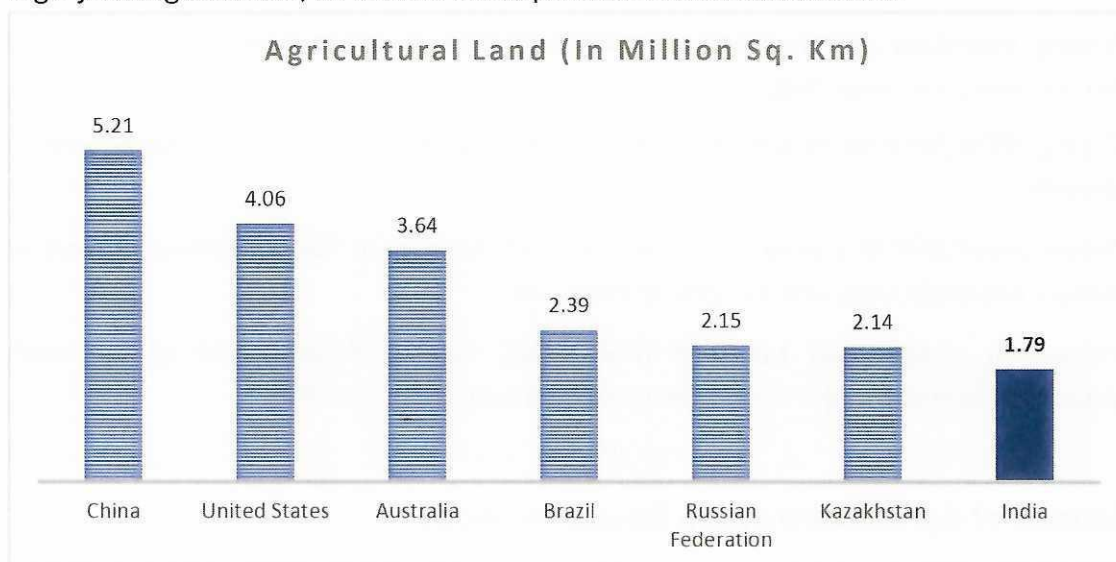


Note: Data for Calendar year

Source: <https://data.worldbank.org/>



According to FAO, the global production of primary crops has grown by 2.8% (an increase of more than 2 billion tonnes) since 2010 and reached 9.9 billion tonnes in 2023. This was facilitated by the enhancement of production technologies and the intensification of cultivation activities; particularly the increased use of irrigation, pesticides, fertilizers and high-yielding varieties, as well as the expansion of cultivated areas.



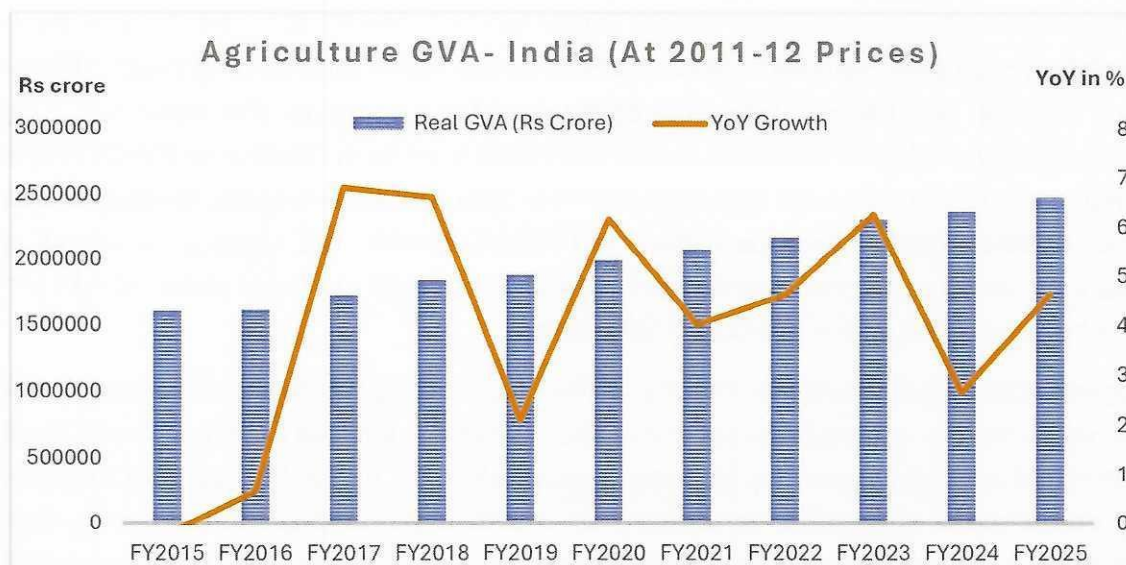
Source: <https://data.worldbank.org/>

India, with the largest agricultural land in the world (179 Mn hectares), is also ranked second globally in terms of agricultural output (USD 485 Bn in 2023), next to China (USD 1,272 Bn). Its contribution to the global agriculture output remains constant over the years and stood at around 12% in 2023, but this is relatively small compared to China's share of 32%. On the other hand, agriculture's share in India's GVA has narrowed from 17% in FY2014 to about 14% in FY2025.

In India too, agriculture holds a greater significance, with nearly half of the nation's population employed in this sector, directly or indirectly. According to the Economic Survey FY2025, the agriculture sector employed about 46.1% of the Indian workforce in FY2024. As per CMIE, India had approximately 108.2 million persons employed as farmers in FY2025, reflecting the continued predominance of agriculture as a source of livelihood in the country.

Being the most populous country in the world, the agricultural sector is the primary source for feeding the vast population. To ensure sufficient food supply within the country, the farm sector needs to focus on increasing the farm output to maintain food supply chains.

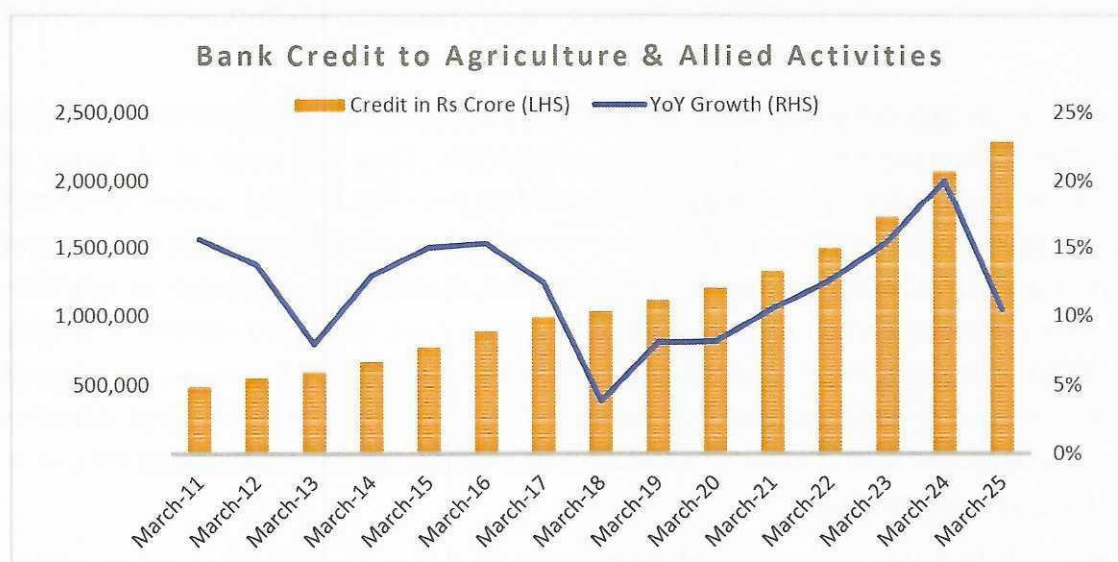




Source: MoSPI

Agriculture Credit

Given the importance of agriculture in the Indian economy, ensuring financial security and accessible credit for farmers remains a top priority for the government. Rural credit is mainly channelled through formal financial institutions such as cooperative banks, Regional Rural Banks (RRBs), and commercial banks, with NABARD, as a Development Bank, mandated for providing and regulating credit and other facilities in rural areas.



Source: RBI, CMIE



Agriculture is a major component of priority sector lending mandated by the Reserve Bank of India (RBI), which ensures banks allocate a fixed proportion of their lending to agricultural and rural sectors. The RBI's outstanding credit data for agriculture and allied activities reflects a steady growth over the years, which increased from Rs 4.17 trillion in FY2011 to Rs 22.87 trillion by FY2025. Although annual growth rate fluctuated in few years, the lowest was recorded in FY2018 (3.8%) and the highest in FY2024 (20.0%). The share of outstanding credit for agriculture and allied activities in the total bank credit averaged about 12% in the last 15 years, and ~35% within priority sector lending.

Government initiatives and targeted credit policies play a crucial role in boosting agricultural credit. Easing interest rate and interest subvention schemes, such as the Kisan Credit Card (KCC) Modified Interest Subvention Scheme, reduce effective borrowing costs for farmers, making credit more affordable. Availability of credit largely influences agrochemicals consumption in India as it allows farmers to invest in essential inputs such as fertilizers and pesticides.

Agrochemicals Industry

Overview

Agrochemicals are intrinsically linked to the agriculture sector, as they are essential inputs for crop production. However, their production and distribution fall under the manufacturing sector. This unique relationship highlights the role agrochemicals play in supporting both agricultural productivity and industrial growth, emphasising their importance in the Indian economy.

Agrochemicals are applied on agricultural land to enhance the soil's nutrient content, and are essential to protect crops from disease, pests etc. They are used in all types of agriculture, including gardening, dairy, poultry production, crop shifting, and commercial planting. Since 2010, the growth rate of global crop production went through several ups and downs, with peaks of about 5% to 6%. The downturn could be attributed to adverse weather, political regulations, and crop diseases affecting production, while the uptrend is largely due to expansion in production supported by favourable weather conditions, rising demand and prices for certain commodities. To increase the production, farmers adopt different techniques and products and agrochemicals are one such product, synthesised for use in crop growth and/or protection.

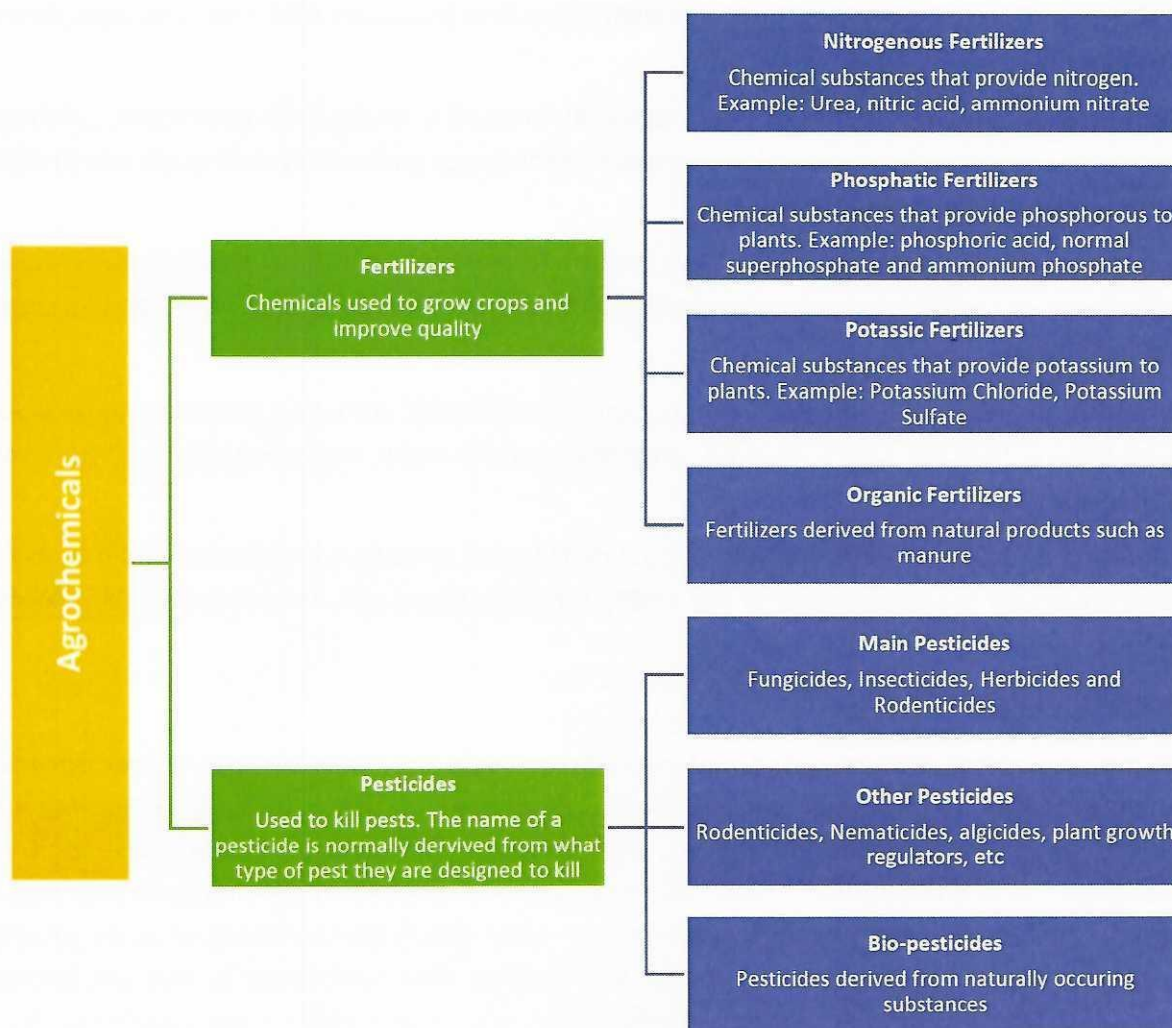
On the back of declining availability of agricultural land due to increasing urbanisation, maintaining a steady growth in agriculture has become extremely critical. There is a need to enhance crop output and improve the quality of the yield to ensure consistent food supply.

Improving crops quality is also equally important amid the rising demand for quality food from consumers. This is why agrochemicals have become so relevant.

Product Type

Agrochemicals can be classified into two categories, fertilizers and pesticides.

Market Structure



Industry Value Chain

The agrochemicals industry encompasses a broad value chain that includes the sourcing of raw materials to the application of inputs on farms.





Basic and Applied Research: Companies invest heavily in both basic and applied research to develop more efficient and effective pesticides and fertilizers that enhance agricultural productivity.

Identification and Registration: Agrochemical products, especially pesticides, undergo mandatory government registration to ensure compliance with safety standards and protect farmers and the environment.

Active Ingredient Manufacturing: Raw materials are processed to manufacture active ingredients or technical grade substances, which form the core components of pesticides and fertilizers.

Formulation and Packaging: Active ingredients are blended with inert materials to produce formulations that are safe to handle, effective in application, and packaged appropriately for distribution.

Marketing and Distribution: Agrochemicals distributed through well-established networks, ensuring timely availability and accessibility for end-users such as farmers across diverse regions.

Production Value Chain

On the production side, raw material suppliers provide the essential inputs that serve as building blocks to produce agrochemicals. Examples of these include petrochemical derivatives such as basic chemicals and solvents and mineral feedstocks such as phosphate rock and sulphur. These raw materials are used for the manufacture of active ingredients also known as technical grade chemicals which are too strong to apply directly to plants which would cause damage. Companies that specialise in this production synthesise the active molecules that provide the pest control or plant nutrition effects. Once the active ingredient is prepared, they are moved to formulation facilities where they are then mixed with inert ingredients, solvents, and additives to create the final product that can be safely and effectively used.

The formulated agrochemical products are then packaged and distributed through an extensive supply chain to ensure it reaches their end-users, small-scale farmers, commercial farms, governmental programs, etc. Distributors include wholesale

distributors, cooperatives and local agro dealers. The end-users then apply these products in the field, to enhance output and protect crops from disease and pests.

Chemicals Used

The domestic fertilizer industry uses chemical inputs such as phosphate rock, phosphoric acid, and potash to produce a wide range of fertilizer grades to support the diverse cropping needs of Indian agriculture. India relies significantly on imports for raw chemical materials, and these imports come from countries such as Morocco, Jordan, Saudi Arabia, Canada, and Russia.

The chemicals involved in the production of pesticides fall into two categories, active ingredients and inert ingredients.

Active ingredients are the biologically active ingredients that aid plant growth or plant protection. Under the insecticide's act of 1968³, only pesticides registered for use can be used in production.

- *Pesticides: Under the insecticide act of 1968, as of 21st March 2025 a total of 655 different formulations for active ingredients are registered for production. Including the combination of different pesticides, 1044 different formulations are registered for use in India for the manufacture of pesticides.*
- *Insecticides: Abamectin, Acephate, Allerthrin, Carbosulfan, Cartap Hydrochloride, etc.*
- *Herbicides: Butachlor, Atrazine, 2,4-D Ethyl Ester, Ametryn, Flufenacet, Flumioxazin, etc.*
- *Plant Growth Regulators: Chlormequat Chloride, Alpha Naphthyl Acetic Acid, Gibberellic Acid, etc.*
- *Fungicides: Captan, Carbendazim, Carboxin, Copper Hydroxide, Dodine, Edifenphos, etc.*
- *Other Pesticides: Fluensulfone (Nematicides), Azadirachtin (Bio-Insecticides), Pseudomonas fluorescens (Bio-fungicides), etc*

Inert Ingredients: These ingredients are added to active ingredients to make them safe and easy to use. Inert ingredients can act as a solvent to help the active ingredient penetrate the plant, improve ease of application by preventing foaming or caking, extend shelf life, improve safety for application and protect the pesticide from degradation due to exposure to sunlight. Some examples of inert ingredients are:

- Solvents: Xylene, Cyclohexanone, Kerosene, Water.

³ Directorate of Plant Protection, Quarantine and Storage



- **Surfactants:** Used to help sprays spread and stick to leaves. Examples: Alcohol ethoxylates, alkyl sulfonate
- **Carriers & Diluents:** Carriers are used for absorbing and delivering liquid active ingredients to plants. Diluents are used to reduce the concentration of a powdered active ingredient by mixing and grinding them together. By adding bulk, it makes a tiny amount of the active ingredient practical to measure and distribute evenly. Examples: China clay, Talc, Diatomaceous earth
- **Emulsifiers:** To create stable mixtures of oil-based active ingredients and water. Examples: Alcohol Ethoxylates, Alkylphenol Ethoxylates, etc.
- **Antifoaming Agents:** Silicone-based compounds to prevent foam during mixing. Examples: Polydimethylsiloxane, vegetable oils, etc.

Fertilizers

The production of fertilizers relies on imported and domestic raw materials:

- **Nitrogen (N) Fertilizers:** Natural gas, coal and other materials can be used to form ammonia from which nitrogen fertilizers can be made.
- **Phosphorus (P) Fertilizers:** Can be produced from Rock Phosphate, Sulfuric Acid and Phosphoric Acid.
- **Potassium (K) Fertilizers:** India has no commercially viable reserves of potassium deposits and so potassium fertilizers and the materials used to produce them are almost entirely imported. Muriate of Potash (MOP) and Potassium Sulphate can be used to create potassium fertilizers.

Production Techniques

The production of fertilizers in India requires large-scale, capital-intensive and energy-driven chemical synthesis processes. For nitrogen fertilizers, the main method used is the Haber-Bosch process, where nitrogen is combined with hydrogen under high pressure and temperature to form ammonia. This then serves as the feedstock for other types of nitrogen fertilizers such as urea or ammonium phosphate. For phosphatic fertilizers, the main technique used to manufacture most commercial phosphate fertilizers is a wet process where phosphate rock is treated with sulfuric acid to create phosphoric acid. This acid is then used in the production of fertilizers such as Di-Ammonium Phosphate (DAP) or Single Superphosphate (SSP). Potassic fertilizers are almost entirely imported in their finished form such as MOP as India lacks commercial potash reserves.

In the case of pesticide manufacture, it is a dual-structure model, which involves the synthesis of technical grade material and then the formulation of pesticide by blending the

technical grade material with inert substances to make it safer to handle. The technical grade material/ active ingredient is synthesized in a chemical factory. The raw materials are used to synthesise the active ingredient through a series of chemical reactions in a controlled environment. This step requires specific equipment designed for this purpose and expertise. The active ingredients are then mixed with inert ingredients and additives such as solvents, emulsifiers, surfactants, etc to produce the specific pesticide requested. The product then undergoes testing to ensure it meets standards and is then packaged in suitable containers and labelled with instructions according to regulations.

Distribution and Warehousing

Packaged agrochemicals are distributed via a network of regional and local distributors and dealers. This stage involves logistics management including warehousing, inventory control, and transportation to ensure timely supply to demand centres, primarily rural retail outlets and agro-input shops.

Distribution Network

The extensive distribution network for agrochemical products in India is a key competitive strength of the industry. According to the Directorate of Plant Protection, Quarantine and Storage, there were 2,94,414 sale points for the distribution of pesticides in India in FY2024. A huge number showing the large distribution network that has been established in India for pesticides. Complementing this, there were 167 fertilizer plants in operation, consisting of 35 urea, 20 DAP and NP/ NPK complex, 101 SSP, 10 Ammonium Sulphate and 1 Ammonium Chloride plants in FY2022. There was also a total of 292,483 sales point in FY2022, according to data from the Ministry of Agriculture & Farmers Welfare.

Sales and Retailing

The agricultural workforce in India remains substantial, and reaching this vast farmer population with agrochemical products involves a well-established and extensive sales and retail network. The products reach farmers through a widespread sales network comprising thousands of retail outlets, cooperatives, and agro dealers spread across rural areas. The retailer's relationship with farmers is crucial, as they also provide advisory services and guidance on usage. This network also acts as a critical feedback loop for market trends, product efficacy, and evolving farmer needs, enabling companies to improve supply chain efficiency.



Regulatory Controls on Unauthorised Agrochemical Manufacturing and Sales

- **The Insecticides Act, 1968:** This act is the foundation for pesticide regulation in India implemented to regulate the import, manufacture, sale, transport, distribution and use of insecticides to ensure that no risk comes to human beings or animals. The act established a Central Insecticides Board and Registration Committee (CIBRC) to oversee the registration, approval and safe use of insecticides. It mandates that any pesticide must be registered before it can be imported, manufactured or sold and prohibits the sale of any insecticide that is misbranded, adulterated, substandard or unregistered.
- **The Fertilizer Control Order:** The Fertilizer Control Order (FCO) serves as the equivalent to the Insecticides Act, but for fertilizers. It regulates the manufacture, quality, pricing and distribution of fertilizers in India to protect farmers from substandard products. It mandates that fertilizers cannot be manufactured or imported unless they obtain a license from the relevant controlling authority. It also sets mandatory quality standards for all fertilizers and prohibits the sale of substandard fertilizers.
- **The Food Safety and Standards Act, 2006 (FSSAI):** This act does not directly regulate agrochemicals, it can indirectly control them. The act sets and enforces Maximum Residue Limits (MRL) for food items which establishes the maximum amount of pesticide residue that is legally permitted on food products. This sets a cap on the use of pesticides as it prevents excessive use of them.

Apart from the central government regulations, various states also implement certain restrictions (temporary or for a limited period) to control the unauthorised use of agrochemical manufacturing and sales in their respective states. Some of the recent regulations which are implemented by various states are listed below:

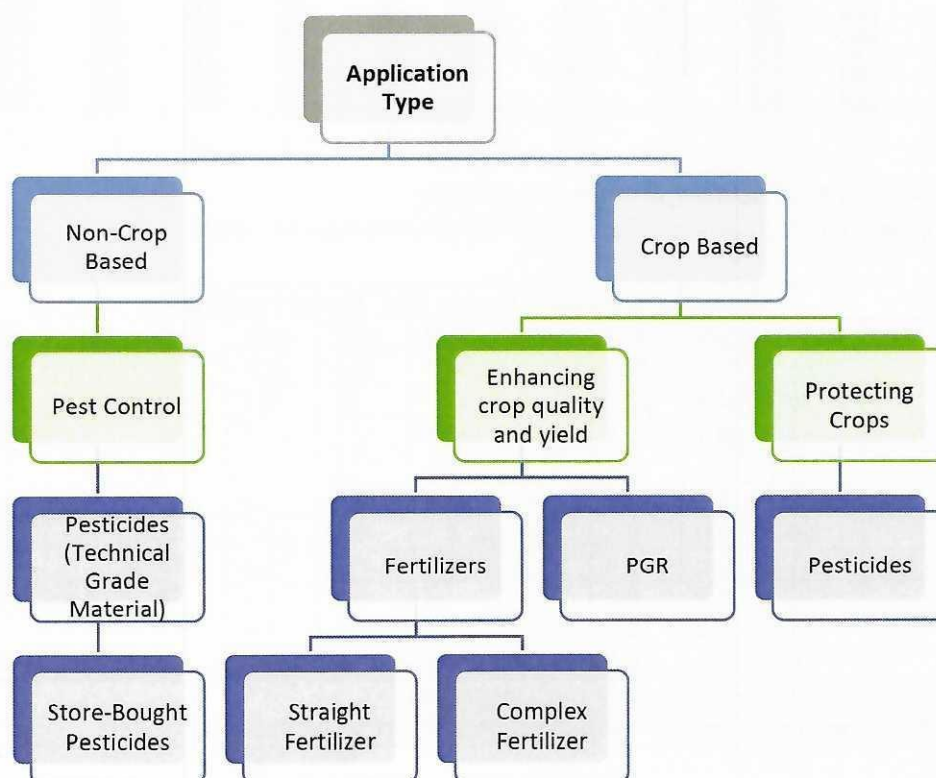
State	Regulation	Year	Impact
Punjab	Ban on 12 pesticide molecules	2025	Punjab High Court continues to maintain a ban on 12 pesticide molecules on Basmati paddy crops.
Maharashtra	Insecticides (Maharashtra Amendment) Bill, 2023	2023	Manufacturing/sale of adulterated insecticides becomes cognizable and non-bailable offense
Haryana	Insecticides (Haryana Amendment) Bill, 2025	2025	Amends the Insecticides Act, to include stricter penalties, including imprisonment and heavy fines
Odisha	Paraquat Ban	2023	The sale/ stock/ distribution/ manufacture/ use of paraquat was banned in Odisha for 60 days from 5th October 2023
Uttar Pradesh	Ban on sales of 11 pesticides	2025	Uttar Pradesh has banned the sale of 11 pesticides in Basmati-growing districts for 60 days from August 1st 2025



Application Type

Agrochemicals are applied on agricultural land to enhance the soil's nutrient content. They are used in all types of agriculture, including gardening, dairy, poultry production, crop shifting, and commercial planting.

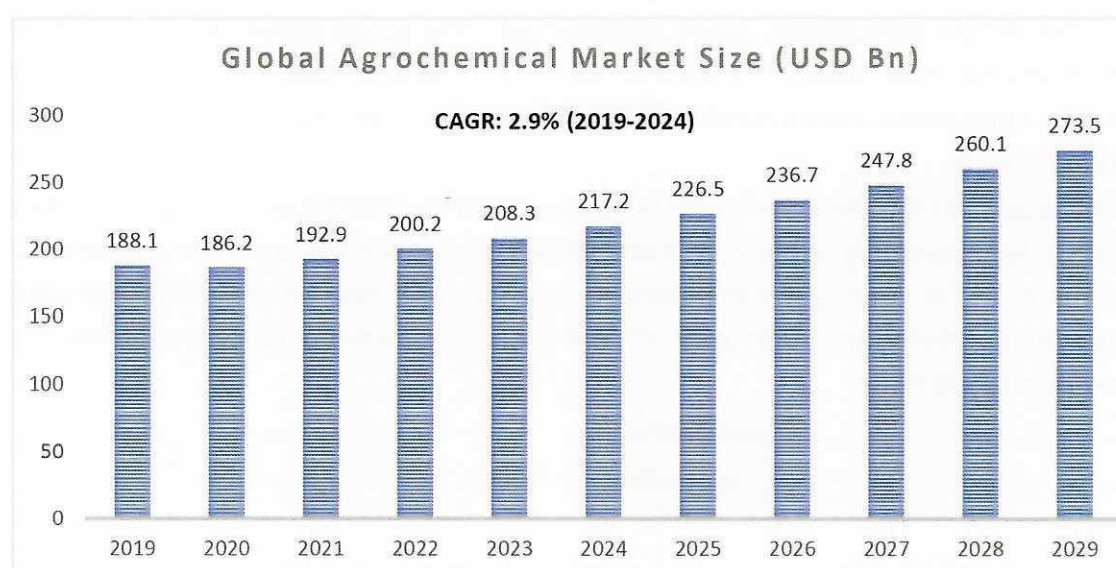
- Pesticides are often not applied in their pure form. In their pure form, called technical grade materials, they are too concentrated to be handled safely, stored or applied. The ones applied on plants are made by mixing inert ingredients with technical-grade material that improves storage, handling, application, effectiveness, and safety. These ingredients mixed with the technical grade material include solvents, adjuvants, and fillers. This is how store bought pesticides are made. The active ingredient, the technical grade, is the one that targets the pest, while the inert aids in handling, and application on plants. Formulations are available to distributors who then sell them to the end users who are farmers.
- Fertilizers can be classified as straight fertilizers or complex fertilizers. Straight fertilizers contain only one primary nutrient, N, P or K while complex fertilizers contain two or three nutrients in some chemical combinations. Examples of straight fertilizers are urea, potassium sulphate and examples of complex are diammonium phosphate and ammonium phosphate.



Market Analysis

Global Agrochemicals Market

The Agrochemicals market is a global industry as every country requires agrochemicals such as pesticides and fertilizers for their agricultural output. In 2024, the global agrochemical market was valued at USD 217.2 billion, and it is forecasted to grow at a CAGR of 4.7% by 2029. This growth is largely driven by the increasing global population which demands higher food production, government policies and subsidies in many countries which promote fertilizer adoption as a critical tool for food security and agricultural sustainability, innovations in fertilizer formulations and better distribution networks.



Note: Estimates from 2024 onwards, Data for Calendar year

Source: EMIS, Report from Technaivo- Global Agrochemicals Market 2025-2029

Global Agrochemical Market Size -Top 10 Countries											
Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
China	42.6	41.7	42.6	43.5	44.5	45.5	46.8	48.2	49.6	51.1	52.7
US	25	24.6	25.6	26.8	27.9	29	30.3	31.8	33.4	35.1	36.9
India	23.4	23.1	23.8	24.5	25.3	26.1	27.1	28.2	29.3	30.5	31.8
Japan	11.7	11.8	12.3	12.9	13.5	14.2	15.0	15.8	16.7	17.7	18.8
Brazil	11.2	11.1	11.5	12	12.4	12.9	13.5	14.1	14.8	15.5	16.3
South Korea	8.0	8.0	8.3	8.7	9.1	9.5	10.0	10.5	11.1	11.7	12.4
Germany	7.1	7.0	7.3	7.6	7.8	8.1	8.5	8.9	9.3	9.7	10.2
South Africa	5.8	5.7	5.8	5.9	6	6.2	6.4	6.6	6.8	7.0	7.3
Canada	5.1	5.2	5.4	5.6	5.8	6.1	6.4	6.7	7.0	7.4	7.8
Australia	4.6	4.5	4.7	4.8	4.9	5	5.2	5.4	5.6	5.8	6.0

Note: Estimates from 2024 onwards, Data for Calendar year

Source: EMIS, Report from Technaivo- Global Agrochemicals Market 2025-2029



Examining the global market size by country wise, we see that currently the top 3 countries with the largest agrochemical market shares are China, US and India, which are also the three most populated countries in the world. China dominates due to its large-scale manufacturing, while India's high CAGR reflects rapid adoption of new farming practices. Brazil's strong demand reflects reliance on agricultural exports. Highest adoption of precision agriculture, strong R&D and leadership in agrochemical patents and advanced crop solutions makes US the second highest in market size.

These countries are expected to continue with the largest market size in 2029 also with China maintaining the lead due to its large agriculture sector and growing domestic manufacturing capabilities. US and India are close behind due to their vast population and agricultural economy.

Global Fertilizer Market

Fertilizers have the bigger share in the global agrochemical market compared to pesticides, as they are essential for improving soil fertility and directly enhancing crop productivity by supplying vital nutrients like nitrogen, phosphorus, and potassium. The global fertilizer market is estimated at USD 132.7 Billion in 2024 and is forecasted to grow at a CAGR of 5.2% to reach USD 171.2 Billion in 2029.



Note: From 2024 onwards, the data is estimated, Data for Calendar year

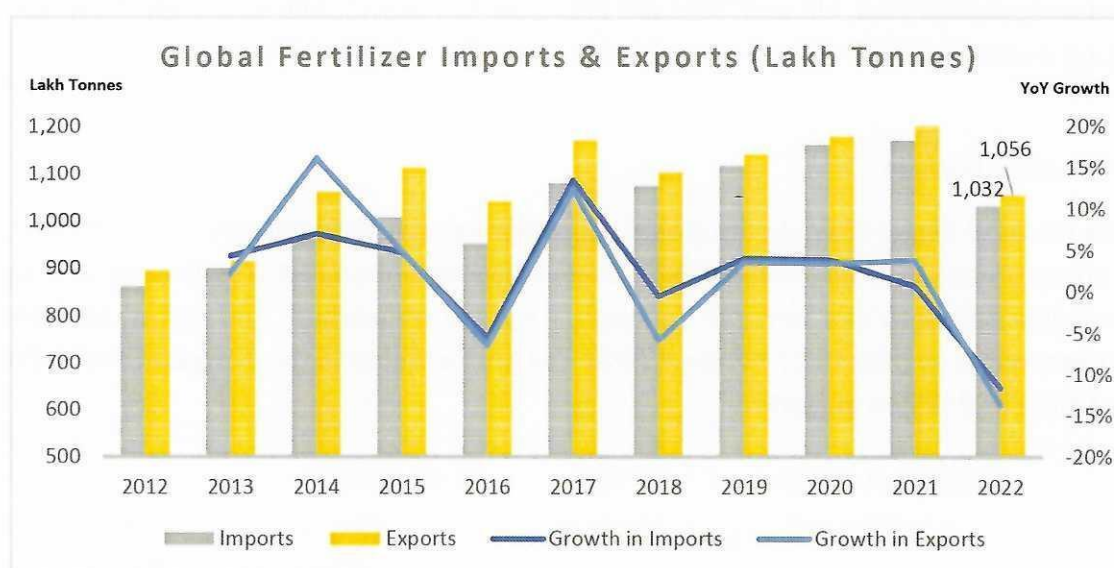
Source: EMIS, Report from Technaivo- Global Agrochemicals Market 2025-2029



Trade in Fertilizers

Since the fertilizer market is a critical component of modern agriculture, there has been notable volatility in both exports and imports reflecting market sensitivity to supply, demand, prices and geopolitical factors.

Growth in trade, both imports and exports remained muted in the recent past and contracted by 11.7% (YoY) and 13.8% (YoY), respectively, in FY2022. Sanctions and export restrictions on key fertilizer producers such as Russia and Belarus amid the Russia-Ukraine conflict disrupted supply chains, while export restrictions by Russia and China to protect domestic supplies, further limited global availability and reduced the trade volumes.



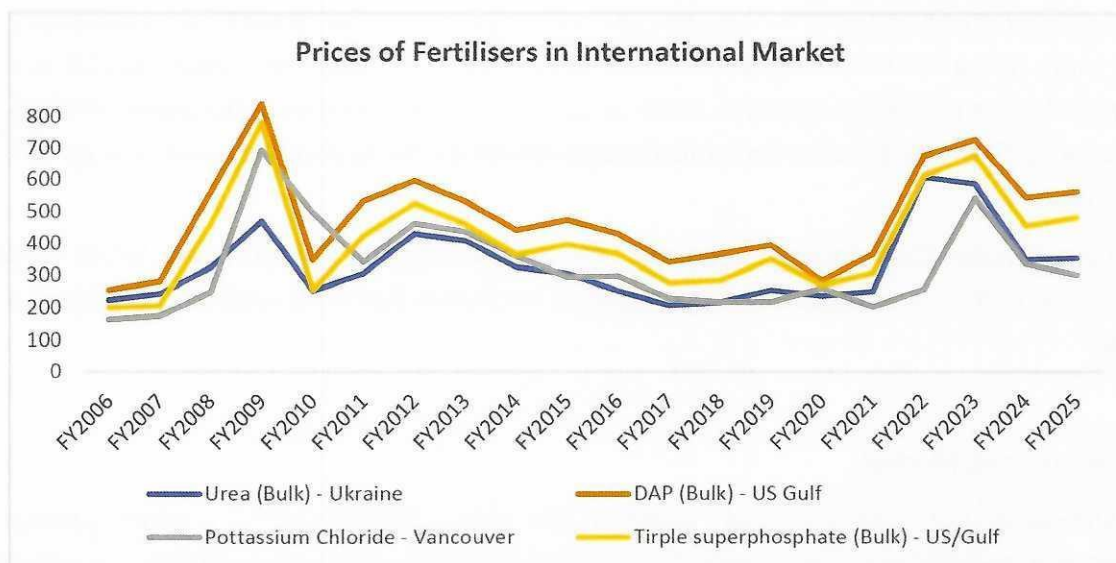
Note: Data for Calendar year

Source: Food and Agriculture Organization of the United Nations (FAO)

Fertiliser Price Movement in the International Market

Fertilizer production depends heavily on natural gas and other energy inputs. Sharp increases in these costs, especially during FY2021 and FY2022, raised fertilizer prices globally, reducing affordability and demand. Investments in new production capacity and easing of energy prices since mid-2022 have started to stabilise prices and supply, but have not yet fully reversed the trade volume decline.

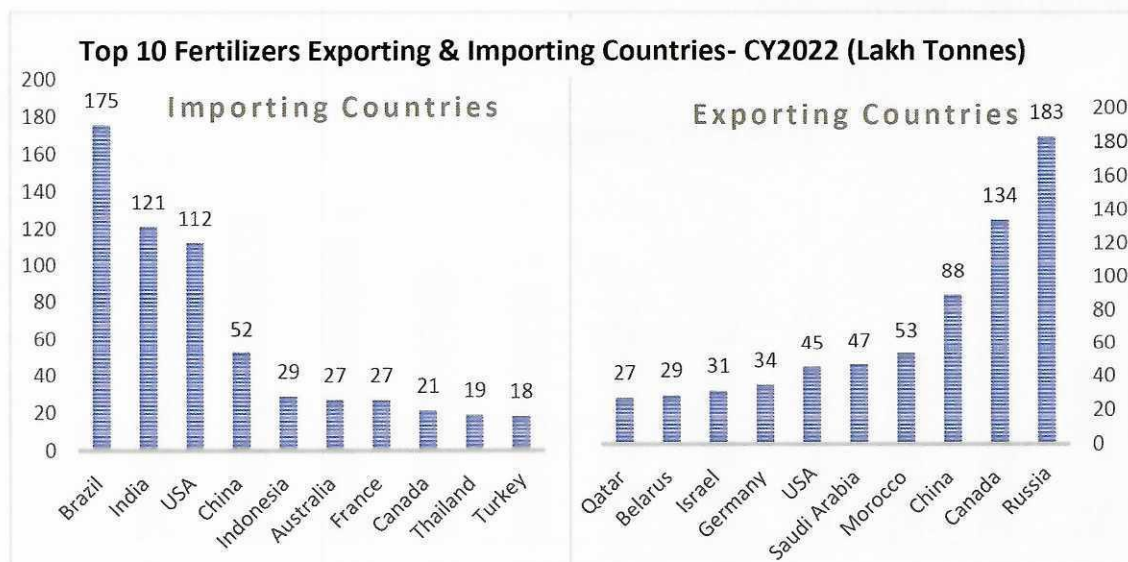




Source: World Bank, CMIE

Country-Wise Imports and Exports

Exporting countries with abundant natural resources and solid production capacities, such as Russia, Canada, and China, dominate the supply side, while major agricultural dominant countries such as Brazil, India, and US dominate the demand side.



Source: Food and Agriculture Organization of the United Nations (FAO)

According to the FAO, China held the record for global production of inorganic fertilizers in 2022, followed by Russia and India, with India and Russia combined equalling China's production. The US is also a major producer of fertilizers compared to other countries and was 4th in terms of production in 2022.



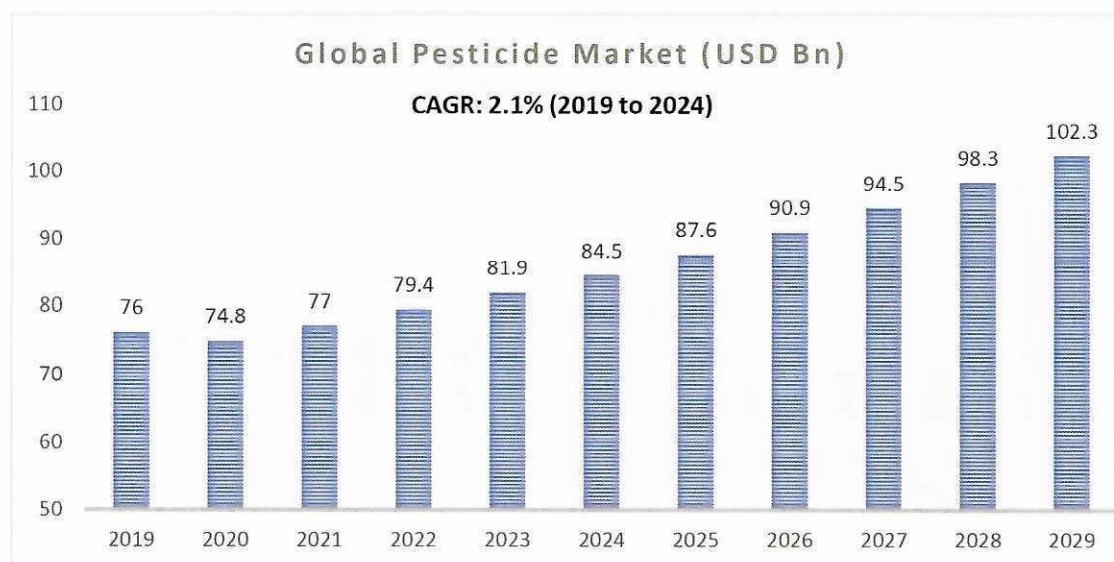
In terms of import of fertilizers, India is the second largest importer of fertilizers after Brazil. Despite India being the third largest producer of fertilizers, its large agriculture sector and population drive substantial demand. India imported 121 lakh tonnes of fertilizers in 2022. Brazil remains the largest importer of fertilizers, driven by its agricultural need for growth stimulants.

Export wise, Russia, Canada and China were the largest exporters of fertilizers, while India was nowhere in the top -10 countries for exports of fertilizers due to its substantial domestic demand.

Global Pesticides Market

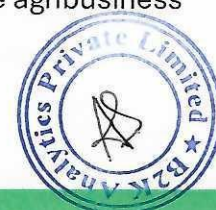
The pesticide market has a smaller share in the global agrochemical market. Stricter environmental regulations and growing consumer awareness are pushing farmers to adopt bio-based and environmentally safe pesticide alternatives, accelerating market growth. Increased agricultural production in developing regions, coupled with the need for efficient crop management due to shrinking arable land, is also fuelling pesticide usage worldwide.

The combination of these factors underpins the steady growth in the global pesticide market which is estimated at USD 84.5 Billion in 2024 and is forecasted to grow at a CAGR of 3.9% to reach USD 102.3 Billion in 2029.



Source: EMIS, Report from Technaivo- Global Agrochemicals Market 2025-2029

The consumption of pesticides remained muted globally, with Brazil topping the list occupying 20% of the global consumption of pesticides, due to its large-scale agribusiness

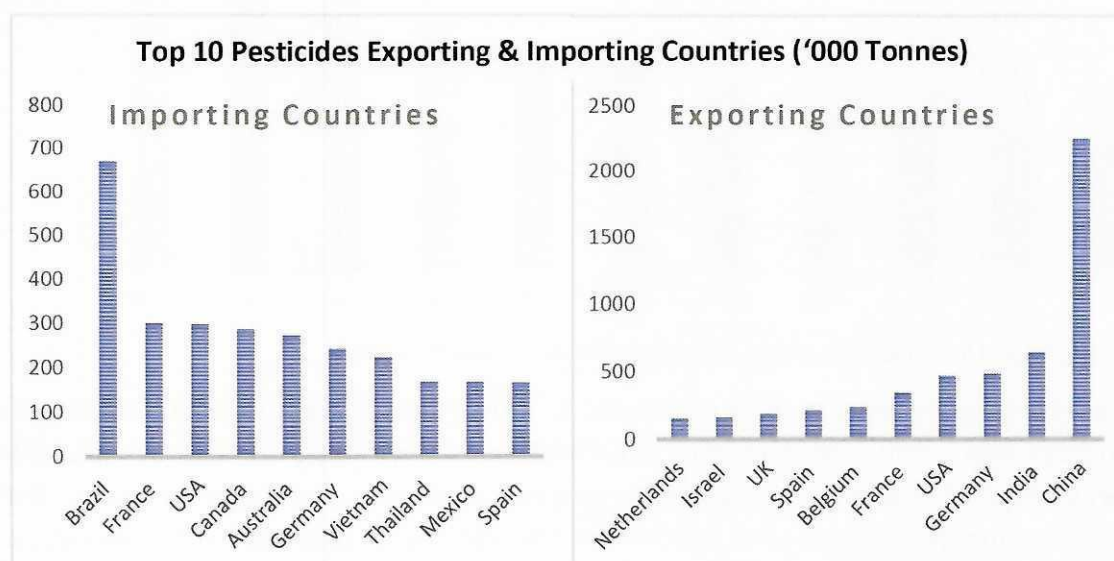


model focused on export-driven crop production. USA and Indonesia were the other top countries, while Brazil's consumption of pesticides far outweighs all other countries.

Global Consumption of Pesticides- Top 10 Countries ('000 Tonnes)										
Country	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Brazil	473	484	498	515	515	549	621	686	720	801
USA	419	413	423	452	450	457	496	475	434	468
Indonesia	315	253	313	350	279	261	274	213	283	295
Argentina	212	208	204	200	196	173	205	241	242	263
China	351	349	346	338	323	295	274	259	245	236
Viet Nam	83	102	102	103	82	139	135	89	149	162
Canada	82	76	75	91	98	88	79	93	98	98
Russia	49	50	51	71	80	75	77	91	97	97
Colombia	55	74	34	32	38	38	70	37	39	78
France	67	75	67	72	70	84	54	65	70	68
Total	3,619	3,626	3,663	3,779	3,678	3,681	3,754	3,707	3,811	3,927
Note: Data for Calendar year										
Source: Food and Agriculture Organization of the United Nations (FAO)										

Trade in Pesticides

Unlike fertilizers, India places second globally in exports of pesticides. India's competitive manufacturing cost structure, skilled workforce, and technical expertise in producing high-quality generic and post-patent agrochemical products propelled it from the 5th position in FY2012 to the 2nd largest global exporter of pesticides in FY2022. Over the past decade, India's pesticide exports have grown at a CAGR of 12%, accounting for 9% of the global pesticide export market. Brazil remains the largest importer of pesticides, while China was the largest exporter. China, which dominates in pesticide exports and considerably greater than India's export attesting to China's manufacturing capabilities.



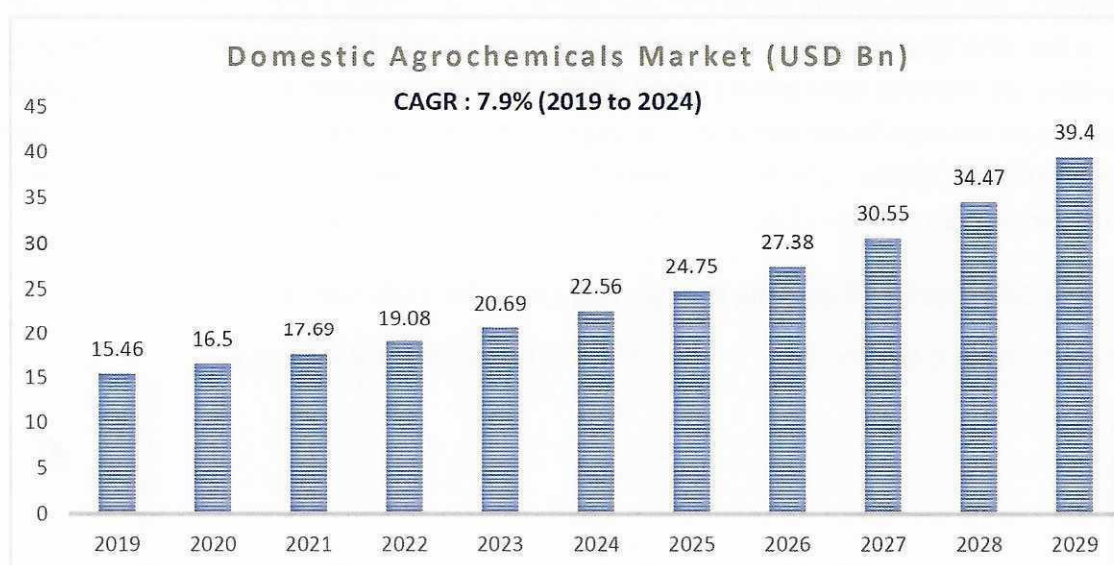
Source: EMIS, Report from Technaivo- Global Agrochemicals Market 2025-2029



Agrochemicals in India

India is currently the fourth largest producer of agrochemicals in the world. As the most populated country in the world, its agriculture demand is incredibly high, hence its agricultural output must meet the ever-growing demands of its population. However, India is also rapidly undergoing urbanisation and digitalisation. The rapid urbanisation is leading to a decline in viable farmland. Therefore, farmers turn to products such as pesticides and fertilizers to enhance their farm output and to protect the agricultural supply chain from pests and disease. Digitalisation has enabled farmers to access comprehensive information about agrochemical products and conveniently place orders for doorstep delivery through online platforms and mobile applications.

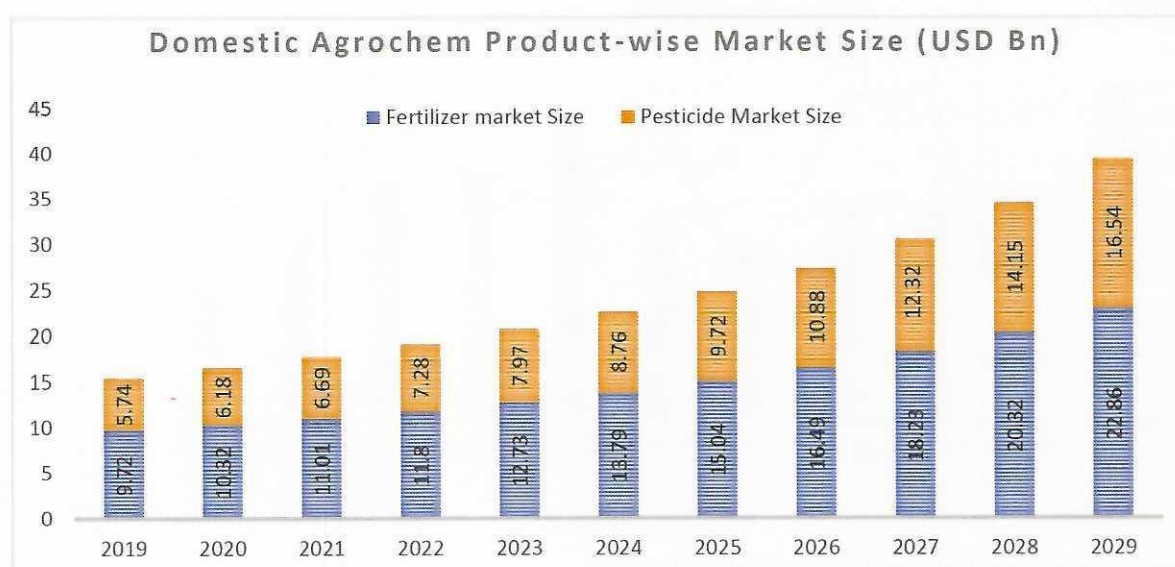
India is one of the largest producers and consumers of agrochemicals globally and has become a major exporter of agrochemicals as well. The industry is supported by advancements in agricultural technologies, such as precision farming and genetically modified crops, which have increased the efficiency and effectiveness of agrochemical applications. Additionally, government initiatives aimed at promoting sustainable agricultural practices and improving farmers access to modern inputs have further bolstered the market.



Source: EMIS, Report from Technaivo: Agrochemicals Market in India 2025-2029

The domestic agrochemical market continues to grow which is estimated at USD 22.56 billion in 2024 and is anticipated to grow at a CAGR of 11.8% to USD 39.40 billion in 2029. The market size of the domestic fertilizer market represents the larger share in the agrochemicals market compared to pesticides. The fertilizer market was estimated to be USD 13.79 billion in 2024 and is projected to reach USD 22.86 billion in 2029, by growing at

a CAGR of 10.6%. On the other hand, domestic pesticide market is estimated to be USD 8.76 billion in 2024 and is expected to grow at a CAGR of 13.5% by 2029. Compared to fertilizers, pesticides are the smaller segment of the market (~40% share) however, there is still higher demand in the market for pesticides which is forecasted to have larger growth compared to fertilizers.



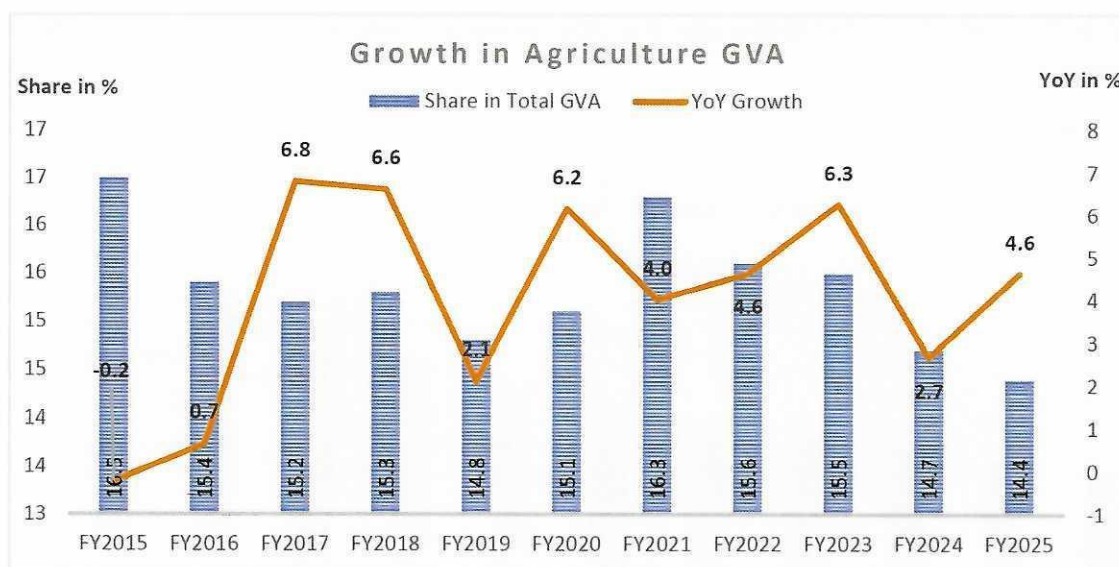
Source: EMIS, Report from Technaivo: Agrochemicals Market in India 2025-2029

Demand for Agrochemicals

The GVA of agriculture and allied activities is used to evaluate the value of agricultural output in India. GVA Growth of agriculture witnessed a decent growth over the last few financial years and represents about 15% of total GVA. India has also become a major exporter of agricultural goods. According to the Economic Survey FY2025, the agriculture sector employed about 46.1% of the Indian workforce in FY2024 and ensures that the entire population is fed. As per CMIE, in FY2025, India had approximately 108.2 million persons employed as farmers, reflecting the continued predominance of agriculture as a source of livelihood in the country.

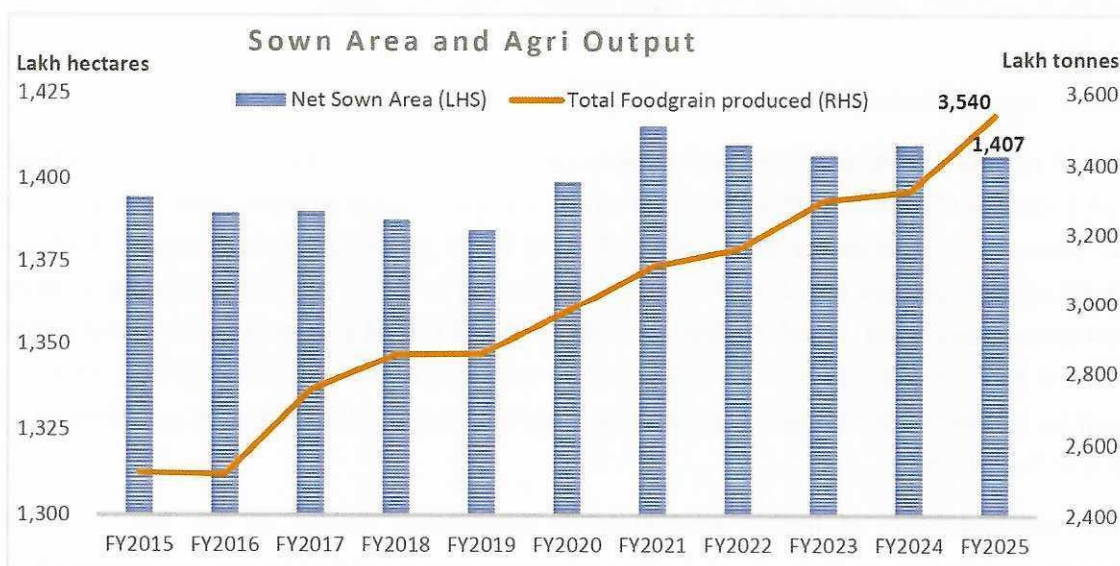
Given the dependability of Indian economy on agriculture sector as the backbone of activities, its significance brings with it high expectations and demands from policymakers, stakeholders, and society at large. Indian farmers must ensure that they are able to maintain both a consistent supply of crops and good quality in their crops. Consumers nowadays demand better quality crops due to growing awareness of crop disease. If the crops are struck by disease or disaster or the farmers cannot produce enough, the India's economy is likely to suffer. To match demand, farmers must turn to products such as fertilizers and pesticides which aid in maintaining growth, especially in the face of deterrents such as

climate change causing erratic weather. Agrochemicals have become vital in ensuring farmers to produce enough crops to meet demand and protect the crops from pests such as insects, weeds and from disease.



Source: MoSPI

Land in Use for Agriculture and Agri Output



Source: Ministry of Agriculture & Farmers Welfare, Government of India

Growth in agriculture and allied sectors weakened in FY2024 but rebounded in FY2025 to 4.63%. With an above normal rainfall estimates for the monsoon season 2025, the agriculture sector is anticipated to report better growth in for FY2026. Though net sown area has had negligible growth over the past 11 years, total foodgrain produced has had decent

growth since FY2015 attesting to the effectiveness of agrochemicals and different farming practices.

Agrochemicals, including fertilizers and pesticides, are essential inputs for enhancing crop productivity and safeguarding food grain production against pests and diseases. The demand for these products is intricately linked to factors such as climatic conditions, especially rainfall, and the area sown under food grains in different growth scenarios.

Analysis of historical rainfall patterns (Normal, Below Normal, Deficient, Above Normal) with foodgrains production and area sown shows strong correlation in normal rainfall scenarios. No direct or strong correlation has been found between pesticide and fertilizer production with rainfall patterns, as consumption is also influenced by regional rainfall variations and progress, government policies, pricing, and affordability. As per our analysis, it is evident that in normal rainfall years, there will be higher net area sown and foodgrain production increases, but not necessarily the demand for fertilizers and pesticides. Pesticide efficiency is highest during normal rainfall years, but its use increases under rainfall stress conditions such as drought or excess rain. Conversely, fertilizer demand surges in years with above normal rainfall and declines sharply during droughts. This highlights the varying rainfall conditions in driving demand for these key agrochemical inputs (refer Annexure II of the Industry Overview for a detailed correlation analysis).

Production of Agrochemicals

The government and various private companies are aware of the importance of the agriculture sector and the benefits that agrochemicals provide in enhancing farm output. They have invested heavily in agrochemicals to create factories for production and create distribution channels to get agrochemicals to the end-users, farmers.

As seen in the table below, the installed capacity, the maximum amount that can be produced for pesticides has increased remarkably over the years. However, the actual production has not grown to match capacity. Actual pesticide production⁴ falls short of installed capacity due to various factors such as fluctuating demand, rise of organic farming and bio-pesticides, environmental concerns and other factors.

Meanwhile, fertilizer production has grown notably reaching 497 Lakh Metric Tonnes (LMT) in FY2024 compared to 339 LMT in FY2015. In the face of shrinking agriculturally suitable land in India, fertilizers have gained higher demand than pesticides, as farmers are favouring

⁴ For pesticides, we will be tracking production and consumption of technical grade pesticides to capture the actual amount of pesticide that is produced and used in the agriculture sector.



fertilisers to enhance the nutritional quality of the soil and crops, to ensure better agri output without compromising the quality of the produce.

Production of Pesticides and Fertilizers			
Year	Installed Capacity of Pesticides ('000 tonnes)	Production of Pesticide ('000 tonnes)	Production of Fertilizers (Lakh tonnes)
2014-15	302	186	339
2015-16	307	188	366
2016-17	322	214	365
2017-18	325	213	408
2018-19	324	217	409
2019-20	334	192	419
2020-21	371	255	426
2021-22	380	299	430
2022-23	389	258	478
2023-24	444	280	497
CAGR (FY2015 to FY2024)	3.93%	4.18%	3.90%
Source: Department of Fertilizers, Department of Fertilizers and the Department of Chemicals and Petrochemicals (DCPC)			

Overall, production capacity for pesticides is high, actual pesticide use is moderated by evolving agricultural practices and environmental factors. In contrast, fertilizer production and demand have grown steadily to support food production needs amid agricultural land limitations.

Production of Fertilizers

The three main fertilizer products produced in India are Urea, DAP and SSP. Compared to other fertilizers, urea accounts for the largest share comprising 63% of total production in FY2024. Urea is a nitrogenous fertilizer and provides a large amount of nitrogen content for plants. Urea is produced in greater quantities to meet the demand. The government also ensures that it is easily affordable to farmers with subsidy schemes. Urea is one of the most popular fertilizers and more advantageous than other fertilizers for a variety of reasons. Its cost of production is relatively low and can be safely stored and transported. It can be used for all types of crops and soil and provides a large amount of nitrogen to plants.

Diammonium Phosphate (DAP) provides nitrogen and phosphorous. It is the world's most widely used phosphorous fertilizer as it has high nutrient content and excellent physical properties.

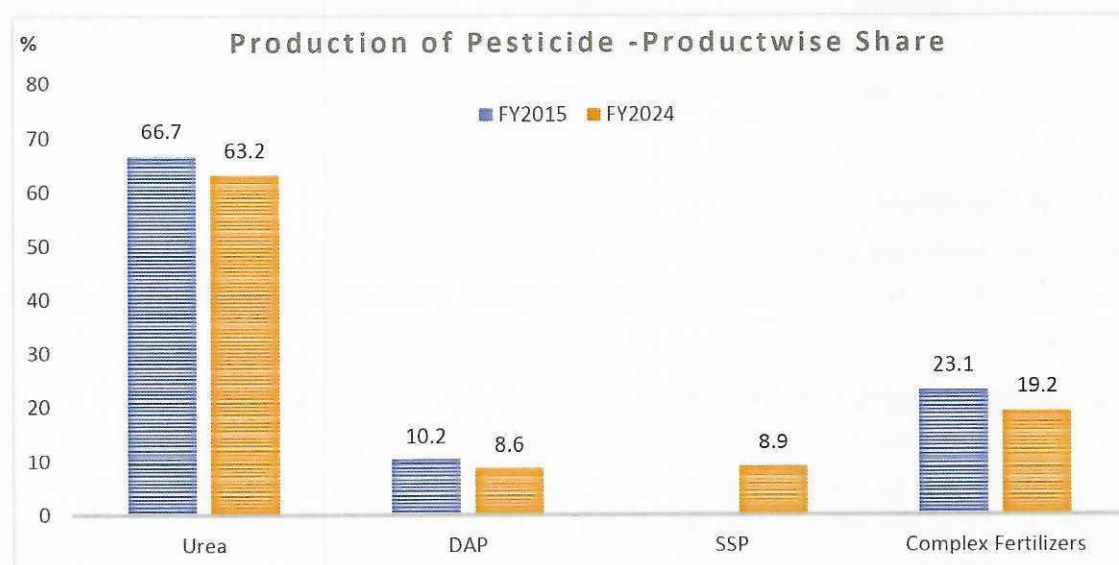
Single Super Phosphate (SSP) fertilizer primarily provides phosphorus, sulphur, and calcium to plants. SSP is popular due to its affordability, the essential nutrients it provides and the versatility of its application. It is suitable for a wide range of crops and soil type. Complex fertilizers consist of the remaining other fertilizers that provide 2 or 3 nutrients to plants.



Production of Fertilizers - By Product (Lakh Tonnes)											
Year	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	CAGR
Urea	225.9	244.8	242.0	240.2	239.0	244.6	246.1	250.7	284.9	314.1	3.4%
DAP	34.4	37.9	43.7	46.5	39.0	45.5	37.7	42.2	43.5	42.9	2.2%
SSP	NA	NA	NA	38.8	40.7	42.5	49.4	53.3	56.4	44.4	2.0%
Complex Fertilizers	78.3	83.0	79.7	82.6	90.0	86.6	93.2	83.3	93.0	95.5	2.0%
Total	338.6	365.6	365.3	408.1	408.7	419.2	426.4	429.6	477.8	496.9	3.9%

Note: CAGR for FY15 to FY24, NA: Not Available
Source: Department of Fertilizers

Over the years, fertilizer production in India has shown consistent growth, with total production increasing from 338.6 lakh tonnes in FY2015 to 496.9 lakh tonnes in FY2024, representing a CAGR of 3.9%. Urea, which dominates fertilizer production, grew at a CAGR of 3.4% during the same review period, reflecting its critical role in providing nitrogen and government support through subsidies. DAP and Complex fertilizers have shown moderate growth (CAGR around 2%), while SSP production has fluctuated over the years yet recorded a CAGR of 2.0%, with some decline in FY2024 possibly due to shifts in demand and supply constraints. The production share of these products has changed slightly, but there is no major shift in the last 10 years.



Source: Department of Fertilizers

Production of Fertilizer Nutrients

While we have tracked the production of actual pesticide material, we have also tracked the production of fertilizer nutrients. This measures the amount of the actual nutrient the fertilizer provides that is produced to see which mineral is more in demand in the agricultural sector. Additionally, India does not actually produce potash fertilizers because it lacks the

natural resources required for large scale manufacturing of potash fertilizers. So, any fertilizer that provides potassium to the plants must be imported. India does not manufacture any potash fertilizers. So, the only two fertilizer nutrients it produces are nitrogen and phosphorous.

Production of Fertilizer Nutrients (Lakh Tonnes)											
Year	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	CAGR
N	123.9	134.1	133.5	133.8	133.0	136.9	137.2	138.4	157.0	170.7	3.3%
P	41.2	43.9	46.0	47.2	45.9	47.9	47.4	47.1	50.1	48.8	1.7%
Total (N+P)	165.2	178.1	179.5	181.1	178.9	184.8	184.5	185.5	207.1	219.5	2.9%

Source: Department of Fertilizers

Production of Nitrogen (N) takes up the greater share (78% in FY2024) compared to Phosphorous (P). Since nitrogen is generally deficient in Indian soil, nitrogenous fertilizers are more in demand. Additionally, plants respond better to nitrogen than other nutrients. These two factors make nitrogenous fertilizers more effective than other nutrients and raises the demand for nitrogenous fertilizers. Nitrogen production, primarily from urea, has grown steadily with a CAGR of 3.3% while Phosphorus production grew at a lower CAGR of 1.7% between FY2015 and FY2024. The trend reflects sustained demand for nitrogenous fertilizers in Indian agriculture compared to phosphatic fertilizer, suggesting emphasis on nitrogen than phosphorus. Total nutrient production (N+P) rose to 219.5 lakh tonnes in FY2024, achieving a CAGR of 2.9% in the last 10 years.

Production of Pesticides

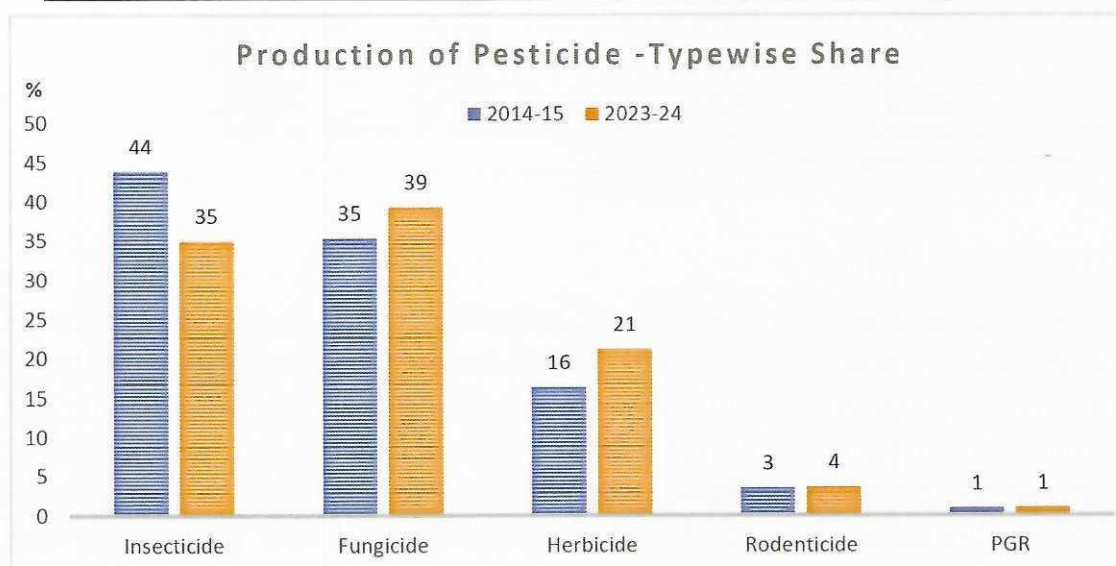
The three most produced pesticides in India are insecticides, fungicides and herbicides. They are more in demand due to the threat of pests and diseases which affect crop yields more than rats.

Overall pesticide production in India has grown steadily, increasing from 187,000 MT in FY2015 to 280,000 MT in FY2024, with a CAGR of 4.12%. Herbicides have exhibited the fastest growth among pesticide types, with a CAGR of 6.86%, followed by fungicides at 5.25%, indicating heightened demand for weed and fungal disease control in crops. Their share in total pesticides production also improved while insecticides declined, over the years. Insecticides, though the largest volume produced, have a modest growth rate of 1.79%, suggesting a relatively mature market segment compared to other pesticide types. Rodenticides and Plant Growth Regulators (PGRs) have maintained moderate growth rates of approximately 4.5-5%, reflecting their specialised but consistent role in crop protection and enhancement. Production peaks observed in FY2022 (299,000 MT) coincide with higher agricultural activity in addition to government initiatives during the Covid-19 years.



Production of Pesticide - By Type ('000 MT)						
Year	Insecticide	Fungicide	Herbicide	Rodenticide	PGR	Total
FY2015	82.1	66.0	30.5	6.4	1.6	187
FY2016	71.9	70.2	36.4	7.2	1.7	188
FY2017	77.8	81.9	44.5	7.7	2.1	214
FY2018	82.9	73.7	47.4	6.2	2.4	213
FY2019	90.9	72.8	45.4	6.2	1.3	217
FY2020	76.9	64.0	43.0	6.2	2.1	192
FY2021	93.9	100.8	49.0	9.1	2.2	255
FY2022	101.2	122.8	60.8	11.9	2.8	299
FY2023	95.4	86.7	64.9	8.9	2.3	258
FY2024	98.0	110.1	59.2	10.0	2.6	280
CAGR	1.79%	5.25%	6.86%	4.56%	4.97%	4.12%

Source: Department of Chemicals and Petrochemicals (DCPC)



Source: Department of Chemicals and Petrochemicals (DCPC)

Consumption of Agrochemicals

Agrochemicals consumption in Indian farming reported muted growth and fertilizers continued to be the most preferred compared pesticides. Despite governments efforts to encourage sustainable farming practices through the adoption of bio-pesticides consumption of bio-pesticides has not grown much over the years.

Bio-pesticides are pesticides derived from natural materials such as animals, plants, bacteria and mineral. They are considered more environmentally friendly than synthetic pesticides as they use biological methods to control pests. Organic methods and healthier alternatives to chemical substances have become the pillars of organic farming and sustainable living.



Overall Consumption				
Year	Consumption of Fertilizer nutrients (N+P+K) (Lakh tonnes)	Consumption of Fertilizers (Lakh Tonnes)	Consumption of Chemical Pesticides (Tech Grade/ Formulation) ('000 tonnes)	Consumption of Bio-Pesticides (Formulations) ('000 tonnes)
FY2015	255.76	NA	56.27	NA
FY2016	267.53	NA	56.72	NA
FY2017	259.49	NA	58.63	NA
FY2018	265.91	515.84	63.41	NA
FY2019	272.88	530.03	59.67	NA
FY2020	293.69	570.78	69.18	8.85
FY2021	325.36	629.83	68.93	8.65
FY2022	297.96	579.67	69.89	9.32
FY2023	298.44	586.20	64.51	7.20
FY2024	306.42	600.79	67.96	7.82
CAGR	1.82%	2.20%	1.91%	-2.44%

Source: Ministry of Agriculture & Farmers Welfare, Government of India., Directorate of plant protection, quarantine and storage, Department of Fertilizers

Fertilizers Consumption

Fertilizer consumption grew at a modest 2.2% CAGR between FY2018 and FY2024, since in India the agriculture is predominantly rainfed which limits intensive agrochemical usage. Urea is the most popular fertilizer for consumption and holds the highest share in total fertilizer consumption. Muriate of Potash (MOP) is the most concentrated form of granular potassium and the most cost-effective. It is often blended with SSP to supply major nutrients for pasture-based systems, where livestock graze on pastures. It is the most used potassium fertilizer. NPK fertilizers are three component fertilizers that provide nitrogen, phosphorous and potassium.

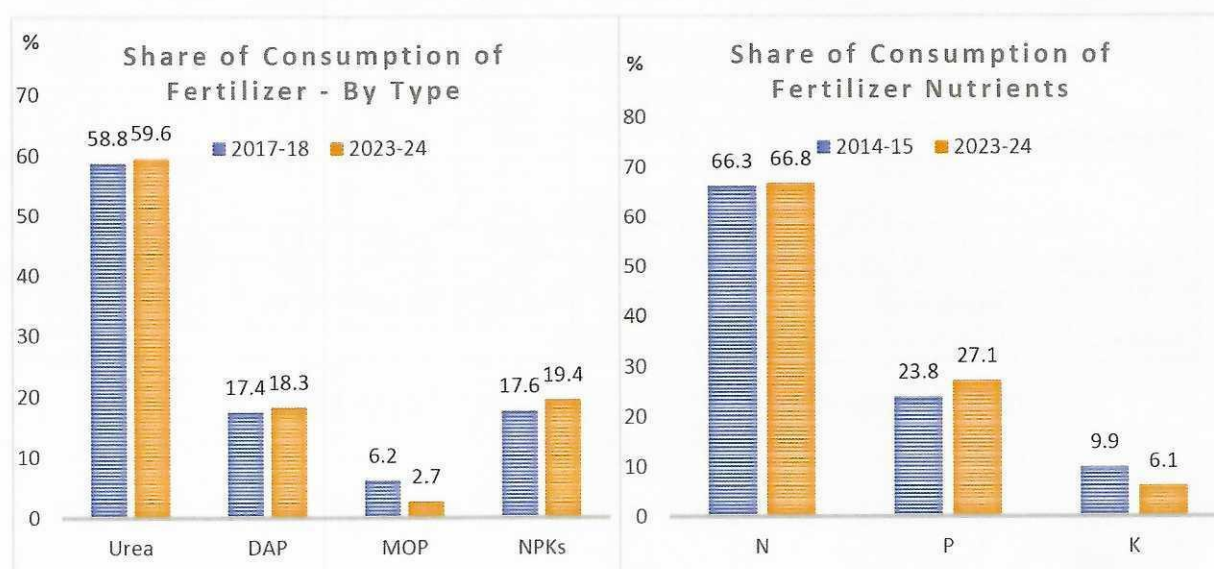
Consumption of Fertilizer (LMT)								
Year	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	CAGR
Urea	303.31	320.04	336.96	350.51	341.73	357.26	357.81	2.39%
DAP	89.85	87.35	101.01	119.18	92.64	105.31	109.73	2.90%
MOP	31.93	26.98	27.80	34.32	23.93	16.32	16.45	-9.04%
NPKs	90.75	95.66	105.01	125.82	121.37	107.31	116.80	3.67%
Total	515.84	530.03	570.78	629.83	579.67	586.20	600.79	2.20%

Source: Department of Fertilizers

The decline in MOP is largely due to a reduction in the subsidy for MOP making it less attractive compared to other fertilizers. This is because the Indian government is trying to reduce Urea, DAP and MOP consumption due to their heavy reliance on imports. MOP as a potash fertilizer is entirely imported from countries like Canada and Russia. The demand for Urea is met domestically but manufacture of urea depends on imported LPG from Qatar,

US, UAE, etc. DAP is also largely imported, either as a finished product or raw materials. The government is trying to reduce reliance on imports.

Consumption of fertilizer nutrient in India also grew at a meagre CAGR of 1.8%, between FY2015 and FY2024, with Nitrogen (N) consumption reflecting similar growth (1.9% CAGR). Phosphorus (P) consumption has seen better growth with a 3.1% CAGR, suggesting efforts to promote balanced fertilisation and improve soil health. On the other hand, Potassium (K) consumption declined at a CAGR of -2.9% due to the government's efforts to reduce farmers reliance on expensive imports. The rise in phosphorus use suggests positive progress toward balanced nutrient application.



Source: Department of Fertilizers

Consumption of Fertilizer Nutrients (Lakh Tonnes)											
Year	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	CAGR
N	169.5	173.7	167.4	169.6	179.0	191.0	204.0	194.4	202.1	204.6	1.9%
P	61.0	69.8	67.1	68.5	68.6	76.6	89.8	78.3	79.2	83.1	3.1%
K	25.3	24.0	25.1	27.8	25.3	26.1	31.5	25.3	17.2	18.8	-2.9%
Total	255.8	267.5	259.5	265.9	272.9	293.7	325.4	298.0	298.4	306.4	1.8%
Source: Department of Fertilizers											

Source: Department of Fertilizers

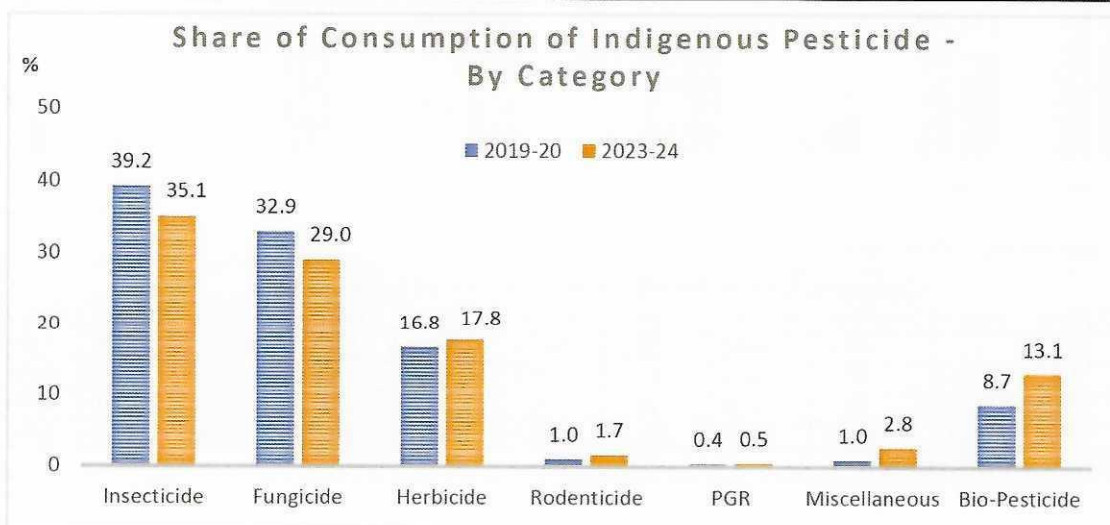
Consumption of Indigenous Pesticides

According to the Directorate of Plant Protection, Quarantine & Storage (PPQS), indigenous pesticides are pesticides that are manufactured domestically and are classified under specific registration categories to promote domestic manufacturing. The indigenous manufacture category allows domestic companies to manufacture pesticides under streamlined regulatory requirements as part of the "Make in India" initiative. While chemical

pesticides mostly show declining growth over the years, bio-pesticides appear to have increased. The decline in demand for chemical pesticides is probably due to the Indian government's push for a sustainable agriculture and organic farming practices. Government initiatives such as National Mission on Sustainable Agriculture (NMSA) and the Paramparagat Krishi Vikas Yojana (PKVY) are aimed to promote the use of bio-pesticides and other organic inputs. Furthermore, there has been a consumer-wide push for organic farming and higher use of pesticides as consumer become more aware of the hazards of chemical pesticides. Factors such as these have led to a decline in demand for chemical pesticides by some farmers.

Consumption of Indigenous Pesticide- By Category ('000 tonnes)							
Type	Category	FY2020	FY2021	FY2022	FY2023	FY2024	CAGR
Chemical Pesticide	Insecticide	10.60	6.55	6.90	8.84	8.89	-3.46%
	Fungicide	8.90	10.20	11.44	7.55	7.35	-3.75%
	Herbicide	4.53	3.48	3.76	4.45	4.51	-0.09%
	Rodenticide	0.28	0.32	0.39	0.40	0.42	8.45%
	Plant Growth Regulators	0.11	0.16	0.17	0.12	0.13	3.40%
	Miscellaneous	0.26	0.00	0.72	0.61	0.70	21.91%
	Total	24.68	20.70	23.39	21.98	22.00	-2.27%
Bio-Pesticide	Bio-Pesticide	2.36	3.54	4.32	3.00	3.33	7.13%
Grand Total		27.04	24.23	27.71	24.98	25.33	-1.30%

Source: Directorate of Plant protection, Quarantine and Storage



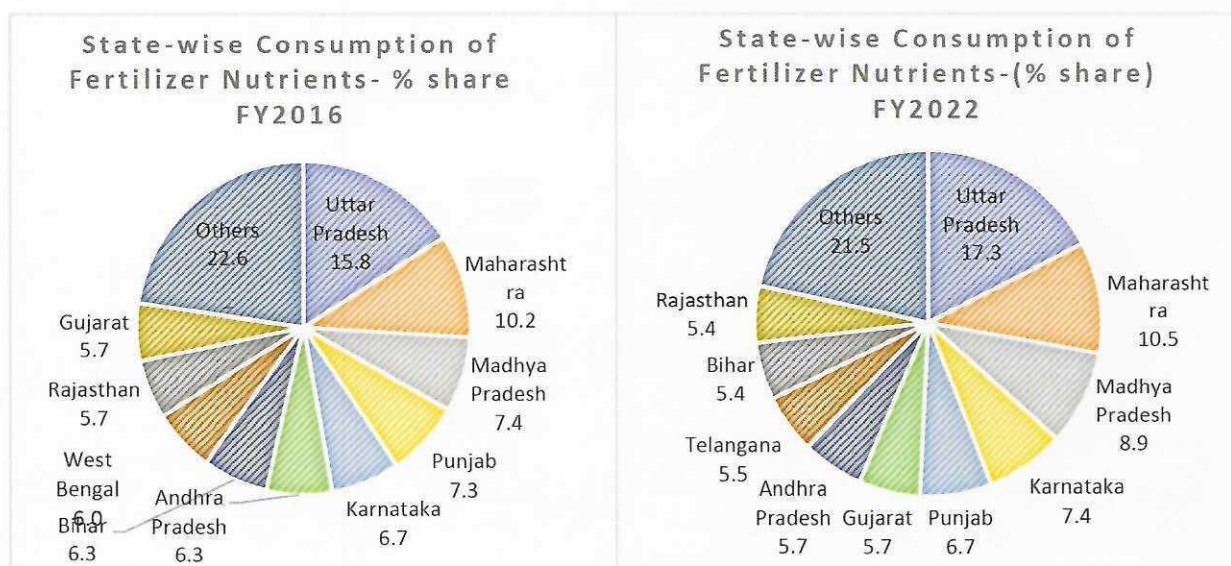
Source: Directorate of Plant protection, Quarantine and Storage



State-wise Consumption of Agrochemicals

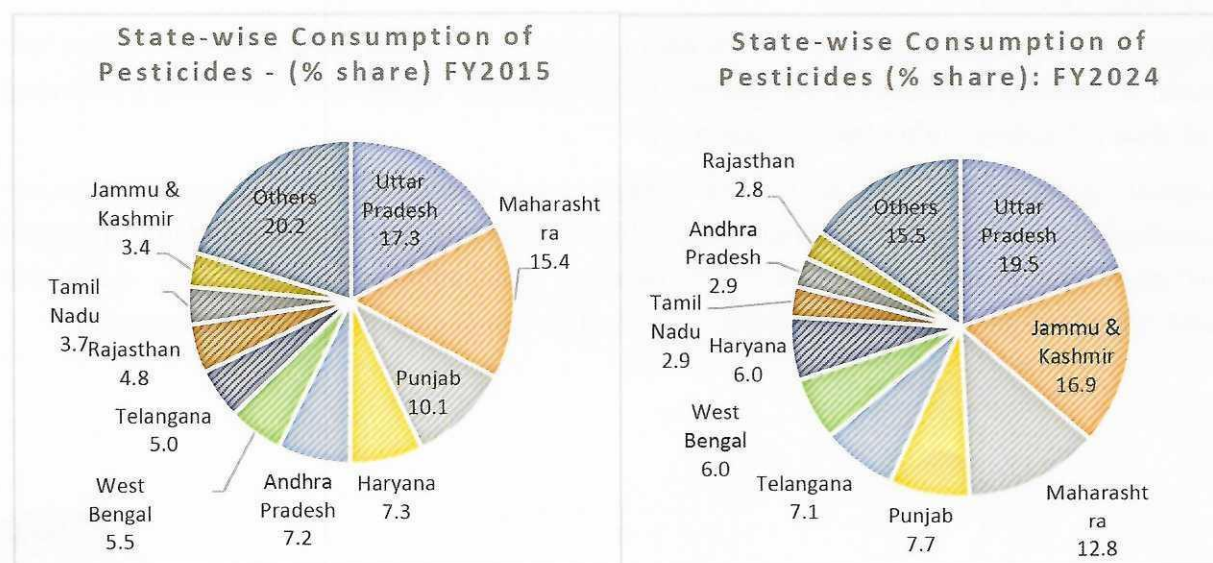
Fertilizers

Uttar Pradesh and Maharashtra had the largest consumption of fertilizer nutrients in India followed by Madhya Pradesh. The share has further increased in FY2022 compared to FY2016, in the case of UP and Punjab, while that of Maharashtra and Karnataka has slightly fallen.



Source: Department of Fertilizers, Directorate of Plant Protection, Quarantine and Storage

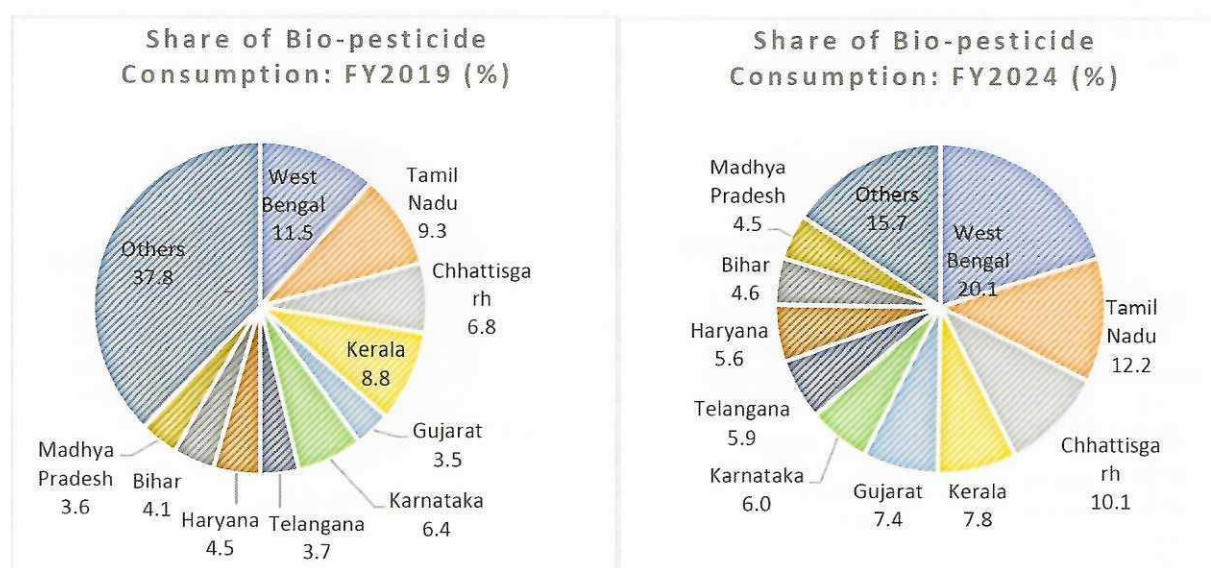
Pesticides



Source: DCPC

The share of consumption of pesticides is calculated by taking technical grade pesticide consumption. Uttar Pradesh remains the largest consumer of pesticides with Jammu and Kashmir at second place. The share has increased over the years, and in FY2024, the UP constituted almost 1/5th of total consumption pesticides.

In bio pesticides, West Bengal tops the list accounting 20% of the total consumption. Tamil Nadu and Chhattisgarh are also the largest consumers of bio-pesticides, and their share of consumption has also risen over the years.



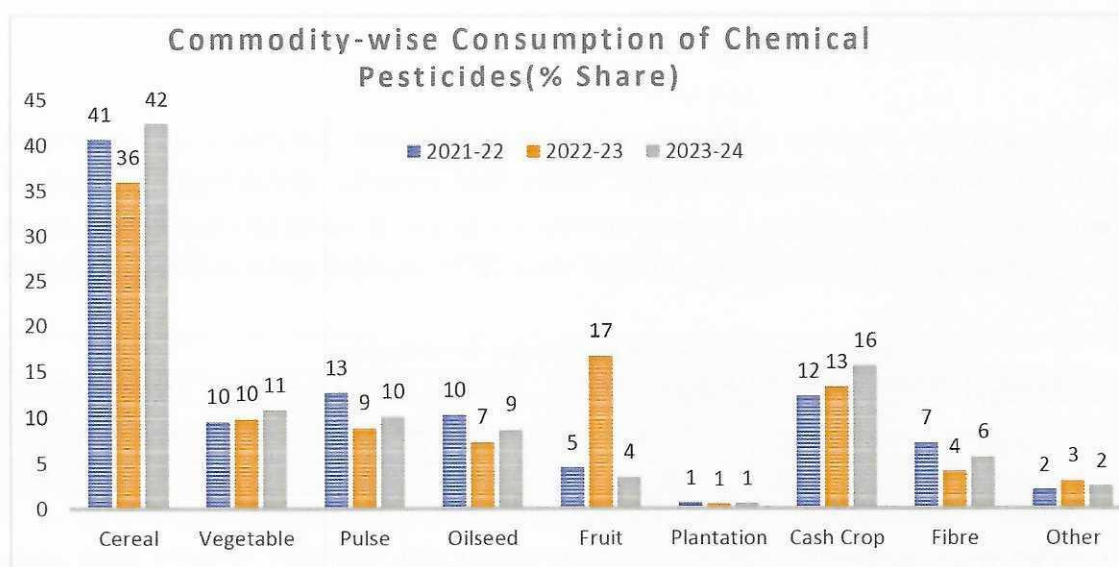
Source: Directorate of Plant protection, Quarantine and Storage

By Application

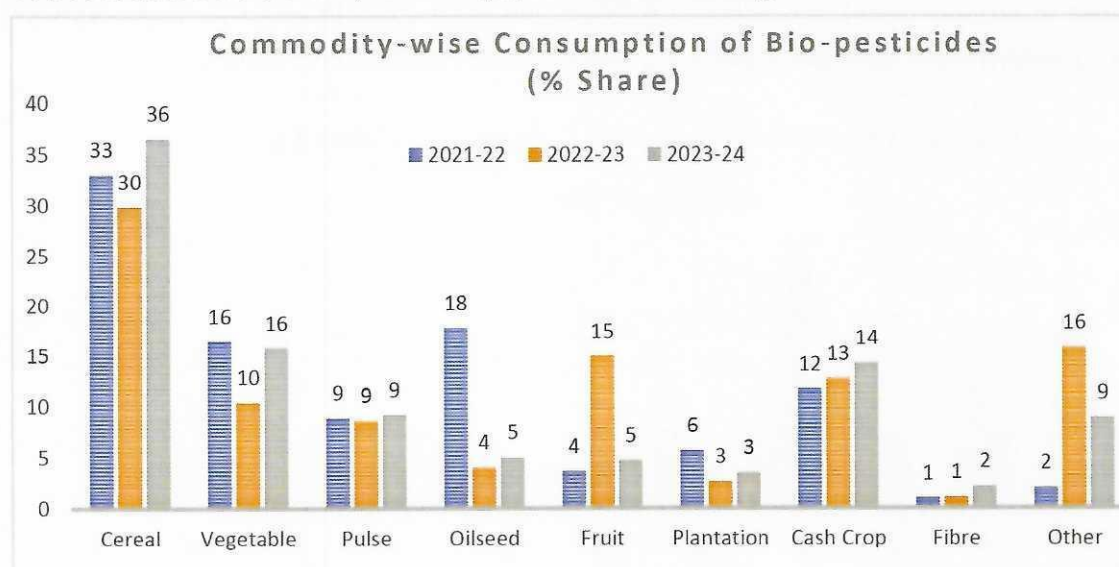
Pesticides are commonly used on cereals followed by vegetables and pulses. There has been a gradual shift toward bio-pesticides across crop categories, reflecting increasing adoption of sustainable pest management.

Cereals consistently account for the largest share in both chemical and bio-pesticide consumption, while cash crops and vegetables follow with slight increase of bio-pesticide usage in cash crops recently. Herbicide demand in oilseeds and bio-pesticide use in oils and 'other' crops is notable, highlighting diversification of crop protection approaches.





Source: Directorate of Plant protection, Quarantine and Storage



Source: Directorate of Plant protection, Quarantine and Storage



Foreign Trade - Agrochemicals

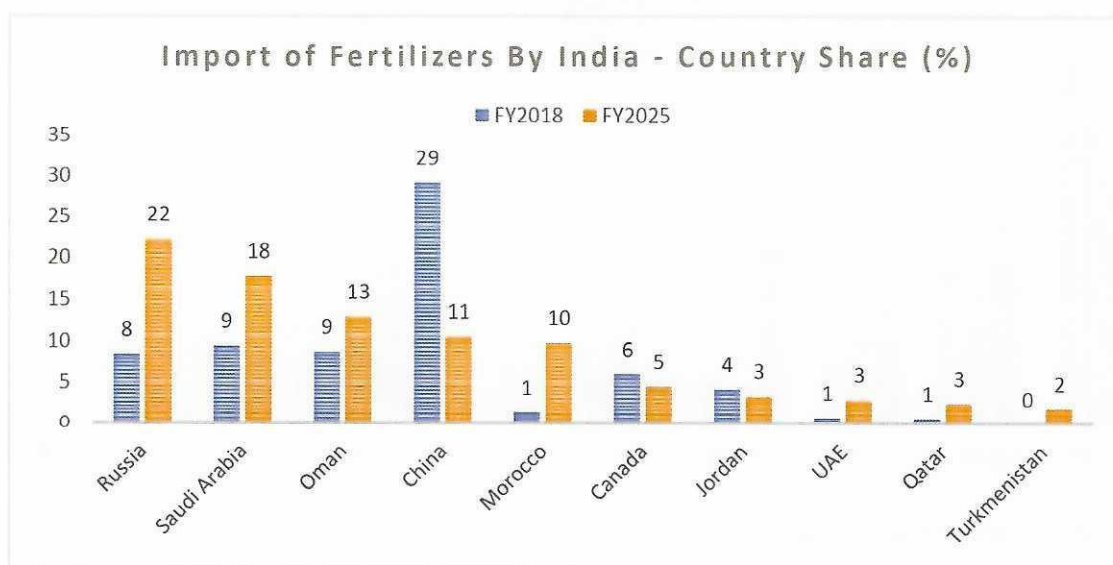
Fertilizers

India remains a major importer of fertilizers and raw materials, despite sound domestic production. The import of fertilizers is much higher than exports, which highlights India's dependence on import of fertilizers to keep up with the demand. India produces most of its urea, but about 20% of urea, 50 to 60% of DAP, and 100% of MOP used in the country are imported.

Export and Import of Fertilizers (USD Billion)										
Year	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	CAGR
Export	0.07	0.11	0.15	0.12	0.10	0.08	0.13	0.13	0.16	9.6%
Import	4.67	4.67	6.66	6.70	6.87	12.77	15.32	8.92	8.29	6.6%
Net Trade	-4.60	-4.56	-6.51	-6.59	-6.77	-12.68	-15.19	-8.79	-8.12	6.5%

Source: Ministry of Commerce and Industry

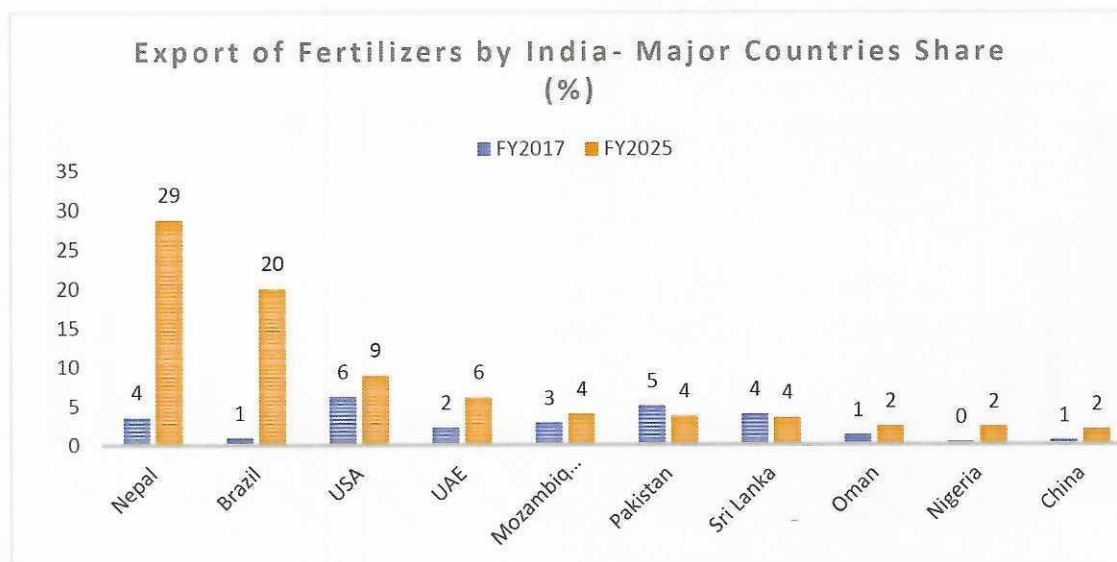
Due to gaps between domestic production and consumption, fertilizer imports have been rising. Imports peaked to USD 15.32 billion in FY2023 from USD 4.67 billion in FY2017, but moderated to around USD 8.29 billion in FY2025, showing a CAGR of 6.6%. Top countries India imports fertilizers from are Russia, Saudi Arabia and Oman in FY2025.



Source: Ministry of Commerce and Industry

Export volumes remain small but have grown at a faster pace (9.6% CAGR in 9 years) compared to imports, indicating emerging export potential. The top three countries India exported fertilizers to are Nepal, Brazil and USA in FY2025. Nepal and Brazil's share increased tremendously over the years. Nepal does not produce fertilizers domestically hence relies heavily on imports. To address chronic shortages and bypass delays from global tendering, Nepal signed a government-to-government (G2G) agreement with India in 2022, allowing direct procurement of large volumes of fertilizers over five years. While

market-driven demand, favourable pricing, and supply chain strategies led to higher imports demand by Brazil.



Source: Ministry of Commerce and Industry

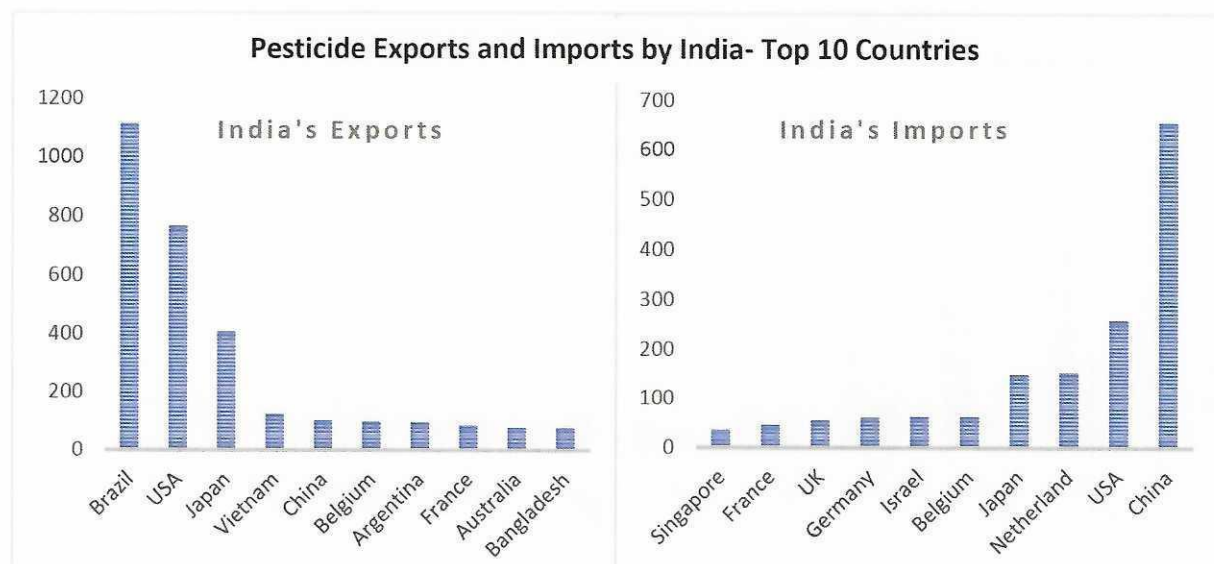
Pesticides

India's manufacturing capabilities has contributed to its growth in exports of pesticides. Over the years, export of pesticides has grown notably at a CAGR of 8.0% between FY2017 and FY2025, while imports grew at a rate 5.2%.

Export and Import of Pesticides (USD Billion)			
Year	Export of Pesticides	Import of Pesticides	Net Trade of Pesticides
FY2017	2.14	1.05	1.09
FY2018	2.56	1.31	1.24
FY2019	3.15	1.33	1.82
FY2020	3.34	1.29	2.06
FY2021	3.58	1.67	1.91
FY2022	4.89	1.80	3.10
FY2023	5.37	1.80	3.57
FY2024	4.19	1.41	2.78
FY2025	4.27	1.66	2.61
CAGR	7.98%	5.22%	10.19%
The HS code for export and import of pesticides is 3808 which stands for insecticides, rodenticides, herbicides, anti-sprouting products and plant growth regulators-disinfectants etc in packings/ as articles.			
Source: Ministry of Commerce and Industry			

India exports the most pesticides to Brazil, USA and Japan. While a large percentage of India's import of pesticides are from China, followed by the US and Netherlands in FY2025.

The Indian government has actively pursued strategies to reduce dependence on imported fertilizers and promote self-sufficiency.

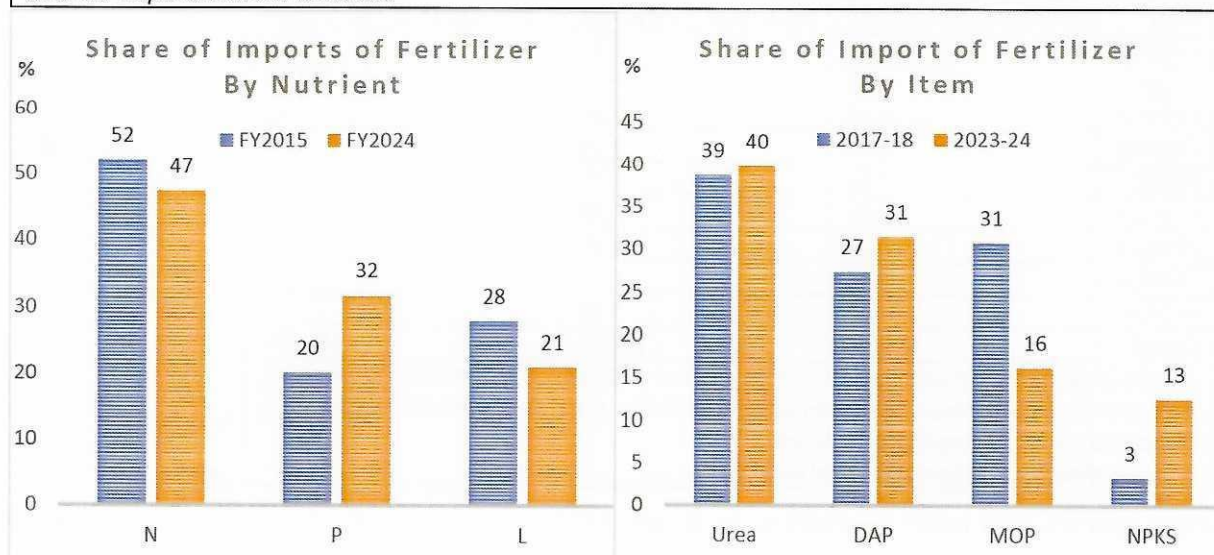


Source: Ministry of Commerce and Industry

Fertilizer Imports - By Nutrient

Import of N, P and K (Lakh Tonnes)											
Year	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	CAGR
N	47.7	50.7	33.9	35.9	47.0	51.9	56.3	53.6	51.0	45.8	-0.4%
P	18.3	28.9	21.3	20.5	31.7	24.1	25.4	27.8	36.3	30.5	5.2%
K	25.4	20.5	23.3	29.0	26.3	22.8	26.7	16.3	14.3	20.2	-2.3%
N+P+K	91.4	100.1	78.4	85.3	105.0	98.8	108.5	97.7	101.6	96.4	0.5%

Source: Department of Fertilizers



Source: Department of Fertilizers

Import of Fertilizers (Lakh Tonnes)								
Year	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	CAGR
Urea	59.8	74.8	91.2	98.3	91.4	75.8	70.4	2.38%
DAP	42.2	66.0	48.7	48.8	54.6	65.8	55.7	4.05%
MOP	47.4	42.1	36.7	42.3	24.6	18.7	28.7	-6.91%
NPKS	5.0	5.5	7.5	13.9	11.7	27.5	22.2	23.74%
Total	154.3	188.4	184.1	203.3	182.3	187.8	177.0	1.98%

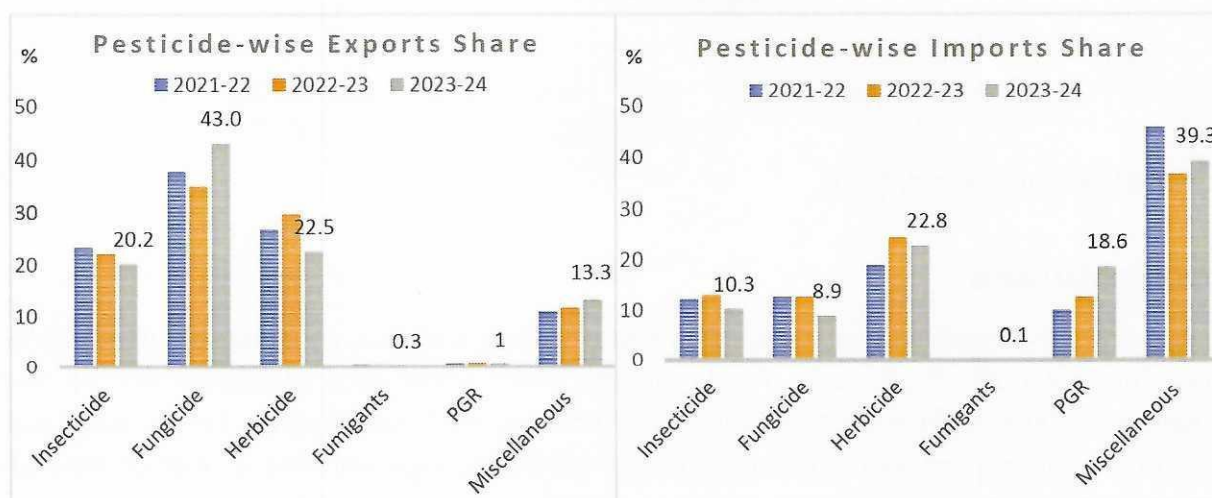
Source: Department of Fertilizers

Over time, the export of pesticides has gradually improved with fungicides and herbicides being the major ones. As India's production capacity has increased, it has become one of the largest global exporters for pesticides. India's import of PGRs come mostly from Germany, China and Malaysia.

Pesticide-wise Exports ('000 Tonnes)							
Category	Insecticide	Fungicide	Herbicide	Fumigants	PGR	Miscellaneous	Total
FY2019	128.83	167	99.05	1.75	2.75	52.26	451.66
FY2020	135.35	208.57	122.99	2.85	3.79	59.61	533.16
FY2021	151.11	244.16	174.14	3.17	4.77	70.71	648.05
FY2022	139.77	220.56	188.27	2.58	5.33	73.1	629.61
FY2023	129.54	275.48	144.45	2.23	4.51	85	641.22
CAGR	0.11%	10.53%	7.84%	4.97%	10.40%	10.22%	7.26%

Source: Directorate of Plant Protection, Quarantine and Storage

Source: Directorate of Plant Protection, Quarantine and Storage



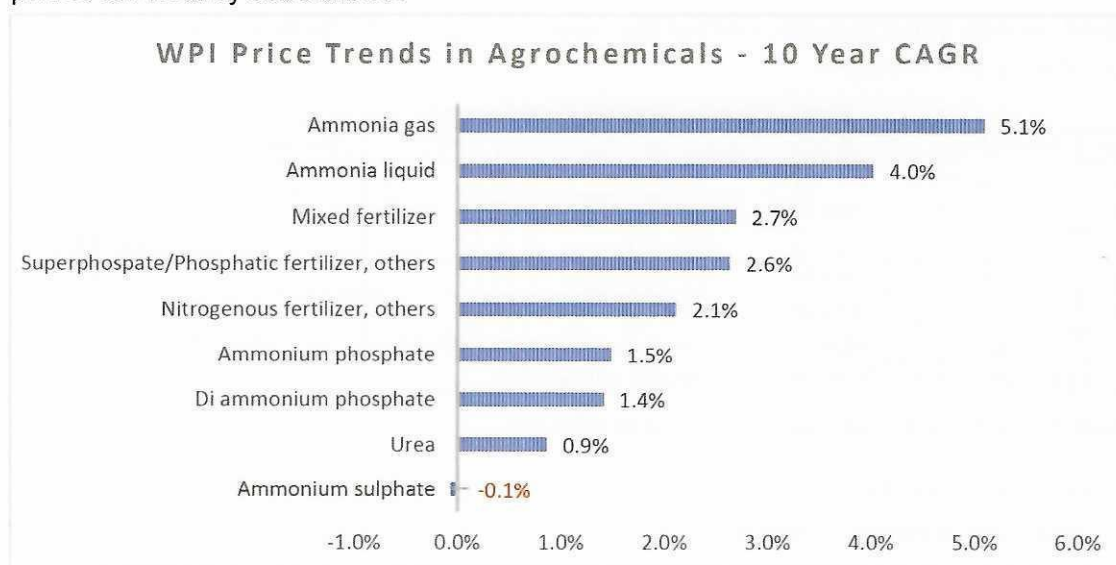
Pesticide-wise Imports ('000 Tonnes)							
Category	Insecticide	Fungicide	Herbicide	Fumigants	PGR	Miscellaneous	Total
FY2020	135.31	83.94	167.85	0.43	147.4	531.23	1066.16
FY2021	165.81	122.99	327.19	0.19	185.82	768.06	1570.06
FY2022	165.32	170.64	255.6	0.6	135.08	615.44	1342.69
FY2023	176.5	170.79	326.65	0	170.94	493.19	1338.07
FY2020	151.2	131.42	335.76	0.9	274.21	577.51	1470.99
CAGR	2.25%	9.38%	14.87%	15.92%	13.22%	1.68%	6.65%

Source: Directorate of Plant Protection, Quarantine and Storage

Demand and Supply

Agrochemical Price Movements in the Domestic Market

The Indian government does not directly fix or control the prices of agrochemicals but influences the prices indirectly through its policy measures. Despite sustained domestic demand, prices moved only marginally up over the years, reflecting adequate supply and government subsidies on fertilizers. According to the price trends from WPI, fertilizers saw a moderate rise and urea prices remained almost unchanged since last 10 years, as the prices are heavily subsidised.



Source: eaindustry.nic.in, CMIE

Market Drivers

India has the world's largest population and with that comes a considerable demand for food and agricultural products. Rising income levels, increasing population density and rapid urbanisation drive the need for enhanced crop yield. Additionally, foreign trade has become an important part of India's economy providing huge amounts of revenue through its exports. To keep up with this demand, agricultural producers are required to use agrochemicals to protect their crops and enhance yield.

Population growth: India is the most populated country in the world, and its population growth is the highest among countries. To match the rising demand for food and agricultural productions, agricultural output must be enhanced. Farmers can use pesticides and fertilizers to protect their crops and to enhance their output, allowing them to meet demand.

Chemical products like agrochemicals have been essential to ensure that India's food supply remains undisturbed.

Shrinking arable land: As urbanization continues the amount of land suitable for agriculture also declines as well. Furthermore, environmental degradation and overuse can turn once suitable farming land into a barren plot. As society progresses, farmers must be able to generate more output with far less land. This is only possible through the use of chemical additives such as fertilizers and pesticides, driving demand for these products.

Government subsidies: The government of India focuses on the agricultural sector to ensure output remains undisturbed. It has implemented several policies such as the Direct Benefit Transfer Scheme or the Nutrient Based Subsidy Scheme that provides subsidies to companies to encourage the sale of agrochemicals at lower prices. Other schemes include the Pradhan Mantri Fasal Bima Yojana and the Soil Health Card Scheme to encourage farmers to utilise agrochemicals in their farms to achieve greater output.

Precision farming adoption: With the advent of new technologies, there comes new farming techniques that are more efficient than the older ones. Precision farming involves the use of technologies and data analysis to determine the most efficient way to apply fertilizers and pesticides and at precise locations to enhance farm output. With these advancements in technology, farmers can use agrochemicals more effectively without worrying about the damage to the environment.

Global hub for agrochemical manufacturing: India is the fourth largest producer of agrochemicals and has become the second largest exporter, exporting worth USD 4.19 billion in FY2024. The government has identified agrochemicals as an important pillar of economic growth and have launched several initiatives to promote this sector such as Pradhan Mantri Fasal Bima Yojana (PMFBY) scheme that provides crop insurance to protect farmers from losses caused by natural disasters.

Climate change: Climate change has significantly affected the environment causing fluctuations in temperatures, alterations in rainfall patterns, changes in weather conditions and variations in water availability. These can affect agricultural practices, disrupting food supply and food quality. With the presence of these climatic disturbances, the need for agrochemicals increases.

Technological advancements: With the advancement of technology, new techniques for applying agrochemicals and more efficient agrochemical products are being developed to ensure that crops are well protected. Modern technologies such as drones allow for more efficient usage of agrochemicals.



Increasing digitalisation and availability of online markets: With the proliferation of the internet and the integration of online markets, it has become easier for people in villages and other remote areas to find out about agrochemicals and purchase for use in farms.

Expanding market for specialised agrochemicals driven by regulatory shifts and advanced formulations: There is a growing need for safer, high-performance agrochemicals driven by a mix of factors such as evolving regulatory frameworks, resistance management strategies, precision agriculture and changing weather conditions from climate change. These changing conditions necessitate the need for more specialised agrochemicals requiring companies to invest heavily in R&D to fulfil the demand. With multinational players outsourcing India for its cost-efficient production and strong R&D ecosystem, the country is poised to capitalise on technical exports, contract manufacturing, and eco-friendly crop protection solutions aligned with international quality standards.

GST 2.0 reforms to make agrochemicals and inputs more affordable for farmers: The GST rate on several critical agrochemical inputs used in the fertilizer sector such as sulphuric acid, nitric acid, and ammonia has been lowered from 18% to 5%, in a September 2025 announcement by GST council. Bio-pesticides (*Bacillus thuringiensis*, *Trichoderma* species, Neem-based pesticides, and micronutrients for fertilizers) and Gibberellic acid, a plant growth regulator, sees GST cut from 12% to 5%. The GST rate reduction will directly lower the input costs for manufacturers and distributors of fertilizers and agrochemicals. By making these products much more affordable for the farmers the demand also set to rise.

Challenges

- **Lack of available land:** Due to rapid urbanisation, land suitable for agriculture is decreasing posing a huge challenge for farmers and can reduce demand for agrochemicals due to suitable land not being available.
- **Lack of awareness:** Many Indian farmers have a lack of awareness and understanding of modern farming techniques and proper use of agrochemicals.
- **Cost of agrochemicals:** The high cost of agrochemicals prevents wide scale adoption by the small-scale farmers in India, who do not have the cash available to spend on such products. Small-scale farmers are among those who need access to agrochemicals to save their crops from disease and pests.
- **Regulatory risks:** The complex, lengthy, and expensive registration process for new molecules creates a high barrier to entry, stifling innovation and favouring only large, well-capitalised firms. Compounding this, the government's clear policy shift towards promoting organic farming and sustainable practices through financial incentives

threatens the traditional chemical market, forcing companies to urgently invest in bio-pesticides and bio-fertilizers to remain relevant.

- **Climate change impacts:** India's agriculture is acutely vulnerable to an increasingly erratic monsoon, with climate change intensifying droughts and floods that disrupt farming cycles and the application of agrochemicals. These extreme weather events directly suppress agricultural activity, leading to volatile and often reduced demand for pesticides and fertilizers as crop schedules are disrupted and yields are damaged. Altered pest dynamics and extreme weather conditions make it harder to develop and apply effective crop-protection strategies.
- **Increasing concerns about environment:** There are movements that push for the banning of agrochemicals to prevent further harm to the environment through soil degradation and pollution. Many consumers also demand pesticide-free produce out of health concerns.
- **Pesticide overuse:** Excessive or improper use of agrochemicals can lead to soil degradation, water pollution and harm to other species. Thus, careful application of agrochemicals is a necessity.
- **Health risks:** Residual pesticides in food can pose health risks to consumers and farmworkers increasing scrutiny from regulators.
- **Rise of alternatives:** Biopesticides, integrated pest management, bio-fertilizers and precision agriculture are emerging as substitutes, challenging traditional agrochemical markets.
- **Pest resistance:** Over time, pests develop resistance to chemical pesticides, rendering them ineffective and forcing industry to invest in research for new formulations.
- **Reliance on imports:** Heavy reliance on imported raw materials, such as crude oil for synthesis and potash for fertilizers creates significant supply chain vulnerability. In an era of heightened global geopolitical tensions and trade disputes, this dependency risks sudden price shocks or supply disruptions, which can directly cripple domestic production and availability of crucial agrochemical products.

Government Initiatives

- **Pradhan Mantri Fasal Bima Yojana (PMFBY):** The scheme aims to provide crop insurance to farmers. It provides financial protection from crop losses due to disease, natural disasters, and pests. The scheme aims to be cost affordable and covers over 50 crore farmers and provides insurance coverage for over 50 different crops. The schemes provide stabilities to the incomes of farmers and ensure that they can keep farming even if disaster strikes. It also encourages them to adopt modern and innovative farming techniques such as agrochemicals since it provides a safety net for farmers.

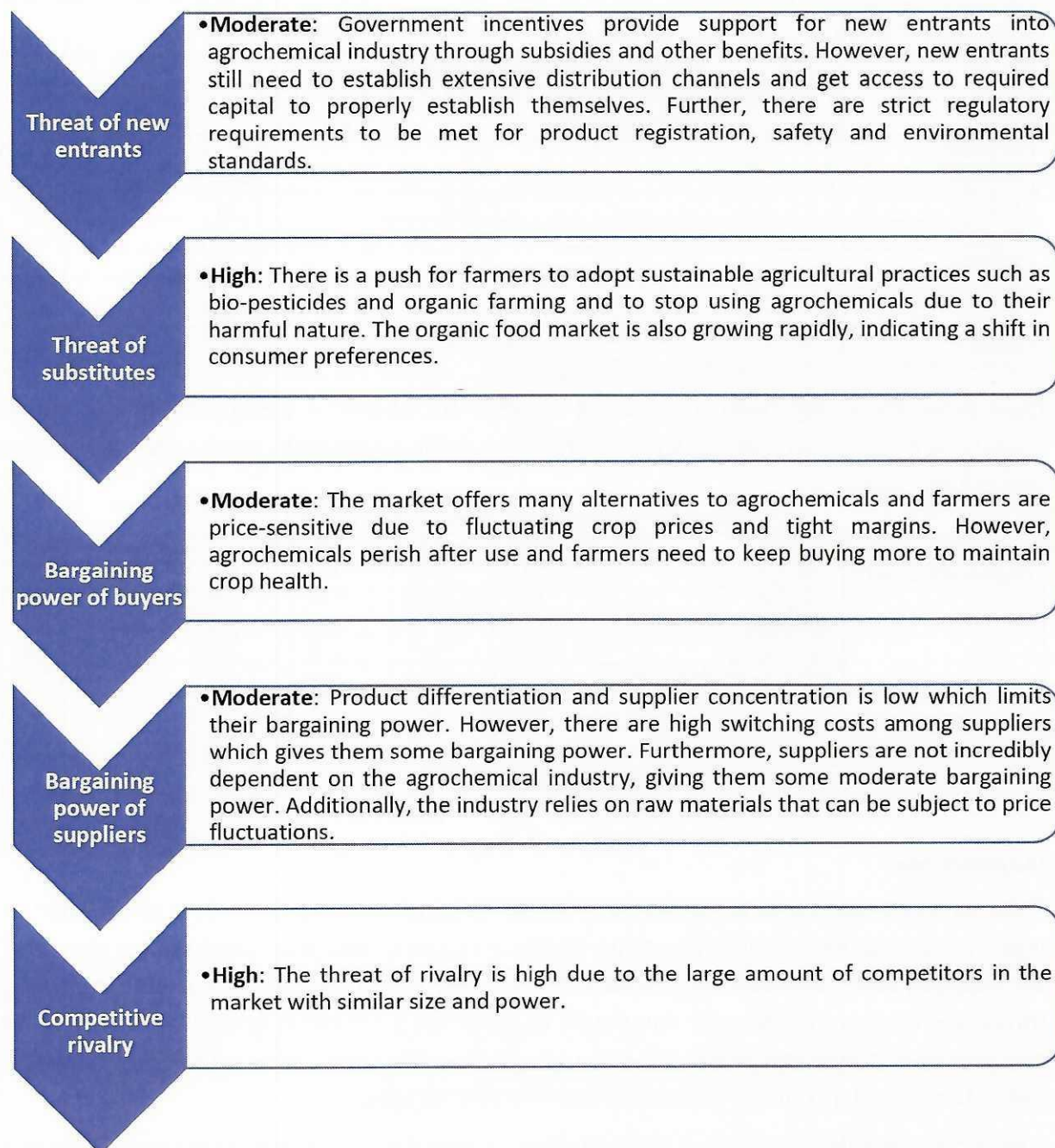


- **Direct Benefit Transfer (DBT):** The government has introduced the DBT scheme for fertilizer subsidy payments. Under this scheme, the subsidy transferred directly to fertilizer companies, based on their sales to farmers. Farmers can then directly buy fertilizers at subsidised prices.
- **Nutrient Based Subsidy (NBS):** Under the scheme, the subsidy is provided on specific Phosphatic and Potassic fertilizers, P&K fertilizers, based on their nutrient content to ensure balanced use of fertilizers and to improve soil quality through the application of these fertilizers.
- **Pradhan Mantri Bhartiya Jan Urvarak Pariyojana (PMBJP):** The one nation, one fertilizer scheme aims to make it easier for farmers to purchase fertilizers by standardising the name of fertilizer brands nationwide. Under this scheme, all types of fertilizers sold under the brand name, “Bharath” to make it easier for farmers to choose which type of fertilizer they want. This enhances demand and affordability of fertilizers.
- **ECPG:** The Export Promotion Capital Goods (EPCG) scheme, operational since 2015, allows agrochemical firms to import machinery with zero customs duty on the imports, provided they satisfy the necessary conditions. This enables agrochemical firms to import manufacturing equipment to aid in their operations with zero customs duty.
- **Soil Health Card Scheme (SHC):** The scheme was started in February 2015 and is still ongoing. The scheme was launched to aid state governments in issuing soil health cards to all farmers in the country. Soil health cards provide farmers with information about the nutrient status of their soil along with recommendations for what type of fertilizers to use and the appropriate dosage to improve their soil health and fertility.
- **Paramparagat Krishi Vikas Yojana (PKVY):** The scheme offers comprehensive support to farmers, providing support for the entire process from production to processing, certification and marketing through a cluster-based approach. The scheme aims to develop better supply chains for organic farming which also includes bio-fertilizers and bio-pesticides.
- **Kisan Credit Card:** The scheme was introduced with the aim of providing appropriate credit to farmers for their agricultural activities. The farmers can use the kisan credit card to buy agricultural inputs such as seeds, fertilizers, pesticides, etc. This scheme enables farmers to be able to afford agrochemical like pesticides and fertilizers, increasing demand for agrochemicals in India. Under this scheme, credit is available to farmers at a subsidised rate of 4% per annum.
- **PM-KISAN:** The scheme provides direct financial aid to farmers across India. Under this scheme, eligible farmers receive three equal instalments of 2000 Rs per year, totalling Rs 6,000 each year. The scheme ensures that farmers have enough money to be able to



support their livelihood through the purchase of agricultural inputs like pesticides and fertilizers and promotes agricultural growth.

Porter Five Forces



Potential of the Business Entity

Pesticides

There is a sizeable gap between the maximum production potential of pesticides in India and actual pesticide production. There is room for the pesticide industry to grow and the facilities to aid that growth have already been developed in India.

Demand for Pesticides ('000 tonnes)			
Year	Difference between installed capacity and production	Demand for Chemical Pesticides	Demand for Bio-Pesticides
FY2020	142	69.21	10.85
FY2021	116	70.67	11.05
FY2022	81	71.44	11.99
FY2023	131	76.48	10.78
FY2024	164	79.71	11.49
Projected Demand- FY2025		73.82	9.06
CAGR	2.92%	1.08%	-2.96%

Source: Directorate of plant protection, quarantine and storage

Over time, there has been a declining demand for chemical pesticides as the Indian government and consumers push for more sustainable alternatives such as bio-pesticides and organic farming.

Demand for Indigenous Pesticides ('000 tonnes)							
Category	Type	FY2020	FY2021	FY2022	FY2023	FY2024	CAGR
Chemical Pesticide	Insecticide	10.90	10.34	7.00	9.56	9.30	-3.13%
	Fungicide	9.76	11.92	11.70	7.66	7.45	-5.26%
	Herbicide	4.63	4.45	4.02	4.67	4.67	0.17%
	Rodenticide	0.32	0.41	0.41	0.45	0.47	7.99%
	Plant Growth Regulators	0.16	0.14	0.08	0.14	0.13	-4.07%
	Miscellaneous	0.00	0.83	0.80	0.71	0.74	-2.27%
Bio-Pesticide	Bio-Pesticide	5.72	1.84	6.31	5.77	6.15	1.46%
Total		31.48	29.91	30.32	28.96	28.91	-1.69%

Source: Directorate of plant protection, quarantine and storage

Insecticides

There is significant room for growth in insecticide production as the actual production of insecticides has not caught up with its installed capacity. However, demand for chemical insecticides and chemical fungicides has declined which will affect the industry going forward. There is minimal room for growth in herbicide production as well, as the demand remains muted over the years. Chances of expansion in rodenticide and PGR production remains minimal as current demand is not very encouraging.

Chemical pesticides are still a large market, demand for chemical pesticides is on the decline due to the push for sustainable farming. However, the company can also invest more in bio-pesticides to cater to the segment of consumers who demand safe alternatives to chemical pesticides.



Demand for Insecticides ('000 tonnes)			
Year	Installed Capacity	Production	Difference
Fungicides			
FY2022	130.0	122.8	7.2
FY2023	130.7	86.7	44
FY2024	139.9	110.1	29.8
Herbicides			
FY2022	72.3	60.8	11.5
FY2023	75.8	64.9	10.9
FY2024	72.2	59.2	13
Rodenticides			
FY2022	6.6	11.9	-5.3
FY2023	6.6	8.9	-2.3
FY2024	13.5	10	3.5
PGRs			
FY2022	2.8	2.8	0
FY2023	2.8	2.3	0.5
FY2024	2.8	2.6	0.2

Source: DCPC, Directorate of plant protection, quarantine and storage

Fertilizers

Fertilizers occupy major share in the agrochemical industry and demand is always high, so that farmers can produce large amounts of crops. The company can invest more in fertilizer production and distribution to tap the demand.

Competitive Analysis

The agrochemical market in India faces intense competition from both domestic and international players, in addition to current systematic risk such as regulatory restrictions, supply disruptions, import dependency etc. The intensity of competition varies across market segments, geographic regions, and product categories. To remain competitive, companies in this sector must continuously focus on reducing operating costs and improving overall efficiency to sustain their market position.

Key Financials: Industry Average *					
Particulars	FY2024	FY2023	FY2022	FY2021	FY2020
Sales (Rs. Millions)	66,408	94,794	71,569	51,188	48,663
Total Income (Rs. Millions)	39,699	95,741	72,568	51,639	49,550
Net Profit (Rs. Millions)	4,232	6,232	5,540	3,610	3,212
Net profit Growth (YoY)	6.37%	6.57%	7.74%	7.05%	6.60%
Sales Growth (YoY)	-19.74%	37.90%	38.34%	2.11%	-

* Calculated based on Top 11 companies and Shivchem, which comprise about 70% of the total industry sales.

Note: Sales growth rate has been calculated using total sales excluding the sales of UPL limited.

Source: EMIS, B2K Analytics



After COVID-19 pandemic, Indian Agrochemical Industry has seen sales growing at a rate of 38% in FY2022 and FY2023 but in FY2024 there has been a decrease in sales (19.74% YoY). This is partly because of geopolitical distribution leading to inventory buildup and price disruptions, downward pricing pressure due to oversupply from China, adverse climatic conditions and uneven spatial distribution of rainfall which impacted domestic agrochemical demand. Cost of raw material forms a major part of costs, salaries to employees account for 6% to 7% of sales. The industry operates at a net profit of nearly 6% to 7%.

Peer Analysis ⁵

Shivchem Agro Limited: The company was incorporated in 2021, and has witnessed a steady growth in sales (487% in FY2023, 379% in FY2024, 150% in FY2025) with an average net profit of 8.4% between FY2022 and FY2025. The company's debt to equity ratio eased to 30% in FY2025, 496% in FY2024, which is still very high compared to peers.

Sikko Industries Limited: In FY2025, the sales increased by 0.8% YoY, and the company's net profit slightly improved to 6.9% from 6.6% in FY2024. The debt-to-equity ratio stood at 0.1 in FY2025, current ratio at 3.4 times and working capital turnover at 1.0 times.

Bhaskar Agrochemicals Limited: Sales increased by 35.8% in FY2025 over FY2023 and net profit improved to 4.3% from 2.6%. Debt to equity ratio stood at 1.4 in both FY2025 and FY2024, while current ratio increased to 1.2 times (0.6) and working capital turnover turned positive at 13.8 times in FY2024 from -11.26 times in FY2024.

Bharat Rasayan Limited: In FY2025, sales improved by 12.3% over FY2024 largely due to higher exports. The company's net profit margin has increased to 10.7% in FY2025 from 7.81% in FY2024. Company's debt to equity ratio is at 0.1 times, while working capital turnover has declined to 1.4 times from 2.1 times in FY2024.

Meghmani Organics Limited: In FY2025, sales increased by 30.1% after reporting negative growth in FY2024 (-39.8%). The company's net profit margin turned positive in FY2025 after reporting a net loss of 3.7% in FY2024 due to pricing pressures in the industry and inventory build-up from the previous financial year. Company has a debt-to-equity ratio of 0.4. Company's working capital turnover has increased to 14.9 times in FY2025 from 13.2 in 2024.

UPL limited: Sales continued to decrease by 1.3% in FY2025 as well (- 71.26% in FY2024 compared to FY2023) mainly because of slump in sale of speciality chemical business,

⁵ See Annexure I for financial details of major industry players & Shivchem Agro Ltd.



which was transferred to UPL Speciality Limited, the wholly owned subsidiary of UPL Limited. The company's net profit margin jumped to 55.1% in FY2025 from 22.4% in FY2024 and 5.19% in FY2023 due to fall in operational cost and rise in dividend income. Company's working capital period has improved in FY2025 as compared to FY2024.

Dhanuka Agritech Limited: Company's sales growth improved by 15.7% in FY2025 from 3.43% in FY2024. The company enjoys higher net profit of 14% between FY2020 and FY2025 as compared to the industry average of ~7.0%. Company's debt to equity ratio was at 0.1 in FY2025, while the working capital turnover slightly moved up from 2.4 times in 2024 to 2.5 times in 2025.

Deepak Fertilizers & Petrochemicals Corporation Limited: In FY2025, company's sales improved by 1.5% after a negative growth of 18.2% in FY2024. The company enjoys an average net profit of 12% between FY2020 and FY2025. It's debt to equity ratio stood at 0.2 times and working capital turnover has decreased to 3.4 times from 12.5 times in 2024.

Indofil Industries Limited: Company's sales increased marginally by 0.73% in FY2024 as compared to FY2023 while the net profit has risen by 8.93% YoY, due to decrease in price of raw material and gain from cash flow hedge. Company's working capital turnover has been on the decline, which stood at 2.77 times in 2024 compared to 3.5 times in 2023.

Sharda Cropchem Limited: In FY2025, company's sales growth jumped to 40.7% after showing a decrease of -21.43% YoY in FY2024, mainly on account of decrease in export sales. Its net profit margin has been increased to 7.5% from 5.3% in FY2024. Company's debt to equity ratio stood at 0.2 times and working capital turnover at 2.5 times in FY2025.

Gharda Chemicals Limited: Company's sales fell by 26.47% in FY2024 compared to FY2023. The net profit has also decreased sharply from 14.15% in FY2023 to 3.30% in FY2024. The Company's debt to equity ratio stood at 7.04% in FY2024, with a working capital turnover of 1.24 times.

Godrej Agrovet Limited: In FY2025, the company's sales growth slid by -1.1% compared 3.0% in FY2024. The company made an average net profit of 5.8% between FY2020 to FY2025. Its debt-to-equity ratio stood high at 0.3 times, and working capital turnover at 2558 times in 2025.

Rashtriya Chemicals & Fertilizers Limited: The company's sales continued to decrease in FY2025 (-0.3% YoY) and 20.84% YoY in FY2024, mainly on account current systematic risk in the Indian agrochemical industry and decrease in government incentive for fertilizer. The company's net profit margin too remained muted at 1.4% in FY2025 as in FY2024 because of pricing pressures in the industry. Company has debt to equity ratio of 0.7 times, which is



very high as compared to its peers. Its working capital turnover has improved to 13.8 times in FY2025 from 9.78 times in FY2024.

Coromandel International Limited: In FY2025, the sales grew by 9.2% YoY after reporting a negative growth of 25.6% in FY2024. The company recorded an average net profit of 13.5% between FY2020 and FY2025. It's debt to equity ratio is at 0.04 times and working capital turnover remained at 3.8 times in 2025.

SWOT Analysis

Strengths:

- Wide spread of distribution network
- Diversified product portfolio
- On-field product demonstrations
- Manufacturing facility with ability to manufacture a wide range of products
- Enhanced efficiency through automated filling and packaging machines

Weaknesses:

- Environmental and Health Concerns: Harmful effects of chemical overuse on soil, water, biodiversity, and human health.
- Regulatory Hurdles: Stringent and varying regulations can slow down product approvals and increase costs.
- Dependency on Weather: Agrochemical demand and effectiveness can be significantly impacted by unpredictable weather patterns.
- High R&D Costs: Innovation is expensive and time-consuming with uncertain ROI.

Opportunities:

- Shift Towards Sustainable Products: Rising demand for organic and bio-based agrochemicals.
- Emerging Markets: Growing agriculture in developing regions presents new market potential.
- Public-Private Partnerships: Governments seeking food security are increasingly partnering with agrochemical firms.

Threats

- Resistance Development: Overuse of chemicals can lead to pest or weed resistance.
- Market Volatility: Fluctuating raw material prices and currency rates affect profitability.
- Consumer Pushback: Growing preference for organic produce may reduce conventional agrochemical use.
- Climate Change: Long-term changes in climate patterns may disrupt traditional farming practices.



Industry Outlook

The global agrochemical market has been forecasted to grow at a CAGR of 4.7% to reach USD 273.5 Billion by 2029 and the domestic market is projected to grow at a CAGR of 11.8% to USD 39.40 billion during the same period.

In India, agriculture holds prime importance and considered as the backbone of the economy. Given the governments thrust to augment farm production aided by policy support and schemes, the industry is expected to hold its potential to grow at a steady rate. However, increasing consumer focus on residue-free and organic food is shifting agricultural practices towards sustainability. This trend is likely to challenge conventional chemical-based agrochemicals and boost the demand for bio-pesticides.

There are good emerging trends and solutions for sustainable crop protection which include crop protection chemicals, agronomy, fertigation, seed treatment, bio-technology development etc. Advancements in agricultural technology have upgraded modern farming practices, leading to the widespread adoption of agrochemicals for efficient and sustainable crop management.

Indian manufacturers face competition from global players, especially from China in generic agrochemicals. India's push for self-reliance through schemes such as Make in India likely to encourage the domestic producers in the face of US-China trade tensions.

Overall, the Indian agrochemicals industry is poised for steady growth, driven by durable domestic demand, supportive government policies, and a shift toward sustainable and innovative solutions. However, it must address global supply chain risks, climate change, and regulatory challenges while embracing more sustainable farming practices.



Annexure I: Agrochemical Companies- Key Financials

Particulars	Shivchem Agro Limited			
	FY2025	FY2024	FY2023	FY2022
Sales (Rs crore)	27.5	11.0	2.3	0.4
Total Income (Rs crore)	27.5	11.0	2.3	0.4
Net Profit (Rs crore)	2.6	1.2	0.1	0.0
Net Profit	9.5%	11.3%	5.0%	7.9%
Sales Growth (YoY)	150.1%	380.3%	490.3%	-
Return on Assets	7.2%	7.6%	4.2%	4.5%
Employee Cost to Sales	12.2%	14.3%	4.2%	5.4%
EBITDA Margin	15.7%	17.8%	8.0%	11.7%
Debt Equity Ratio	0.3	5.0	6.1	4.6
Current Ratio	1.3	1.2	1.0	1.0
Working Capital Turnover Ratio	0.3	4.4	-37.7	22.7

Particulars	Sikko Industries Limited					
	FY2025	FY2024	FY2023	FY2022	FY2021	FY2020
Sales (Rs crore)	61.8	61.3	49.7	51.0	39.7	32.0
Total Income (Rs crore)	62.5	64.7	49.9	51.2	41.6	32.5
Net Profit (Rs crore)	4.3	4.1	2.9	1.9	2.6	2.4
Net Profit	6.9%	6.6%	5.8%	3.7%	6.6%	7.6%
Sales Growth (YoY)	0.8%	23.4%	-2.7%	28.7%	24.0%	18.9%
Return on Assets	4.0%	7.9%	6.4%	5.1%	5.8%	6.3%
Employee Cost to Sales	13.0%	10.0%	9.1%	5.8%	6.7%	10.0%
EBITDA Margin	11.5%	12.3%	10.2%	7.4%	11.5%	14.6%
Debt Equity Ratio	0.1	0.2	0.4	0.1	0.3	0.4
Current Ratio	3.4	2.1	2.0	2.2	1.6	1.6
Working Capital Turnover Ratio	1.0	2.5	2.4	2.8	2.5	2.4

Particulars	Bhaskar Agrochemicals Limited					
	FY2025	FY2024	FY2023	FY2022	FY2021	FY2020
Sales (Rs crore)	90.5	66.7	55.3	65.4	63.8	51.8
Total Income (Rs crore)	90.6	66.7	55.3	65.4	63.8	51.9
Net Profit (Rs crore)	3.9	1.7	0.2	1.1	0.9	0.6
Net Profit	4.3%	2.6%	0.4%	1.7%	1.3%	1.2%
Sales Growth (YoY)	35.8%	20.6%	-15.4%	2.4%	23.1%	0.3%
Return on Assets	6.7%	3.5%	0.5%	2.5%	2.7%	2.1%
Employee Cost to Sales	10.7%	11.1%	9.6%	6.4%	3.6%	3.3%
EBITDA Margin	10.1%	9.2%	8.6%	7.9%	5.0%	5.7%
Debt Equity Ratio	1.4	1.4	1.6	1.5	1.1	1.2
Current Ratio	1.2	0.6	1.0	1.0	0.8	0.7
Working Capital Turnover Ratio	13.8	-11.3	0.9	0.6	-2.9	-5.0

Particulars	Bharat Rasayan Limited					
	FY2025	FY2024	FY2023	FY2022	FY2021	FY2020
Sales (Rs crore)	1173.0	1044.6	1234.3	1301.2	1092.0	1215.1
Total Income (Rs crore)	1199.0	1065.5	1253.7	1316.8	1099.1	1231.9
Net Profit (Rs crore)	125.1	81.6	130.8	177.1	164.5	157.6
Net Profit	10.7%	7.8%	10.6%	13.6%	15.1%	13.0%
Sales Growth (YoY)	12.3%	-15.4%	-5.1%	19.2%	-10.1%	22.5%
Return on Assets	9.0%	6.9%	12.1%	16.2%	18.1%	21.0%
Employee Cost to Sales	7.3%	8.1%	7.1%	7.0%	7.3%	5.7%
EBITDA Margin	17.1%	13.7%	17.6%	20.8%	22.6%	20.2%
Debt Equity Ratio	0.1	0.1	0.1	0.3	0.1	0.2
Current Ratio	4.2	3.6	4.6	2.6	3.8	3.4
Working Capital Turnover Ratio	1.4	2.1	2.0	2.6	2.3	3.3

Particulars	Meghmani Organics Limited					
	FY2025	FY2024	FY2023	FY2022	FY2021	FY2020
Sales (Rs crore)	2,003.9	1,539.9	2,556.7	2,494.0	1,623.4	693.2
Total Income (Rs crore)	2,047.4	1,582.8	2,652.7	2,590.2	1,648.2	693.2
Net Profit (Rs crore)	66.4	-56.6	250.4	308.0	185.0	156.6
Net Profit	3.3%	-3.7%	9.8%	12.4%	11.4%	22.6%
Sales Growth (YoY)	30.1%	-39.8%	2.5%	53.6%	134.2%	-50.9%
Return on Assets	2.3%	-2.0%	8.3%	11.3%	9.4%	9.5%
Employee Cost to Sales	4.7%	6.5%	4.7%	4.7%	6.2%	5.5%
EBITDA Margin	11.2%	3.4%	18.0%	19.1%	18.8%	18.1%
Debt Equity Ratio	0.4	0.4	0.5	0.4	0.3	0.2
Current Ratio	1.1	1.1	1.4	1.4	1.6	1.4
Working Capital Turnover Ratio	14.9	13.2	6.0	6.1	4.3	3.5

Particulars	UPL Limited					
	FY2025	FY2024	FY2023	FY2022	FY2021	FY2020
Sales (Rs crore)	5,330.0	5,398.0	18,783.0	16,449.0	11,345.0	9,641.0
Total Income (Rs crore)	5,477.0	6,202.0	19,245.0	17,080.0	11,458.0	10,147.0
Net Profit (Rs crore)	2,939.0	891.0	975.0	1,176.0	220.0	461.0
Net Profit	55.1%	22.4%	5.2%	7.2%	1.9%	4.8%
Sales Growth (YoY)	-1.3%	-71.3%	14.2%	45.0%	17.7%	11.3%
Return on Assets	16.4%	7.1%	5.4%	6.0%	1.4%	3.3%
Employee Cost to Sales	3.6%	2.1%	4.4%	4.7%	6.0%	6.7%
EBITDA Margin	5.6%	22.3%	14.6%	16.3%	15.3%	17.8%
Debt Equity Ratio	0.1	0.3	0.1	0.3	0.2	0.2
Current Ratio	1.6	0.8	1.1	1.1	1.1	1.1
Working Capital Turnover Ratio	1.9	-7.7	33.2	11.5	24.5	17.1

Particulars	Dhanuka Agritech Limited					
	FY2025	FY2024	FY2023	FY2022	FY2021	FY2020
Sales (Rs crore)	2,035.2	1,758.5	1,700.2	1,477.8	1,387.5	1,120.1
Total Income (Rs crore)	2,071.3	1,793.5	1,745.0	1,511.4	1,421.2	1,145.2
Net Profit (Rs crore)	297.0	239.1	233.5	208.8	210.6	141.5
Net Profit	14.6%	13.6%	13.7%	14.1%	15.2%	12.6%
Sales Growth (YoY)	15.7%	3.4%	15.1%	6.5%	23.9%	11.4%
Return on Assets	16.5%	15.1%	16.6%	15.9%	18.6%	15.2%
Employee Cost to Sales	8.5%	8.8%	7.4%	8.2%	8.5%	9.4%
EBITDA Margin	22.2%	20.6%	19.0%	20.1%	21.8%	17.7%
Debt Equity Ratio	0.1	0.1	0.1	0.1	0.2	0.1
Current Ratio	3.3	3.7	3.0	3.1	3.1	3.4
Working Capital Turnover Ratio	2.5	2.4	2.8	2.3	2.4	2.4

Particulars	Deepak Fertilisers & Petrochemicals Corporation Limited					
	FY2025	FY2024	FY2023	FY2022	FY2021	FY2020
Sales (Rs crore)	1,950.7	2,121.8	2,483.9	2,377.6	1,857.2	1,775.5
Total Income (Rs crore)	2,204.5	1,922.5	2,349.8	2,289.4	1,811.3	1,707.8
Net Profit (Rs crore)	413.0	313.4	291.3	197.8	209.0	30.7
Net Profit	21.2%	16.3%	12.4%	8.6%	11.5%	1.8%
Sales Growth (YoY)	1.5%	-18.2%	2.6%	26.4%	6.1%	-45.8%
Return on Assets	9.3%	7.8%	7.6%	5.2%	6.4%	1.0%
Employee Cost to Sales	6.3%	6.0%	3.2%	3.7%	4.9%	4.0%
EBITDA Margin	33.0%	27.8%	21.6%	18.2%	23.9%	10.5%
Debt Equity Ratio	0.2	0.1	0.1	0.2	0.4	0.5
Current Ratio	1.8	1.3	1.3	1.3	1.3	1.2
Working Capital Turnover Ratio	3.4	12.5	15.6	12.4	10.3	16.1



Particulars	Indofil Industries Limited					
	FY2025	FY2024	FY2023	FY2022	FY2021	FY2020
Sales (Rs crore)	NA	2,793.7	2,847.1	2,673.6	2,286.8	2,037.4
Total Income (Rs crore)	NA	2,831.2	2,887.1	2,730.5	2,303.5	2,079.8
Net Profit (Rs crore)	NA	229.8	189.7	175.8	128.8	67.2
Net Profit	NA	8.9%	6.2%	7.4%	2.0%	3.6%
Sales Growth (YoY)	NA	0.7%	9.0%	15.1%	9.6%	-1.6%
Return on Assets	NA	5.3%	4.5%	5.4%	1.4%	2.2%
Employee Cost to Sales	NA	7.1%	6.5%	7.8%	8.9%	10.0%
EBITDA Margin	NA	14.8%	12.5%	13.8%	16.6%	9.7%
Debt Equity Ratio	NA	0.1	0.2	0.3	0.4	0.5
Current Ratio	NA	2.3	1.9	1.5	1.5	1.3
Working Capital Turnover Ratio	NA	2.8	3.5	3.8	4.8	5.9

Particulars	Sharda Cropchem Limited					
	FY2025	FY2024	FY2023	FY2022	FY2021	FY2020
Sales (Rs crore)	3,661.1	2,602.7	3,312.7	2,946.4	2,032.6	1,616.1
Total Income (Rs crore)	3,835.9	2,873.5	3,486.3	2,994.8	2,113.5	1,746.4
Net Profit (Rs crore)	273.7	136.8	324.7	282.9	209.8	191.9
Net Profit	7.5%	5.3%	9.8%	9.6%	10.3%	11.9%
Sales Growth (YoY)	40.7%	-21.4%	12.4%	45.0%	25.8%	0.6%
Return on Assets	6.2%	3.6%	8.1%	8.3%	7.8%	8.8%
Employee Cost to Sales	1.1%	1.3%	1.1%	1.2%	1.5%	1.7%
EBITDA Margin	16.9%	17.1%	20.0%	21.7%	22.5%	21.5%
Debt Equity Ratio	0.2	0.3	0.2	0.2	0.1	0.1
Current Ratio	1.8	1.8	1.6	1.6	1.8	1.9
Working Capital Turnover Ratio	2.5	2.1	3.1	3.0	2.4	2.2

Particulars	Gharda Chemicals Limited					
	FY2025	FY2024	FY2023	FY2022	FY2021	FY2020
Sales (Rs crore)	NA	2,760.3	3,754.0	3,622.7	2,638.9	2,593.1
Total Income (Rs crore)	NA	2,801.9	3,900.7	3,728.2	2,700.1	2,694.3
Net Profit (Rs crore)	NA	91.1	531.1	536.2	317.7	445.1
Net Profit	NA	3.3%	14.2%	14.8%	12.0%	17.2%
Sales Growth (YoY)	NA	-26.5%	3.6%	37.3%	1.8%	-6.0%
Return on Assets	NA	1.7%	9.7%	11.2%	7.8%	12.0%
Employee Cost to Sales	NA	9.9%	8.4%	8.5%	10.9%	9.6%
EBITDA Margin	NA	11.2%	23.7%	24.6%	25.7%	28.9%
Debt Equity Ratio	NA	0.1	0.1	0.0	0.0	0.0
Current Ratio	NA	3.8	3.3	3.8	3.9	3.9
Working Capital Turnover Ratio	NA	1.2	1.6	1.5	1.3	1.5

Particulars	Godrej Agrovet Limited					
	FY2025	FY2024	FY2023	FY2022	FY2021	FY2020
Sales (Rs crore)	7,009.1	7,087.8	6,884.4	6,182.6	4,413.0	5,118.7
Total Income (Rs crore)	7,118.0	7,164.4	7,014.1	6,289.3	4,513.8	5,159.7
Net Profit (Rs crore)	502.6	357.1	303.6	360.2	279.0	293.3
Net Profit	7.2%	5.0%	4.4%	5.8%	6.3%	5.7%
Sales Growth (YoY)	-1.1%	3.0%	11.4%	40.1%	-13.8%	18.0%
Return on Assets	11.5%	9.1%	8.1%	9.4%	8.6%	9.0%
Employee Cost to Sales	4.5%	4.5%	3.9%	4.4%	5.2%	4.2%
EBITDA Margin	12.4%	9.2%	8.0%	9.6%	10.7%	9.0%
Debt Equity Ratio	0.3	0.3	0.4	0.6	0.5	0.4
Current Ratio	1.0	1.1	1.1	1.1	1.2	1.0
Working Capital Turnover Ratio	2558.1	84.9	94.6	27.8	16.7	196.7

Particulars	Rashtriya Chemicals & Fertilizers Limited					
	FY2025	FY2024	FY2023	FY2022	FY2021	FY2020
Sales (Rs crore)	16,934	16,981	21,452	12,812	8,281	9,698
Total Income (Rs crore)	17,098	17,147	21,595	12,949	8,414	9,827
Net Profit (Rs crore)	242	228	967	704	373	208
Net Profit	1.4%	1.3%	4.5%	5.5%	4.5%	2.2%
Sales Growth (YoY)	-0.3%	-20.8%	67.4%	54.7%	-14.6%	9.1%
Return on Assets	2.2%	2.0%	10.0%	6.7%	4.9%	2.0%
Employee Cost to Sales	3.5%	3.2%	3.2%	5.1%	6.8%	6.4%
EBITDA Margin	5.0%	4.0%	7.5%	8.8%	10.5%	7.3%
Debt Equity Ratio	0.7	0.9	0.5	0.8	0.7	1.6
Current Ratio	1.3	1.3	1.6	1.3	1.7	1.2
Working Capital Turnover Ratio	13.8	9.8	10.4	7.5	5.0	6.9

Particulars	Coromandel International Limited					
	FY2025	FY2024	FY2023	FY2022	FY2021	FY2020
Sales (Rs crore)	24,064	22,308	29,784	19,231	14,231	13,155
Total Income (Rs crore)	24,428	22,029	29,610	19,088	14,156	13,117
Net Profit (Rs crore)	1,941	1,719	2,035	1,412	1,313	1,059
Net Profit	8.1%	7.8%	6.9%	7.4%	9.3%	8.1%
Sales Growth (YoY)	9.2%	-25.6%	55.1%	34.8%	7.9%	-0.7%
Return on Assets	10.6%	11.0%	14.3%	12.6%	14.7%	10.4%
Employee Cost to Sales	3.2%	3.1%	2.2%	3.1%	3.8%	3.5%
EBITDA Margin	12.6%	12.2%	10.4%	11.4%	14.4%	13.5%
Debt Equity Ratio	0.0	0.0	0.0	0.0	0.0	0.5
Current Ratio	2.0	2.1	1.8	1.9	2.0	1.4
Working Capital Turnover Ratio	3.8	3.5	6.6	5.0	4.5	5.5

1. Sales: Net sales of the company.
2. Total income: Total of net sales of the company and other income of the company.
3. Net profit: Net profit divided by net sales revenue of the company
4. Sales growth: Net sales of current financial year divided by net sales of previous financial year of the company.
5. ROA: Net profit divided by assets of the company.
6. Employee cost to sales: Salaries and employee benefits divided by net sales of the company.
7. EBITDA margin: EBITDA divided by net sales of the company. EBITDA is earning of the company before interest, taxes, depreciation and amortisation.
8. Debt equity ratio: Debt divide by equity of the company.
9. Current ratio: Current ratio divided by current liabilities of the company.
10. Working capital turnover: Net sales divided by net of current assets and current liability of the company.

Note: For peer comparison, standalone financial statements have been considered.

Source: EMIS, B2K Analytics



Annexure II: Correlation Analysis - Rainfall Scenarios and Production of Foodgrains and Agrochemicals

Growth Scenarios	Above Normal	Below Normal	Normal	Deficient	Analysis	Insights
Rainfall and Gross area sown (Foodgrains)	0.29 (weak +)	-0.57 (moderate -)	0.88 (strong +)	0.03 (weak)	When rainfall is "well above" the Long Period Average (LPA), soil-moisture is already adequate, and acreage expansion hits a practical ceiling. In "below normal" monsoon years, risk-averse farmers cut acreage quickly to avoid seed loss, while in "normal" monsoons the confidence of farmers increases because of the reliable and manageable water window leading to acreage expansion.	Farmers confident of expand sowing when rainfall is "just right," and not when it floods or drizzles.
Gross area sown (Foodgrains) and Foodgrains production	-0.97 (strong -)	0.9 (strong +)	0.90 (strong +)	0.53 (moderate +)	If rainfall is "above-normal" excess moisture damages crop germination and increases fungal disease, diluting yields of the large sown areas. "Below normal" and "normal" seasons push farmers to expand sowing as each additional hectare contributes directly to output. This shows the effectiveness of irrigation and agronomic practices especially when rainfall patterns remain within predictable bounds.	Additional sown area helps higher output except when too much rain damages yield.
Foodgrains production and Pesticide production	-0.12 (weak)	0.95 (strong +)	0.19 (weak +)	-0.75 (strong -)	Pest incidence peaks when humidity is moderate and soils are mildly stressed, explaining the strong positive correlation during below-normal rainfall. Drought years suppress both crop and pest populations, creating a strong negative relationship. Above-normal rains wash away pests and chemicals alike, erasing linkage.	Pesticide demand surges only in "slightly dry" years when pests thrive but crops still grow.
Foodgrains production and Fertilizer production	-0.60 (moderate -)	0.99 (strong +)	-0.33 (weak -)	-0.38 (weak -)	Fertilizer application is the key compensatory strategy during below-normal rainfall years to improve production. Farmers apply more nutrients to squeeze yield from stressed soils. In wet years, excessive rainfall can cause nutrient leaching and waterlogging. Excess water/flood washes away key plant nutrients. Hence additional inputs may not translate into higher yields resulting negative correlation.	Fertilizer sales boom when rains are below normal but not during floods or drought.
Gross area sown (Foodgrains) and Pesticides production	0.35 (weak +)	1.00 (perfect +)	0.33 (weak +)	-0.90 (strong -)	Perfect positive correlation during below normal years reflects near-linear scaling. Every additional hectare invites proportional pesticide to use because pest pressure and risk premiums rise. In droughts, reduced sowing and pest inactivity drive a sharp negative link.	More sown land equals more pesticide only when the monsoon is slightly weak.
Gross area sown (Foodgrains) and Fertilizers production	0.42 (moderate +)	0.99 (strong +)	-0.26 (weak -)	-0.50 (moderate -)	Farmers pair fertilizer usage with acreage expansion mainly when rainfall is mildly deficient. In droughts, fertilizer use collapses with acreage as water becomes the binding constraint.	Fertilizer tracks sown area only when rainfall is somewhat low.

Note: - This analysis is made on simple linear correlation and presented for indicative analysis and should be interpreted as evidence of cause and effect as foodgrains production, pesticide and fertilizer use will also be affected by many other factors other than those mentioned in our analysis such as, soil conditions, input prices, irrigation, and technological changes.

Source: CMIE, B2K analytics

