

AGRI STIMULUS

Opportunity for India becoming a global agro-chemical manufacturing hub



Indian agro-chemical industry is currently valued at USD 5.74 billion, of which domestic market accounts for USD 2.74 billion and exports account for USD 3 billion. At present, India ranks fourth in terms of agro-chemical production after US, Japan and China. The industry is growing at the CAGR of 8-10% and will reach USD 8.1 billion by 2025. Some of the major trends driving this growth includes, increasing focus on digitization, evolving go-to-market models like e-commerce, direct selling to FPOs, and increased use of specialty products such as bio fertilizers and bio-pesticides. However, the industry is still facing some challenges such as lack of awareness among farmers, low and non-scientific usage of agro-chemicals, high dependence on generic molecules,

complex and regularly changing regulatory processes e.g. recent changes in Pesticide Management Bill in India.

India has a great opportunity to make itself a global manufacturing hub for agro-chemicals leveraging its talent pool, low-cost manufacturing, better price realization globally and strong presence in manufacturing of generic technicals and formulations. Indian companies have been focusing on exports owing to seasonal domestic demand and huge potential in foreign markets. Indian Government is promoting cluster-based development that is expected to boost competitiveness in exports and domestic sales by reducing manufacturing and logistics cost. Products worth USD 4.2 billion globally are expected to go off patent by 2023 that will present opportunity for manufacturing 26 active ingredients as generic molecules. There is a fall in manufacturing capacity and exports of agrochemicals from China due to stringent environmental norms, crackdown on the polluting chemical industry, impending duties from US on Chinese products and global effort to reduce dependency on China for inputs and finished products. These provides India to become a leading global manufacturing hub of agrochemicals.

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The changing face of Agro-chemical industry

Articles

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- ⇒ Role of CRAMS in Evolving Agrochemical Industry

Industry Speak (Prashant Hegde, Chief Executive Officer (CEO) - Agri business, PI Industries Ltd)

Agri Industry Outlook 2021

News

Many large companies have already started developing backward integration for key products by setting up in-house manufacturing facilities for key ingredients and enhancing their manufacturing capabilities. Indian agro-chemical companies have already started taking steps in that direction by expanding their distribution channels (eg. UPL is setting up USD 53 million unit in Gujarat, Indofil too expanded its unit in Gujarat), creating brands, innovating process technology for off-patent molecules, developing better product mix (more combination products, eco-friendly formulations), becoming aggressive about registering off-patent products, and

developing relationship with distributors to push volumes at more competitive prices than innovators. Many companies have adopted the strategy of mergers and acquisitions, collaborations and joint ventures that makes them less dependent on outsourced suppliers. Collaborating with MNCs by manufacturing and marketing their products can also open up a huge potential for domestic agro-chemical companies.

Looking at the overall manufacturing sector, the proactive and business friendly environment in India is an added advantage. Many global players have penetrated Indian market through mergers and acquisitions route. Highlighting the case in point for Japanese companies which have shown great passion for investing in the evolving Indian agro-chemical industry. Mitsui and Nisso jointly have acquired 56% Stake in Bharat Insecticides Limited, in 2016, Sumitomo Chemical acquired the majority interest in Excel Crop Care Ltd., in 2018, Sumitomo Corporation and its Summit Agro founded a subsidiary Sumisho Agro in India, which engages in agrochemicals trading business in the country, Nissan Chemical has longstanding partnerships with Indian firms such as Insecticides India and Dhanuka and many more.

However, there are some challenges in Indian agro-chemical industry which needs to be addressed. India heavily relies on China for raw materials and intermediates supply to manufacture agro-chemicals. Further to this, Indian agro-chemical industry lacks independent research and development capacities. Indian agro-chemical sector generally spends 1-2 % of their turnover on R&D whereas it is around 5-10% in developed countries. Strengthening on R&D requires high capital investments and long gestation period of 3-5 years. This has led India's agrochemical industry to focus more on generics rather than developing new molecules.

For India to be a global manufacturing hub for agro-chemicals, the industry needs to focus on increasing investments in R&D, collaboration with R&D labs and research institutions, adding to manufacturing capacities. Government is planning to introduce Production linked incentives (PLI) scheme to encourage new manufacturing projects. This is one of the key innovative schemes that is both WTO compliant as it is not subsidizing exports and exports-oriented at the same time. The PLI scheme is structured in such a way that provides a production threshold over

which the incentives will kick-in, indirectly pushing the companies under PLI to export the excess production (beyond the domestic demand). The PLI scheme has worked well for pharma, mobile manufacturing and is expected to provide right incentives to Indian companies and will help India become one of the leading manufacturing hubs for global agrochemical industry.

Policy makers need to focus on incentivizing the manufacturing of finished products and intermediates along with ease of doing business. There is also a need to tone down the regulatory practices making it more stable through minimizing shocks and surprises, invest in on-ground inspection and execution capabilities. Focus on R&D and developing new products will also add to India's intellectual property that will be helpful for companies in longer run. The current scenario is relevant for Indian agro-chemical sector to grow and be a global manufacturing hub. It will be interesting to see the extent at which the industry can utilize the advantages and evolve accordingly, which will decide its future.

Role of CRAMS in Evolving Agrochemical Industry

Over the last few decades, the agro-chemical industry has been continuously evolving owing to the changing needs such as emerging new pests, safety and environment-friendliness, biodiversity protection, resistance management, climate changes, and efficient product utilization rate. Approximately 80% global market is dominated by generics and new active ingredients account for only

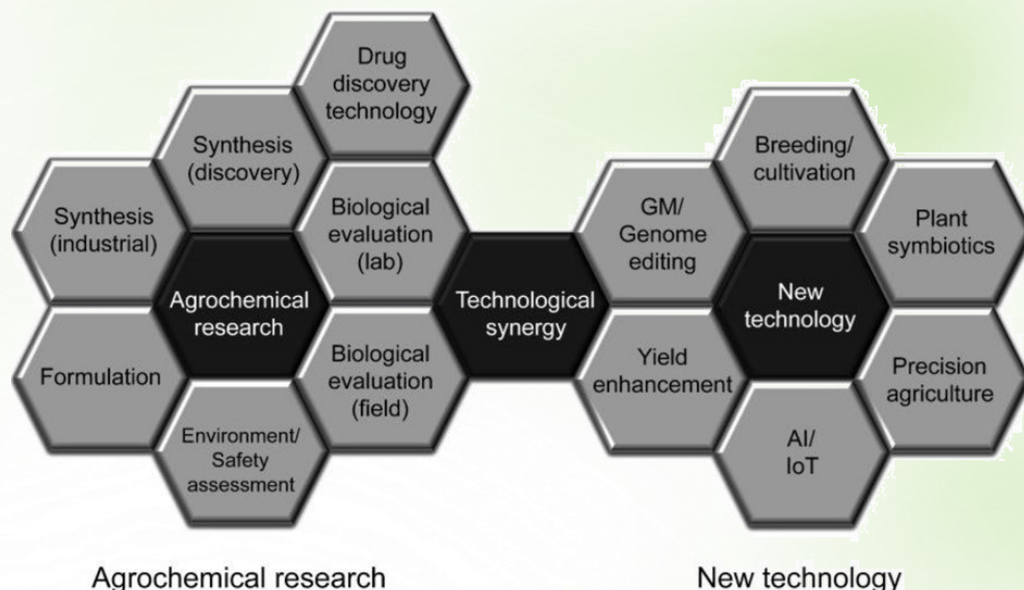
20%. The generics developed in developing markets, have grown significantly in the last decade because China and India, the leading manufactures in Asia take the lead in production of the off patent technicals and formulations. The rate of new active ingredients entering the market has significantly declined owing to longer product development cycles (~11 years), huge amounts of

investments (~\$286Million) and rigid [regulations](#). To tackle these issues, industry players are diversifying into integrated pest management (IPM) and precision farming. The companies are exploring outsourcing of various stages of research testing and manufacturing to contract research organizations (CROs) and contract manufacturing organizations (CMOs)

collectively known as CRAMS (Contract Research and Manufacturing Services) for economic as well as strategic purposes. The global market for CRAMS is expected to grow at a CAGR of 10% from 2020-2024 and CROs are playing a critical role in its growth. CROs offer expertise, ensure quality, and provide sustainable solutions and have become an integral part of the crop protection business as they offer tailored solutions that frees up companies' time and resources.

Agrochemical sector is one of the most heavily regulated ones and the regulatory guidelines change rapidly forcing companies to supply more data to meet regulations, conduct more testing at different locations and risk assessment analysis to remain competitive. This has changed the relationship between CROs and Agrochemical companies from 'buyer-supplier' relationship to 'strategic partners' in the last decade. Selection of CROs is key as they play a critical role in meeting the global harmonised guidelines for regulatory approvals. CROs also undertake field trials and lab studies and offer the complete bouquet of services for registration of the molecules.

MNCs like BASF, Bayer and Syngenta are already outsourcing more than 70% of their production to either Europe, China or India. The increasing costs in Europe and the COVID-19 pandemic has helped India become one of the favourable destinations for manufacturing of agrochemicals and availing services from CROs and the past year has witnessed an increase in volume too. In this rapidly growing sector,



A map showing technology trends in agricultural sector

currently the leading CRAMS/CROs in India include, JRF global, UPL, PI Industries, SRF, Tata Chemicals, Rallis India, and Dhanuka Agritech which not only offer CRO services but also contract manufacturing services. These CRAMS providers cater to various needs including agricultural experimentation, regulatory affairs and consultancy, coordination of registration dossiers in plant-protection and nutrition and provide services for field and laboratory testing and regulatory registrations.

Custom Synthesis and Manufacturing (CSM) is another trend in agrochemical industry which has been gaining importance. The CSM companies not only offer Custom research but also custom manufacturing services to innovator companies. The agrochemical companies define the quality of the molecule and the custom synthesis companies develop new synthesis route. Once the process has been developed, it becomes economical to produce the same molecule in higher

quantity rather than new molecules. They also conduct evaluations and field trials of these agrochemicals. China is one of the leading countries for custom synthesis, however, India is emerging as one of the leading hubs for the desired services with European sources often providing local backward integration and full independence from Chinese raw material sources. In India, PI Industries, and SRF are globally popular for custom synthesis of agrochemical molecules.

The players in India for CRAMS, and custom synthesis are few and the market is fragmented and will be expanding with increasing demand of outsourcing services. India can soon become the hub for custom synthesis and manufacturing and CROs in agrochemicals with increasing number of GLP and NABL accredited labs, centres with quality infrastructure offering services, increasing expertise and new supporting government policies.

INDUSTRY SPEAK

Industry's view on changing dynamics of Indian agrochemical sector

Agriculture continue to remain central to the Indian economy, contributing nearly 18% to our GDP. In India more than 50% of the population still depends on Agriculture for livelihood. As a result, a sectors like seeds, fertilizers, agrochemicals have a far reaching impact on Indian economy, driven by major government interventions and actions.

Indian agriculture sector faces some of the unique challenge like monsoon dependency, low productivity, lack of awareness of input use, low arable land, declining soil fertility, water scarcity and high post-harvest loss. Every year around 20% of crop output is lost due to attacks by weeds, diseases and pests worth INR 45,000 crores. Population of India is currently at 1.3 billion and is likely to rise to 1.7 billion by 2050. With the growing population, India will not only have to raise its agricultural production, but also the productivity to ensure its food and nutrition security. For sustainable agriculture, efficient use of crop protection solutions plays vital importance.

Indian crop protection industry is 4th largest in the world with a value of ₹40,000 crore divided almost equally, between India's domestic consumption and exports. But in spite of its huge market, agrochemical consumption per hectare amounts to 0.6kg /ha, that is significantly low as compared to global

norms. Insecticides dominate the crop protection industry in India with about 50 per cent market share followed by herbicides & fungicides. One of the factor for low yield per hectare is attributed to inadequate crop protection measures. Increasing population and ever-increasing demand for food necessitate the use of agrochemicals to increase the productivity.

With increase in awareness regarding environment conservation, the industry has also introduced various eco-friendly pest management products. The industry has been educating consumers that all chemicals are not harmful and also working on increasing awareness about judicious use of chemicals and good agricultural practices (GAP) at the farmers level.

Due to low level of agro chemical consumption in India as compared to global norms, agro chemical industry has huge unrealized potential for growth. Besides increasing in domestic consumption, the exports by the Indian Agrochemicals Industry can be doubled in the next four years if the right strategies and technologies are adopted by the industry. The role of agrochemicals in achieving the vision of USD 5 trillion economy by 2025 cannot be undermined, as it not only ensures food security, provides livelihoods but also provides impetus to the growth of industries and service sectors. One of the key challenges for











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many companies is high R&D cost, as it takes 8-10 years to develop a new molecule and is also very expensive affair. Many companies in India typically have not focused on developing newer molecules and are facing challenges in building these capabilities, while continuing to remain cost competitive. Govt intervention in the area of improving certain infrastructures like pesticides testing laboratories, improving sampling process, strengthening of registration and importing process will boost the right investment and also help in the growth of agrochemical industry.

Agri Industry Outlook 2021






Factors providing impetus for the seed industry



-  Increasing SRR and Hybridization rates to drive growth of the industry
-  Increased government initiatives to boost R&D in the industry will help in addressing emerging challenges of climate change and stagnant yields
-  Broad based breeding programs with appropriate access to genetic resources aligned with changing biotic and abiotic stress, market and consumer requirements to define the industry research ecosystem
-  Clear policy on modern breeding techniques like Gene editing may catalyze increased investments in crop research
-  New era value added products including novel chemical and biological treatments, nano material and Biological coated Seeds, Plant growth promoting Rhizo microbe-Inoculants, seed insurance schemes to bring in growth for the sector
-  Seed traceability systems coupled with data analytics for quality control will be a key driver for the industry advancement
-  Synchronized and systematic farmer sensitization and demonstration of newer products and its varieties will help in delivering desired genetic gains
-  Promising government initiatives like eNAM, increased MSPs, PM Kisan Samman Nidhi (distribution of direct benefit transfer) to enhance farmer returns and encourage adoption of improved quality seeds



Remodeling the agro chemical industry

- Agrochemical sector to witness sharp growth: Increased area under cultivation and increased MSP for key crops to witness enhanced consumption of agrochemicals. 
- Price moderation of key imported raw materials (with improving supplies from China) and enhanced revenue will increase operating profitability of most agrochemical companies 
- Government initiatives like production-linked incentive (PLI) to promote domestic manufacturing of agrochemicals. Further initiatives to encourage R&D for boosting domestic manufacturing, tax exemptions and land allocation to drive additional manufacturing capabilities of domestic companies 
- Portfolio diversification with environment friendly products like biofertilizers, biostimulants, biopesticides & organic products 
- To drive efficiency and growth by transitioning to digital platforms (farmer apps, dealer management systems), shifting to direct selling platforms (organized retail, e-commerce) from traditional channels as well as monetizing farming services (spraying of agro chemicals, real time advisory services). 

The Agritech way– digitizing the agri value chain

-  Strong policy support, smarter innovations fueled by greater private capital lending for the sector and an unprecedented adoption of technology to drive growth for the sector
-  Supply chain technology & output market linkages is expected to be the segment with highest market potential.
-  High growth expected among startups providing precision agriculture and farm management services. Intelligent prediction and active monitoring offering potential for increased yield is expected to drive the growth
-  Integration of value chain across segments by key players are expected to boost growth and maximize margins
-  FMCG players expected to increase efficiency by venturing into the sector through vertical integration of their supply chain by adoption of technological solutions
-  Many Strategic partnerships with Corporates & FPOs are expected to act as catalyst and help in scaling up the development
-  Data driven & value chain financing will have major share in the transformation of resilient Agriculture ecosystem



NEWS

Paddy procurement reaches 487.92 lakh tonnes for Kharif marketing season

Food Corporation of India (FCI) and the state agencies have purchased 487.92 lakh tonnes of paddy worth Rs 92,121 crore so far in the ongoing Kharif marketing season with Punjab contributing 41.55 per cent of total procurement. 62.28 lakh farmers have been benefitted from the ongoing KMS procurement operations.

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Strategic collaboration between Heliae and Rizobacter to improve crop health

The strategic collaboration between Heliae® Agriculture and Rizobacter, a subsidiary of Bioceres Crop Solutions Corp., will enable merger of comprehensive biological solutions into products and technologies driving higher yields in farmers' fields. Integration of these two businesses will allow improvement in soil health and improvement in crop performance and health.

[Read more](#)

'Crop Darpan' set to replace field-level agri expert

The 'Crop Darpan' app developed by Indian Institute of Information Technology (IIIT-Hyderabad) assists farmers in getting instant prescription for their crops infested with pests or disease. The app currently available in two languages offers solutions for all diseases and challenges related to cotton.

[Read more](#)

Potato production likely to be higher in Bengal and UP

Increase in the area under cultivation and better yields are likely to boost potato production in the key growing states of UP, Punjab and West Bengal. The exact increase in production can be estimated by the end of January as harvesting is yet to happen in many growing regions.

[Read more](#)

Farmers Market established by Producer Corporation to promote their produce

First of its kind farmer's market set up with the support of 35 Farmers Producer Companies (FPCs) in Satara district of Maharashtra to advertise and sell the produce under one roof. Everything from greens to food grains will be sold here.

[Read more](#)

Normalization of demand leads to inflation in food

As most of the countries are moving towards normalization in demand, food inflation has been observed owing to stock piling by China, pandemic uncertainties, easy liquidity and very low global interest rates. The food Price Index has risen to a six year high in December.

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Surge in India's Basmati rice exports to European Countries

Rising demand for basmati rice in Belgium and Netherlands has resulted in a better price realisation for farmers from the basmati rice-growing areas in Punjab and Haryana. India's Basmati exports to Belgium have increased 60% in the first eight months of the current financial year, while imports by the Netherlands have almost doubled. The export quality variety 1121 Pusa, has been fetching a 15 % higher price at the farmgate.

[Read more](#)

Respite for consumers with record harvest of food grains

Record harvest of pulses, grains and edible oil this winter season likely to drag prices down by 10-15%. The crop area of oil seeds and pulses have gone up by 6.16 % and 4.67 % respectively over last year indicating a better output of these commodities. Moderate rains in wheat, mustard and pulses growing areas have raised hopes for bumper harvest.

[Read more](#)

Wheat sowing touches 325.35 lakh hectares this Rabi season

Wheat sowing has increased by 4 % to 325.35 lakh hectare compared to 313.95 lakh hectare in the same period last year contributed mainly from Madhya Pradesh, Bihar and Maharashtra. There was an increase in the acreage of pulses too by 5 % to 154.8 lakh hectares.

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Opportunities for Indian seed companies in Western and Central Africa

Seed regulatory compliance key to ensure FTO for a seed company

Indian seed sector- A lucrative opportunity for investment

Biopesticides a critical component in crop protection portfolio

Market entry strategy / Investment opportunity for Seed and CP companies into India

Agri-tech set to bloom on huge investments!

Consolidating the company's IP assets in a holding company to ensure it is ring-fenced & protected

Blogs



Embracing opportunities towards building a self-sufficiency in the agrochemical industry



Need for Bio-stimulants Regulations in Indian Agriculture



Agrochemicals – Sustainability Challenges

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