

Choosing a Balanced Approach Towards Agrochem Sustainability

The global agrochemicals industry is currently valued at \$216 billion and is expected to grow at a CAGR of 3.4 per cent by 2025, according to Markets and Markets report. Agricultural intensification is a key driver of agrochemical industry's growth because of rising food demand and decreasing agricultural land. In addition, the agriculturally-dependent developing economies of the world will fuel this expansion. With sustainability in the agrochem industry as the key driver, let's understand its impact on the Indian agriculture sector.

Agrochemical consumption in Europe and Asia Pacific accounts for about half of global consumption. Around 85 per cent of the world's agrochemical exports come from these regions, making them the global manufacturing and exporting hub for agrochemicals. Many agricultural crops have seen significant increases in yields thanks to the widespread use of agrochemicals.

Sustainable agriculture relies on efficient application of crop protection systems. The chemical industry has been working hard to inform the public that new crop solution chemicals are less hazardous to human health and the environment because they degrade quickly when used in conjunction with prudent chemical usage and sound farming practices (GAP).

The agrochemical sector has recently been identified by the government as one of the 12 Champion Sectors, where India can be a global hub for manufacturing and export. India is already a critical player in the global supply-chain. The Indian agrochemical industry is worth Rs 500 billion and has the potential to grow to Rs 800 billion by 2026, out of which exports are estimated to be around 60 per cent. The prospect of the sector is promising given the low penetration of agrochemicals in India at 0.4 kg/ha as compared to up to 13 kg/ha in USA, Japan, China or other countries, The key demand drivers



are growing population, changing food habits and nutritional needs, crop diversification, climate change, new invasive pests, etc.

India ranks fifth in terms of agrochemical production and fourth in terms of exports. According to PwC Research report, the Indian agrochemicals industry was valued at approximately Rs 42,000 crore in FY20, with domestic consumption totaling approximately Rs 20,000 crore and exports totaling approximately Rs 22,000 crore during the same period. The Indian agrochemical industry is gradually changing its practices to be more environmentally friendly. Businesses have begun to implement zero-emission solutions, which has

resulted in significant benefits. By implementing zero discharge solutions, agrochemical companies can recover more than 80 per cent of water, reduce COD levels by 40 times, and TDS levels by 60 times, enabling them to comply with government regulations, reduce liability costs, maintain uninterrupted production, and reduce production costs.

Elaborating further on bringing more sustainability in the country's agro-chemical sector, Asitava Sen, Chief Executive Officer, CropLife India said, "India has vast agro-climatic diversity and limited farmland and needs a wide range of crop protection products. Climate change and changing cropping patterns are causing new pests and diseases. According to government sources, 15-25 per cent of Indian agriculture production is lost annually due to pests. One of the reasons for lower agricultural productivity is low use of crop protection. Crop protection therefore is a key enabler of the government's objectives of food security, doubling farmer incomes and safer food through introduction of newer and better products."

The industry is well-regulated by both Central and State Governments and checks and balances exist to regulate product quality, movement and usage. Bio-pesticides and bio-stimulants are also being promoted by the government and have great prospects going forward.

"The way forward towards sustainability is a balanced approach – safe and judicious use of newer, safer and better chemical and non-chemical products, Integrated Pest Management and promotion of better application technologies such as drones," added Sen.

Commenting similar thoughts, Bhavesh Shah, Managing Director, GSP Crop Science said, "In 2023 GSP will be focusing on providing effective solutions to the farmers rather than products. With the new technology coming and the government being optimistic on the future of Agtech we want to incorporate these to help farmers get better yield. We hope to set up drone services for the farmers to help reduce their labour and save them time. We will also be increasing our focus on sustainability. We are working with KPMG to create a new ESG strategy and plans."

Sharing his views on agri losses Raju Kapoor, Director, Industry and Public Affairs, FMC Corporation said, "With an estimated crop loss

of above Rs 2 trillion per annum due to pests, coupled with very low level of pesticides usage of 340g/ha (compared to most developing agriculture economies), there is a strong role that agrochemicals can play in protecting food sufficiency and quality of agriculture produce in India, with very favourable cost-benefit ratio."

Challenges on the ground

Weeds, pests, and diseases cause massive loss to the Indian agriculture sector every year and this can account for 20 per cent of the total crop production. In order to feed its expanding population, India will have to increase agricultural output and productivity. Indian agriculture has the potential to become a major contributor to the global demand for farm products, supported by new initiatives in agricultural technology improvement.

India is already a net exporter in the agrochemical sector. Therefore, the topic of imports needs to be looked at holistically and factually, and not with a narrow perspective, so that stakeholders in the service of Indian agriculture are not misguided with motivated claims and narrow perceptions. Indigenisation of raw materials, intermediaries and the active ingredients should be the main agenda for "Atmanirbhar Bharat" strategy for the sector. However, import of Readymade Formulations of new for-India single molecules or their different combinations help the farmers in combating resistance, climate change, new invasive pests and in improving the competitiveness of Indian agricultural produce internationally. Stifling formulation imports, which constitutes a small portion of total imports, will mean starving the Indian agriculture of novel, safer, new age, innovative products and depending more and more on older chemistries. Once these new imported solutions get adopted by the farmers, the local manufacturing commences and supports 'Make in India'. Formulations imports are then converted to the manufacture of formulation and then to manufacturing of the technical in India.

"We cannot therefore have a dual policy of stifling formulations imports in India yet promote formulations export; and recommend retaining a uniform basic customs duty of 10 per cent for both Technical raw material and for Formulations," added Sen.

Technology can become catalyst

An example of digital agriculture is the recent adoption of 'Kisan Drones' or Drones deployed for Farming. The use of drones for spraying agrochemicals touches several aspects of sustainability such as greater accuracy and precision; higher efficiency, lower water consumption, operator safety, creation of new jobs and entrepreneurship. As per the Government of India, an agricultural drone is used to help optimise agriculture operations, increase crop production, and monitor crop growth by assessing and mapping different nutrients and efficient spraying of soil/ crop nutrients.

Drones can significantly alleviate labour pressure on agricultural operations like applying fertilisers, while enhancing the crop coverage per day. This will save significant time. Farmers can use the time saved to carry out other activities. They will also be able to respond quickly to biotic challenges. Ministry of Agriculture and Farmers Welfare issued guidelines to make drone technology affordable to the stakeholders of this sector. The guidelines of "Sub-Mission on Agricultural Mechanization" (SMAM) have been amended which envisages granting upto 100 per cent of the cost of agriculture drone or Rs. 10 lakh, whichever is less, as grant for purchase of drones by the Farm Machinery Training & Testing Institutes, ICAR institutes, Krishi Vigyan Kendras and State Agriculture Universities for taking up large scale demonstrations of this technology on the farmers' fields.

As per Drone Rules, 2021, operation of drones in zones marked red and yellow on the drone airspace map zones requires permission from the Central Government and the Air Traffic Control (ATC) authority respectively. No permission is required to operate a drone in a green zone which is where most of the drone operations currently happen.

"It's a perfect time as the Drones' policy framework is in place; we should look into how all stakeholders can work together to help develop a Conducive Ecosystem for Drone Applications in Agriculture and specifically Agrochemical Spraying," stated Sen.

In order to make agriculture more sustainable, agrochemical companies and the government must focus on the farmers' acceptance and adoption of the new technology,



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products, and practices. Farmers are already directly connected to the agrochemical industry through awareness and demand campaigns. The industry's relationships are a huge asset when it comes to spreading knowledge about environmentally friendly products and practices. Responsible pesticide promotion in accordance with label approval is also critical for mitigating any unknown environmental risks exposure. Additionally, the infrastructure and trained human resources present a significant opportunity to promote sustainable agricultural practices, given the network's micro-level reach across the country. AS

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