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In her budget speech, Indian Sitaraman spoke about the drone shakti scheme, encouraging drones as a service in our country. Undoubtedly, drones have evolved from defenseonly equipment to multi-purpose equipment, which can be used for several sectors like governance, farming, logistics, to name a few. The finance minister proposed extensive use of drones in agriculture, including spraying insecticides and nutrients. The proposed drones-as-a-service (DRaaS) model has capabilities to revamp and boost India's fragmented drone industry for new business and employment avenues. Under the drone shakti scheme, startups will be encouraged to facilitate drone shakti with its application in multiple sectors. In select ITIs, the required courses for skilling will be started in all states, as per the finance minister.

Though drones have existed for the last two decades, the last few years have been very significant in the evolution of Unmanned Aerial Vehicles. Whether we call it Flying Mini Robots or Miniature Pilotless Aircraft, major drone activities can be identified as flight piloting & operation, data analysis, and data processing. Drones are built using IOT technology, which includes a controller from which launch, navigation, and landing activities are controlled either with the help of remote controls, mobile apps, or automated. The controllers of radioactive waves such as wifi. Like any other active device, drones are also equipped with propellers, rotors, and a frame. drones are made up of composite and lightweight materials so that their weight is considerably low with better transportability. Drones are not only help-

Drones are not only helping the military, but they are also helping businesses with complex activities normally undoable by humans in a timely and effective way. The adoption of drones by businesses is quick as companies across the globe have identified the infinitive potential of drones. It boosts speed, productivity, and efficiency and improves accuracy. Drones are majorly used for Express shipping and deliv-



Drones can reach remote areas with little or no human interference and within the least required effort, time, and energy, says PRABHAT SINHA

ery, Unmanned cargo transport, Aerial photography for journalism and film, gathering information for effective disaster management, Thermal sensor drones for search and rescue operations, Geographic mapping of inaccessible terrain and locations, building safety inspections, Crops monitoring and assessments, Border control surveillance and Law enforcement, Weather forecast for storm tracking, hurricanes, and tornadoes. Drones can reach remote areas with little or no human interference and within the least required effort, time, and energy. Consequently, drones are getting adopted worldwide, specifically by Military, Commercial, Personal, and Future Tachmedoer.

Technology. Recently, the Ministry of Civil Aviation approved a project of the Telangana state Government to use drone technology to deliver vaccines in remote areas. A lot depends upon drone technology for the growth of the Agriculture sector. Drones will spray pesticides and micronutrients evenly in farms and be used extensively to monitor crops and identify the challenges faced by farmers. The SVAMITVA scheme launched by the government has helped millions of village residents with property cards. Drones can be effectively used for emergency services like fire protection, healthcare, and flood relief where human intervention risks life. Police departments of several states use drones for law enforcement activities like - search and rescue, crime scene analysis, surveillance, crowd monitoring, etc. Recently Bihar police have started using drones to trace liquor manufacturers and distributors located in remote and densely populated areas to enforce the liquor ban. An Irish company named

An Irish company named Manna began its drone delivery services last year. According to



Prabhat Sinha IT Expert & Arrazon Bestseller Author of Innovate & Seize Your Success

them, drone delivery is 90 per cent cheaper than car-based delivery. The drone industry looks promising as the drone service market is expected to grow threefold to US\$ 40.7 billion in 2026 from the recent market worth of 13.9 billion in 2021. To boost the growth of the drone sector, the government has banned the import of drones and their raw materials. Lockdown imposed during COVID 19 grew the growth of drone technology as companies, and government organizations started using it exponentially. Major companies like Amazon Prime Air, Zomato, FedEx, Boeing, DHL International GmBH, drone Delivery Canada Corp, Airbus have already started their drone delivery services. The drone sector has become a lucrative career option for youths with rapid growth opportunities. It has the potential to grow and penetrate several other industries with ample employment opportunities. The growing use of drones in multiple sectors has several associated risks like drone attacks, delivery of weapons, increased terrorism, to name a few. drones are comparatively cheaper than conventional weapons but still can be destructive with a far better reach. Apparently, the number of drone strikes is increasing, we also encountered a drone attack in our country at Jammu airport last year. Consequently, DRDO has developed an antidrone system, and another is in development. The Anti-drone system has soft kill and hard kill options available. Soft kill option shoots down the drone with the help of laser technology, other drone or missile. Government should make strict laws and regulations to prevent the destructive use of drones. Further defense drones should not be procured for nondefense purposes under any circumstances.

Govt to provide financial assistance for drone purchase by custom hiring centres

OUR BUREAU

Mangaluru, March 22 The Centre supports and facilitates the State governments through various Centrallysponsored and Central sector schemes to infuse new technologies into the agriculture sector, including agricultural drones, according to Narendra Singh Tomar, Union Minister for Agriculture and Farmers Welfare.

In a reply in the Lok Sabha on Tuesday, he highlighted the steps taken to promote use of drones in agriculture and make drone technology af-



fordable to the farmers and other stakeholders of this sector.

75% grant for FPOs

Farmers Producers Organizations (FPOs) are provided grants at 75 per cent for purchase of drone for its demonstration on the farmers' fields.

In order to provide agricultural services through drone application, financial assistance at 40 per cent of the basic cost of drone and its attachments or ₹4 lakh, whichever is less, is also provided for drone purchase by existing and new Custom Hiring Centers (CHCs) under cooperative society of farmers, FPOs and rural entrepreneurs.

He said the agriculture graduates establishing CHCs are eligible to receive financial assistance at 50 per cent of the cost of drone up to a maximum ₹5 lakh. Added to this, the Government is implementing the National e-Governance Plan in Agriculture (NeGP-A).

Funds are released for sanctioning projects involving use of modern information technologies such as artificial intelligence and machine learning, blockchain technology, Internet of Things, Robotics, etc and for customisation/shifting of web and mobile applications already developed by the States, to the platform to be developed using digital/emerging technologies, he said.

Jail term in proposed fertiliser law may go

Centre likely to decriminalise draft provisions, lower penalties

PRABHUDUTTA MISHRA

New Delhi, March 17 The government is likely to decriminalise offences listed in the proposed law on fertiliser following public criticism of "jail term" provision forviolation of rules, which is also seen as against the policy of the current government's ethos of "minimum government and maximum governance"

In its "Chintan Shivir" held last week, Fertiliser Ministry officials indicated that changes could be made as per the feedback received from close to 1,000 stakeholders after compiling the suggestions and further holding deliberations with them, industry sources said. "The punishment will be tweaked as per type and severity and maybe only a toned-down penalty provision is retained while doing away with imprisonment," said an industry official who was present in the deliberations with the government.

Penalty provision

According to section 41 (2) and Section 41(6) of the draft Integrated Plant Nutrition Management Bill, manufacturer, retailer, importer and dealer are liable to serve a jail term of "not less than six months but which may extend to three years" if convicted for selling or distributing misbranded or spurious fertiliser besides upto ₹25



Definition of the term "fertiliser" could be changed

lakh penalty. On March 15, Consumer Affairs Minister Piyush Goyal had said several consumer organisations opposed his efforts to decriminalise the Legal Metrology Act, 2009, which enforces standards related to weights and measures. In its present form, the law prescribes imprisonment, in addition to a fine, for the second or subsequent offences. The law should not become a "tool of harassment", Goyal had said. Other provisions where changes could be made include the definition of the term "fertiliser", the procedure of registration, prosecution of offence and sample testing, sources said. This is just a preliminary response from the government and more changes in the Bill could be accepted when deliberations are held, the sources said.

Suggestions

The government insisted that the Bill has been prepared as per the recommendation of the parliamentary standing committee and the need for the Fertiliser Ministry to deal with the sector better. Earlier, the demand for fertiliser was based on States assessment which was only compiled by the Union Agriculture Ministry, whereas under the proposed law, the exercise will lie entirely with Ministry of Fertiliser, sources said.

Among some major responses received by the government include the proposed Integrated Plant Nutrition Management Authority of India should focus more on research and innovreduction ations. in quantum of penalty subject to batch size of product, no suo-motu congnizance of irregularities and restricted power to inspectors, physical blending units under customised fertiliser, inclusion of physical mixing of nutrients in definition of fertiliser, price control or movement allocation should be restricted only to subsidised fertilisers and definition of subsidised fertiliser in a separate chapter with more clarity.

BEST CEO - AGRICULTURE & ALLIED

Speed of Thought

Mayank Singhal speaks as fast as he thinks. It reflects on his company's growth

By Alokesh Bhattacharyya

▶ IF YOU THINK you speak fast, you should meet Mayank Singhal. The Vice Chairman and MD of PI Industries, a major player in agrochemicals, can dumbfound you by his speed of thought and speech. And his company's growth is a worthy match. More important is the consistency. Despite the Covid-19 pandemic, PI Industries has grown its revenue and profits each year since 2018. And in the first nine months of FY22, it has grown its revenue and PAT by 16 per cent and 14 per cent, respectively. Plus, PI's margins are way higher than its industry peers. "Our focus is to be on the higher end of the value chain with more complexities, which offer exceptional margins," explains Singhal, an easy pick for the jury of the *BT*-PwC India's Best CEOs ranking as the winner in the agri and allied sector.

PI sells insecticides, fungicides, herbicides, etc., under its own brands, and also provides R&D and CSM (custom synthesis manufacturing) services to large agrochemical companies globally. "We initially had very strong inroads in Japan, then we moved into Europe, the American continent, and now Brazil and some other parts of the world," says Singhal of his company which has 75 per cent of its revenue coming from overseas.

With so much expertise in chemicals and chemistry, it was but natural for Singhal—and PI—to move into pharmaceuticals. "We will start with intermediates, then look at APIs, and eventually move into the CDMO (contract development and manufacturing organisation) model," says Singhal. Anil R., Analyst at Geojit Financial Services, is bullish about PI's growth potential: "The company's focus is going to be on value-added products. They have strong R&D, and have the capacity and technical knowledge."

The company is aiming for 20-25 per cent growth over the next several years. "We are looking at the M&A route in the pharma space to catapult to the next level, and also working on certain organic approaches internally," says Singhal, whose colleagues say "dynamism" is the word that best describes him. More like dynamite, we think. BT





READY FOR ACTION Mayank Singhal, Vice Chairman and MD, PI Industries

Key Highlights

O PI Industries has grown its topline and bottom line even during the pandemic

Profit margins are the best in the industry

• The company wants to leverage its experience in chemistry to enter pharmaceuticals

• Around 75% of the company's revenues come from overseas markets such as Japan, the US, Europe and Brazil, among others

• Singhal is confident of growing topline at 25% YoY for the next few years

Agriculture & Allied Mayank Singhal Vice Chairman & MD, Pl Industries

Revenue from **FY21** 4,276.20 operations Q3 FY22 1,302.60 Profit before tax **FY21** 910.00 Q3 FY22 258.60 Profit after tax **FY21** 718.90 Q3 FY22 214.80 **RoE (%)** 18.25 **Market Cap** 39,541.53

● Standalone results; all figures in ₹ crore except RoE

• M-cap as of February 7

Data Source: BSE, ACE Equity

Budget 22-23 announced eight special schemes for agriculture

Kishore Kumar Biswas

The Union Budget 2022-23 is being challenged by many observers and experts for somewhat neglecting the agricultural sector. This is because the FM did not address many key areas of the agricultural sector which were expected to be addressed. The Budget had no special announcement on MSP. On the other hand, it entailed substantial cut of subsidy amounts for agriculture and fertilisers. The total expenditure allocation in agriculture in FY 22-23 has been ₹1,05,710 crore. This is marginally less than that of FY 21-22. The allocation on fertilisers is ₹1,05,222 crore for FY 22-23 which is less than the allocation in FY 21-22 by 24.9%. At the same time, the FM made eight important announcements that may help the agricultural sector.

Firstly, the FM focused on the need to implement digital high-tech services to farmers, which she announced, will be initiated in PPP mode. Secondly, she announced start-up funds for agriculture and rural enterprises. For this, a scheme was announced where blended capital will be facilitated through NABARD. The fund will be raised under the co-investment model with a view to finance start-ups for agriculture and rural enterprises which are relevant for the farm produce value chain. The start-ups should be involved in some specific activities including providing machinery for farmers on a rental basis at the farm level and in promotion of technology involved in IT based support for farmers' producers' organisations (FPOs). Thirdly, the FM proposed the Ken Betwa Link Project. In this project, five river links, namely Damanganga-Pinjal, Par-Tapi-Narmada, Godabari-Krishna, Krishna-Penar and Penar-Kavery have been finalised. The project aims to provide irrigation facilities to 9.08 lakh hectares of farm lands, provide drinking water supply for 62 lakh people and create 103 MW of hydro and 27 MW of solar power. This project has a total estimate of ₹44,605 crore. For this year, ₹4,300 crore (RE) and ₹1,400 crore for FY 22-23 has been announced by the FM. Fourthly, the FM emphasised on kisan drones. This has been used in developed countries for many years. The use of kisan drones will be ensure enhanced crop assessment, digitisation of land records and more



free neutral farming was highlighted and it was stated that such chemical free farming will be gradually promoted all through the country. It would start with 5-kilometre-wide farm tracks along the banks of River Ganga in the initial stages. Sixthly, the FM announced specified support for millet products. In India, there is huge scope for increasing millet production. Millet can be used for variety of purposes - ranging from human consumption to animal feed. It is also a very important source for the food processing industry. Seventhly, the Budget focused on schemes for oilseed production. It is known that almost twothirds of the total oil consumption in India depends on import. The Government of India wants to intervene and increase oil seed production by allotting specified funds for this purpose. Lastly, food processing has been given additional attention. The Budget has provided a well-planned package for this segment. Through this focused attention, the government will help farmers in choosing suitable varieties of fruits and vegetables. Additionally, the Budget has also stressed on implementing appropriate syllabi of agricultural universities with a view to meet the needs of natural, zero-budget and organic farming.

Agriculture, the stress ridden rural economy and the allocation

It should be noted that the economy had been in a crisis phase from before the pandemic. Falling GDP in the three to four years before that pandemic - from more than 8% to close to 3% - in the quarters just preceding the pandemic bears witness to that crisis.

Government policies during the pandemic had actually intensified the crisis. Agriculture was the only sector that maintained its growth. But even the farm sector is suffering from declining income and rising costs. Observers think that the rising cost will go up further after the five state elections as the central government can push up electricity and petroleum prices yet again. Given the level of distress in the rural and agriculture economy, the Budget was expected to provide for protection of incomes, employment and basic services to the

Govt aims to fast-track drone adoption in farming sector

AGENCIES New Delhi

Three concerned departments of the government are working jointly to fast track drone adoption in the farm sector, according to a senior official of the Directorate of Plant Protection, Quarantine and Storage (DPPQS) Ravi Prakash.

The Central Insecticide Board and Registration Committee (CIB&RC) under the DPPQS has received applications from eight crop protection companies seeking permission for conducting trials of drones, he said.

Discussing the issue virtually at an industry roundtable organised by CropLife India and nonprofit body ThinkAg, Prakash said drones are affordable for farmers and help in superior produce.

"The Directorate General of Civil Aviation (DGCA), the agriculture ministry



The government has govt applications from crop protection cos for drone trials

and CIB&RC are working jointly to fast track applications and adoption of drones in the agriculture sector, including crop health monitoring and spraying of soil nutrients," Prakash having said at the roundtable discussion, according to a statement.

Industry body CropLife India CEO Asitava Sen said the policy framework on drones is in place and it is the perfect time to promote drones in the farm sector.

"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," he said.

National Institute of Plant Health Management (NIPHM) Joint Director -Plant Health Engineering, Vidhu Kampurath P said, "NIPHM has developed a ten-day integrated training module for both flight and spraving for drone pilots and operators, which is awaiting DGCA clearance." This will help a drone pilot getting a license for drone flying valid for 10 years. This training is both mandatory and essential to ensure optimal and proper handling of drones, he said, adding the institute is also planning to tie up with other central and state agriculture universities and institutes for a pan-India roll out.

Nanoparticles developed by UoH researchers could replace pesticides

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Hyderabad: Nanoparticles developed by researchers from the University of Hyderabad (UoH) may potentially prove to be an alternative to chemical-based pesticides in order to protect crops such as paddy from bacterial and fungal infections.

For years, farmers have been using harmful chemical-based pesticides that cause long-term health issues such birth defects, genetic changes, nerve and development disorders. Following the health risks involved with usage of pesticides, researchers from UoH along with Indian Institute of Technology (IIT), Kanpur, and Indian Council of Agricultural Research-Indian Institute of Rice Research (ICAR-IIRR) have found a biodegradable alternative that could be used to enhance crop pro-

ENHANCE CROP PROTECTION

> UoH found biodegradable alternative that could enhance crop protection against diseases in agricultural fields

Nanoparticles would lessen the worries of crop infection and give boost to crop yield --Prof Abhay Karandikar DIRECTOR, IT-KANPUR

tection against various diseases in agricultural fields.

"We studied fungal culture that can be naturally found in the soil. We separated the compounds found in the fungi and characterized them. During this process, we found one particular compound that had the ability to kill plant pathogens," said Prof R Balamurugan, school of chemistry, UoH.

ICAR-IIRR tested these nano-

The team found nanoparticles were safe and biodegradable, unlike chemical pesticides

particles on rice bacterial blight (deadly bacterial disease that is among the most destructive afflictions of cultivated rice) and found nanoparticles could be active at low concentration, were safe and biodegradable, unlike chemical pesticides and fast in action. "Nanoparticles would lessen the worries of crop infection and give boost to crop yield," said Prof Abhay Karandikar, director, IIT-Kanpur.

Farmers demand waiver of GST on farm inputs, equipment

Centre urged to increase loan amount to 75% of land value

SPECIAL CORRESPONDENT BENGALURU

Farmers' unions from across the country have urged the Centre to remove GST on agri produce, fertilizers, pesticide and drip irriequipment, and gation change agriculture lending policy to increase the loan amount to 75% of the land value.

On Sunday, after a twoday round table of Raitha Parishath, involving farmers' representatives from different States, farmers sought abolition of the policy that mandates securing permission from the nearest sugarcane factory for setting up of ethanol units.

On sugarcane

"FRP for sugarcane should be considered as farm gate price. The MSP should be fixed for all agri products and provide legal protection. Crop insurance should be extended to all pro-



🕤 Karnataka should also implement the raitha bandhu scheme of Telangana, and pay ₹10,000 annually to every farmer for every acre he owns. The State also should announce ₹5 lakh life insurance to all farmers on the lines of Telangana.

KURUBUR SHANTHKUMAR President, National Sugarcane Growers' Association

ducts," said National Sugarcane Growers' Association president Kurubur Shanthkumar, explaining the resolution passed during the round table discussion of representatives. farmers' "GST on turmeric should be removed. The guidelines to compensate crop damage due to natural disaster should also be changed."

The Raitha Parishath also urged the Centre to waive off interest on loans of all agriculture institutions that have been affected by CO-VID-19 pandemic, and consider it as a fresh loan. It also urged the Centre to withdraw from the WTO agreement.

Pertaining to Karnataka,

Mr. Shanthakumar said that the farmers' representatives also urged that the State should announce its intention on the future of its APMC Amendment Act and Land Reforms Amendment Act after the Centre abolished the three farm acts. "Karnataka should also implement the raitha bandhu scheme of Telangana, and pay annually ₹10,000 to everv farmer for every acre he owns. The State also should announce ₹5 lakh life insurance to all farmers on the lines of Telangana."

Representatives of Karnataka, Tamil Nadu, Kerala, Andhra Pradesh, Telangana, Maharashtra and Haryana took part in the round table.

Natural farming board to be set up in state, says Khattar

TRIBUNE NEWS SERVICE

KURUKSHETRA, MARCH 8

Chief Minister Manohar Lal Khattar today said the government would promote natural farming in Haryana for which a provision of Rs 32 crore has been made in the budget.

The CM was here in Kurukshetra to attend a one-day state-level workshop on natural farming at the auditorium of Kurukshetra University.

Manohar Lal said the state government was emphasising on adopting natural farming for the people of the state to get rid of poisonous products, to conserve groundwater and health of the soil. Green Revolution was the need of the hour, the main objective was to increase production and farmers adopting everything to increase production but it had some negative impacts and drawback too. To increase the production, the farmers were using chemical fertilisers and pesticides. We also opted for allopathy leaving ayurveda behind. We have to make efforts on both the fronts, agriculture and medical sector, and adopt traditional techniques."

"There is a need to create an atmosphere in the state and motivate the farmers to adopt natural farming. They will be motivated when the cost of production will go down, production will



Chief Minister Manohar Lal Khattar during a natural farming workshop in Kurukshetra on Tuesday.

FARMERS MUST BE MOTIVATED

There is a need to create an atmosphere in the state and motivate the farmers to adopt natural farming. They will be motivated when the cost of production will go down, production will increase and the health of the soil will also improve. Manohar Lal Khattar, GM

increase and the health of the soil will also improve. To provide facilities to the farmers, it has been decided to constitute a natural farming board in the state. An additional director will also be appointed and a provision of Rs 32 crore has been made by the state government in the budget. A threeyear output-based incentive programme to promote natural farming will be started. As many as 100 clusters covering 25-acres each will be developed. The government will also work

on certification, branding and packaging, and provide compensation for the loss of yield in the first three years", he added.

Governor Gujarat Acharya Devvrat said, "The situation is very dangerous. Cancer cases and other diseases are on the rise. There is a difference between natural and organic farming. The farmers can save the country by adopting natural farming. It will also decrease the cost of production and save groundwater too."

Earlier, the CM also inau-

CANCER CASES ON THE RISE

The situation is very dangerous. Cancer cases and other diseases are on the rise. There is a difference between natural and organic farming. The farmers can save the country by adopting natural farming. Acharya Devyrat, GUVENOR, GUJARAT

> gurated three development projects — buildings of civil hospital in Shahabad, ITI in Ladwa, and government school in Kirmach village worth Rs 37.37 crore

The Chief Minister visited the stalls set up by different departments and progressive farmers. Agriculture minister JP Dalal, Minister Sandeep Singh, MP Nayab Saini, Thanesar MLA Subhash Sudha, Shahabad MLA Ram Karan Kala, ACS Sumita Misra and several other officials were present on the occasion.

Agrochemical, Animal Feed Prices Surge on Ukraine-Russia Crisis

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Kolkata: Farming has become costlier since Russia's invasion of Ukraine as agrochemical and animal feed prices have shot up by 10-15% due to supply chain disruption and rising prices of key inputs such as crude oil, soyabean, and corn.

Agrochemical prices have already gone up by 10-15% since Russia launched a military assault on Ukraine on February 24, and they are set to rise further, industry officials said.

"Crude is the raw material for our components and solvents. Minerals are responsible for the production of a number of other important ingredients," said Rajesh Aggarwal, managing director of Insecticide India, a leading agrochemical player. "Due to the Russia-Ukraine war, the supply of raw materials is getting



affected. Other suppliers are also now attempting to raise prices, which will eventually be passed on to customers." Crude has jumped more than 30% since Russia invaded Ukraine, and is now hovering around \$110 per barrel.

Farmers who are into cattle breeding and poultry farming, too, are facing problem in purchasing animal feed that has become about 10% costlier

SK Chaudhary, founder director of agrochemicals firm Safex Chemicals, said many fertilisers – particularly potassic ones – are imported from Ukraine and Russia, "which is going to further compound the farmers' woes". "In such situations, farmer skips or uses

lesser quantities, resulting in reduced yields and adversely affecting his finances further," he said. "The situation appears to be beyond anybody's control."

costlier Farmers who are into cattle breeding and poultry farming, too, are facing problem in purchasing animal feed that has become about 10% costlier. Prices of soyabean and corn, the two main raw materials of animal feed, have shot up by nearly 10% since the war broke out.

"Prices of soyameal, which is used in animal feed, have gone up as soyabean prices have gone up," said Amit Saraogi, managing director of Anmol Feeds, a leading player in animal feeds sector. "Similarly, prices of corn, too, have shot up by 10%. Also, prices of imported materials like vitamins, amino acids that are used in animal feed have witnessed a 20% increase in the last fortnight."

The agrochemicals business in India picks up right before the Kharif season that begins in May. This is the time of the year when farmers start stocking up on seeds and agrochemicals for the coming sowing season.

The agrochemicals sector was already hit by the impact of Covid-19. Prices had risen amid the pandemic because the entire supply chain was affected. Now, the Ukraine crisis has further aggravated the situation.



APEDA plans to export natural farming products

PNS 📕 NEW DELHI

The commerce ministry's arm APEDA on Friday said it is in the process of formulating a strategy to promote export of natural farming products, which holds huge potential in the global markets.

The Agricultural and Processed Food Products Export Development Autho rity (APEDA) is in consultation with the Ministry of Agriculture to develop the standards for production along with a certification system. "Given that demand for natural products is growing and consumers demand greater quantities of foods, cosmetics and medicines that contain natural ingredients, APEDA is in process to formulate a strategy for promotion of export of natural farming products," it said. The adoption of natural farming. will support farmers with premium prices.

Natural Farming Dept on cards

TRIBUNE NEWS SERVICE

KURUKSHETRA, MARCH 6 Agriculture Minister JP Dalal said the state government had been making efforts to boost natural farming in Haryana and was planning to come up with a department dedicated to it.

Speaking to mediapersons in Kurukshetra on Sunday, he said: "The government is working with an aim to connect farmers in every village across the state with natural farming. The work has been started on the plan to create a Natural Farming Department. During the Budget session, the government will try to get separate funds for natural farming."

"In today's modern era, poison-rich farming is being done. It is not only deteriorating the public health, but also of the soil, hence decreasing the farmers' income. Two years ago, farmers were made aware of the situation and they were exhorted to adopt natural farming but the campaign couldn't be taken forward due to Covid. Now after the pandemic subsided, an agriculture workshop is being organised to again connect the farmers with natural farming," Dalal added.



Agriculture Minister JP Dalal (R) addresses the media at the KU.

AGRI WORKSHOP IN KU TOMORROW

- A state-level agriculture workshop based on natural farming will be organised in the auditorium of Kurukshetra University on March 8
- CM ML Khattar, Gujarat Governor Acharya Devvrat, MPs, MLAs, DCs, VCs of four universities, officials of the Agriculture, Horticulture and Animal Husbandry Departments along with 1,200 progressive farmers will take part in it

Dalal further said at present, medicines and fertilisers were being used indiscriminately in fields to produce the crops, due to which the health of the people was getting affected and the agricultural products were also not getting fair price in the local and international markets. "Therefore, keeping the demand of the time in mind, the government has decided to make the farmers aware of natural farming by focusing on the quality of agricultural products."

"The government will first focus on setting up labs, methods of testing the products, certifying the farmers doing natural farming and opening training centres. An organic market will also be established in Gurugram," the minister added.

Agri Min ready with new scheme to promote natural farming

PNS 📕 NEW DELHI

The Agriculture Ministry is ready with a new central scheme to promote natural farming in the country with an estimated outlay of Rs 2,500 crore, a senior government official said on Tuesday.

The proposed new scheme on natural farming will soon be placed before the Cabinet for approval, the official added.

The new scheme has been designed months after Prime

Minister Narendra Modi stressed the need to keep looking at alternatives for existing fertiliser and pesticide-based farming while addressing a national conclave on natural farming in Gujarat in December last year.

Modi had also said natural farming offers much better products with no side effects.

"After several rounds of consultations with stakeholders, a draft scheme on natural farming has been framed in order to promote natural farming with a systematic approach without disturbing the existing systems of farming," the government official told PTI.

The proposed scheme aims to adopt a complementary and cluster approach, to begin with, and will focus on intensive handholding of farmers practising natural farming, marketing of the produce and providing extension services, among other activities, the official said.

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War set to raise fertiliser prices, govt subsidies

AGENCIES New Delhi

India's agriculture sector is expected to face the heat from hostilities between Russia and Ukraine which are expected to push up prices and availability of --Potash -- a key component used in the manufacturing of fertilisers.

At present, Belarus and Russia are key suppliers of Potash in the global market.

On the other hand, India is a major importer of Potash, which is used in the manufacture of fertilisers.

At an overall level, Russia, Ukraine and Belarus contribute 10-12 per cent of India's total fertiliser imports.

Earlier, India was exploring opportunities to import Belarusian Potash through Russian ports, now with sanctions that option may face challenges.

Besides, other Potash miners mostly based in



Canada are not willing to raise production, thereby, keeping the prices at an elevated level.

Consequently, the supply crunch is expected to increase Potash import prices to around \$500-600 per MT in the near term as against imports made at around \$280 per MT for the major part of FY2022.

Furthermore, higher prices will also drive up government subsidies.

"With both (Belarus and Russia) being sanctioned the supply crunch in the global market will rise," said Rohit Ahuja, Head -Research and Outreach, ICRA.

FMC launches new insecticide for tomato, okra

Claims product delivers better returns by controlling pests for a longer duration

OUR BUREAU

New Delhl, March 8

FMC India, an agrochemical company, has launched Corprima, an insecticide said to be effective to control fruit borers in tomato and okra.

"Powered by FMC's worldleading Rynaxypyr insect control technology, Corprima will provide tomato and okra farmers across the country with superior crop protection against fruit borers, one of the bigger pain points for farmers," the company said in a statement.

The insecticide has been proven to deliver better returns to farmers by having a longer duration of pest control as well as enhanced flower and fruit retention leading to larger harvests of better quality, it said.

Horti crops

"The past year saw a record horticultural crop production in the country. However, every year, tomato and okra farmers incur heavy losses due to fruit borer pests, diseases and post-harvest losses amongst other factors. At FMC, we use innovation to solve the challenges faced by farmers by introducing sustainable products and solutions," said FMC India President Ravi Annavarapu. The company will sell the product in 6 gm, 17 gm and 34 gm packs.

Tomato farmers lose up to 65 per cent of their yields to fruit borers everyyear, experts from the agrochemical industry claim. The infestation of this pest leads to flower dropping and poor plant health resulting in poor quality fruiting, impacting crop yields, they said.

The war's impact on our fertiliser industry



UTTAM GUPTA

Had there been a free market scenario, the industry would have come under serious strain. But that is not to be as fertilisers are under control

The crisis in Ukraine following invasion by Russia has sent shock waves through out the world economy. In India, even as the steep rise in energy import bill will affect almost all sectors of the economy, the impact on fertilizers will be more pronounced. At the outset, let us capture a few relevant facts.

Despite prognostications by succes sive governments during the last four decades or so that India would become self-reliant in fertilizer availability and putting in place policies aimed at achieving the goal, even today, the country remains preponderantly dependent on imports for meeting the requirements of its farmers.

Three most popular fertilizers used by Inree most popular tertilizers used by farmers are urea, di-ammonium phos-phate (DAP) and muriate of potash (MOP) being the major source of nitro-gen, 'phosphate' and 'potash' nutrient respectively. Natural gas (NG) is the raw material (a more apt phrase is feedstock/fuel) used for manufacture of mea upbrease phospharic acid and annue. urea whereas phosphoric acid and ammo-nia are the prime raw materials (RMs) needed for making DAP. In case of DAP, nearly 50 percent of

India's requirement is sourced from other countries whereas all of MOP needed by farmers is imported. All of phosphoric acid and bulk of ammonia required is imported. Coming to urea, 1/3rd of the requirement is imported. Even for the bal-ance 2/3st produced domestically, India depends on import of natural gas or LNG) to the extent of 1/3rd. This is when fer-tilizer gets priority in allocation of domes-tic gas (supplied at 'low' administered/ when the priority of subsidized price) next only to household consumption and use in transportation. If, this priority goes, dependence on LNG import will go up. What role do the countries involved

in the conflagration viz. (i) Russia - the prime aggressor; (ii) Belarus (bordering to Russia's north, it is extending full sup-port to the latter and may be branded as the co-aggressor) and (iii) Ukraine, the country under attack, play in meeting India's requirements? Russia accounts for nearly 23 percent

Russia accounts for nearly 23 percent of the world supplies of ammonia and potash each. Together with Belarus - the other major supplier of potash (20 per-cent), this region supplies 43 percent toworld potash pool. Russia alone makes up for 14 percent of world urea supplies whereas in DAP, its contribution is record 10 percent around 10 percent.

In energy, Russia is the world's sec-ond-largest producer of NG with a share of 10 percent. In total world export of gas, its contribution is even higher at 25 perof their gas supplies from Russia. Russia is the third-largest producer of oil world-wide, accounting for over 12 percent of global crude production.



FOR INDIA. THESE DISRUPTIONS

WILL MANIFEST IN THE FORM OF BOTH SUPPLY SHORTAGES AS WELL AS STEEP INCREASE IN THE IMPORT BILL. THE MAXIMUM IMPACT WILL BE FELT IN POTASH

WHEREIN WE DRAW 50 PER CENT OF REQUIREMENT FROM RUSSIA AND BELARUS. EVEN IN OTHER AREAS, INDIA WILL HAVE TO PAY MORE AMID GLOBAL

SHORTAGES AND RESULTANT STEEP INCREASE IN GLOBAL PRICES

(The writer is a policy analyst. The views expressed are personal.)

getting directly entangled, the dastardly consequences will be with us for several years, perhaps Coming to India, whereas in potash it draws close to 50 percent of its requirement from Russia and Belarus, a good slice of ammonia also comes from this region. even decades. For India, these disruptions

Nearly 60 percent of Indian DAP demand is met from China and Saudi Arabia. In case of urea, over 1/3rd of import come from China, bulk of the remaining 2/3rd coming from countries in the middle-east. With regard to gas, India's

east. With regard to gas, Indias supply sources are fairly diversified including 10 percent from Russia. In view of the raging war, there will be huge disruption in supplies from the region due to a deadly cocktail of factors such as (i) eco-nomic and financial sanctions imposed by countries of Europe imposed by countries of Europe and the USA, (ii) physical incapacand the OSA, (ii) physical meapac-itation in the entire supply chain from mining to production to logistics and movement (albeit road) and (iii) clogging of sea transportation route even as the Plack Sea is now heat to the ster Black Sea is now host to the war-

black Sea is now nost to the war-ships - primarily Russian. The EU and USA may have exempted energy supplies from sanctions for now (this is ostensi-bly to secure their own supplies), to secure their own supplies), other obstructions like the prohibition on Russian banks from having access to SWIFT (Society for Worldwide Interbank Financial Telecommunication payment system will ensure that supplies par-ticularly to other not so privileged countries remain disrupted.

The supply disruptions are inevitable for a minimum of 3-4 months; this is even under a most optimistic scenario of an 'immediate' resolution of the crisis. Under a realistic scenario, the disruption will continue till the end of 2022. In case however, the war zone expands with NATOcountries also

will manifest in the form of both supply shortages as well as steep increase in the import bill. The maximum impact will be felt in potash wherein we draw 50 perpotash wherein we draw 50 per-cent of requirement from Russia and Belarus (already, a Belarusian potash miner has declared force majeure courtesy, US sanctions). Even in areas where our depen-dence on this region is less, India will have to pay more as with dras-tic cut in supplies from there, there will be global shortages and resultant steep increase in international prices. What will be the impact on fertilizer sector in India? Had there been a free market

Had there been a free market scenario, the industry would have come under serious stress and farmers would have had to pay higher prices. But that is not to be as fertilizers are under control. For decades, the Union government has run a system of controlling their maximum retail price (MRP) at a low level unrelated to the cost production/import and distribu-tion and reimbursing the difference to the manufacturer/importer as subsidy from the budget. This mechanism shieldsboth the farmers and the industry from any cost hike.

Cost nike. During 2021-22 also, the prices of almost all fertilizers and RMs had increased leaps and bounds. The price of DAP more than doubled while, price of urea and MOP went up almost three times each. Then, an overarching factor was hike increase in energy cost (cour-tesy, post-pandemic recovery)

which forced major exporters to increase fertilizer prices. The resul-tant increase in cost was reimbursed to manufacturers by hike in subsidy by providing ₹60,000 crore over and above the budget provi-sion of ₹80,000 crore.

sion of ₹80,000 crore. For 2022-23, the Finance Minister, Nirmala Sitharaman has reduced allocation for fertilizer subsidy to ₹105,000 crore against ₹140,000 crore spent during 2021-22. This was in the hope that the prices would decline from the ele-nated heads of surgent EV. But in the set of the set vated levels of current FY. But, in view of theUkraine crisis, these alculations have gone haywire Calculations have gone haywire. Even as fertilizers prices will increase further, the price of imported LNG has already zoomed to US\$ 40 per million Btu (up from \$20 per mBtu during 2021-22).

It is very likely that the government will increase the allocation to at least ₹150,000 crore or even higher depending on the extent of cost push. Prima facie, a fiscal deficit (FD) target at 6.4 percent or ₹16,60,000 crore providesenough cushion to pay for the inflated subsidy bill. However, sup-ply shortages are not ruled if India is unable to procure required quantities.

A bigger issue is: FD cushion will not be available eternally. Even as per relaxed fiscal trajec-tory laid down by FM in 2021-22 budget, the Government has to glide down to 4.5 percent by 2025-26. This requires reining in subsidies which will be possible only when India reduces its dependence on import. That is where little was achieved in the past and there is nothing on the horizon to instill confidence that things will look better.

India exploring alternative payment mechanism for trade

Falling rouble value, finding banks that will not face risk of sanctions are challenges

AMITI SEN

New Delht, March 4 India is watching out for additional economic sanctions that the Western countries may impose on Russia before it puts in place an alternative payment mechanism, possibly an arrangement for rupee-rouble trade, to help exporters get paid for their shipments, a source close to the development has said.

A high-level inter-ministerial task force, led by Department of Economic Affairs Secretary Ajay Seth, is examining the feasibility of a rupeerouble arrangement, which may face a challenge if the rouble continues to depreciate against the dollar, the source said.

Others in the task force include Secretaries and senior officials from Ministries and Departments such as Consumer Affairs & Food, Fertilisers, Petroleum, Commerce and External Affairs.

The US, the EU and the UK have, currently, blocked several prominent Russian banks from the SWIFT payment mechanism, but product specific restrictions have not been imposed. "Today, because of the sanctions, transactions with Russia can't happen in dollar or euro. But there is no restriction on doing barter trading or a currency swap kind of arrangement like rupee-rouble trade. However, if the sanctions become product specific, the situation will be more problematic," the source said.

Pending payments

As estimated \$400-500 million pending payments due to Indian exporters is stuck in Russia. While the priority of the government is to get that payment in, it is also looking at how trade could continue. India's annual trade with Russia is around \$11 billion with a little over \$3 billion of exports taking place in 2021.

Putting in place a rupeerouble payment mechanism, on the lines of the mechanism that was successfully used with Iran for some years when it came under US sanctions, would have several challenges. This includes the danger of a continuous fall in the value of rouble and difficulty to find a bank that would not face the risk of



As estimated \$400-500 million in payments due to Indian exporters are stuck in Russia REUTERS

Western sanctions, the source added.

The rupee-rouble payment system would require a Russian bank to open an account in an Indian bank and vice versa. "Under the mechanism, both sides will mutually agree to hold currency for items worth say \$100 million. So, Indian exporter will be paid in rupee and India will pay in roubles for what it imports. There has to be a notional value of equivalence let us say in euro or dollar as the value needs to be pegged somewhere. This can be for a short period," the source explained.

The danger is if the rouble keeps falling against the dollar and euro. "Then we may be left holding the rouble in our account there and trading may not happen. It will be only one way trading. India will export and get paid in rupees but we will not get back the real money from there," he said.

Finding banks in India not exposed to the dollar or euro and a partner bank in Russia not under sanctions is another challenge that the government will have to weigh in.

The option suggested by exporters of allowing payments through entities in third countries such as Hong Kong or UAE may also be difficult as much of the trading is monopolised by a few Russian oligarchs who are getting covered under the economic sanctions.

"It is an evolving situation and we are closely watching international developments. We hope to come up with a suitable solution soon,"the source said.

Ukraine War Has Indian Exporters Eyeing Iran

Dip in trade with Russia in the wake of the Ukraine conflict forces rice and tea exporters to hedge their bets

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