

ACFI NEWSLETTER

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Reforms needed in ICAR for better outcomes, says PMO principal secy

SANJEEB MUKHERJEE & AGENCIES

New Delhi, 8 January

The Indian Council of Agricultural Research (ICAR) and the research institutes under it need reforms so that their outcomes could be improved and resources used efficiently, principal secretary in the Prime Minister's Office (PMO), P K Mishra said on Wednesday.

ICAR is an autonomous body responsible for coordinating, guiding and managing research and education in the field of agriculture. It is the largest network of agricultural research and education institutes in the world which has played a big role in the Green Revolution.

"Reforms in ICAR are also needed so that its human and other resources are fruitfully utilised," Mishra said while



P K MISHRA, PRINCIPAL SECRETARY IN THE PMO SAID INDIA NEEDED TO ACCELERATE HYBRID TECH ADOPTION IN PULSES, AND OILSEEDS TO OVERCOME PRODUCTION DEFICITS

addressing a national symposium organised by Trust for Advancement of Agricultural Sciences (TAAS) on hybrid technology for enhanced crop productivity. Earlier, RS Paroda, founder chairman of TAAS, called for more financial support for ICAR for agriculture research and development and a national mission on hybrids under PPP mode. He also called for a clear policy on genetically-modified crops and

incentives like tax exemption for the seed industry.

Mishra too said that India needs to accelerate adoption of hybrid technology in pulses and oilseeds to address production deficits, while acknowledging the challenges faced by farmers in implementing these advanced farm practices.

He said that despite showing promising results, hybrid varieties, particularly in crops like pigeon pea ('toor dal'), have

not achieved widespread adoption among farmers.

While some hybrid mustard seeds are available in the market, their performance compared to open-pollinated varieties requires further investigation, he said.

While referring to the limitation of annual seed purchases, a requirement for hybrid crops, Mishra said that global research efforts were going on to develop technologies allowing farmers to save and reuse hybrid seeds. "This will help save on the cost of seeds," he said. Highlighting challenges faced in adoption of hybrid seeds, Mishra said India's pioneering work in hybrid technology, which revolutionised crops like maize and cotton, faces uneven adoption across different crops despite its proven potential to boost productivity and climate resilience.

Crystal Crop focusing on India-specific research to introduce new varieties

Subramani Ra Mancombu
Chennai

Delhi-based Crystal Crop Protection Ltd is focusing on India-specific research to come up with new crop varieties as multinationals are not looking at crops such as mustard or millets, the company's CEO Satyendar Singh has said.

The company introduced a new hybrid variety of wheat during the current rabi season, while it has set foot in Thailand through its 12th acquisition of I&B Seeds, a prominent player in the flower and vegetable seeds market.

PORTFOLIO EXPANSION

"We were not in wheat. So, we expanded our portfolio and introduced a wheat variety, which is an open-pollin-



Crystal Crop Protection Ltd
CEO Satyendar Singh

ated one, as there are no hybrids in wheat as of now. This is the first year we have given it to the farmers. The results from the trials have been very encouraging and farmers who have seen in the past have expanded the area. We were able to sell a good quantity in the very first year. We have now begun our wheat breeding pro-

gramme," he told *business-line* in an online interaction.

The wheat is climate-resilient and can withstand a little bit of high temperature at harvest, he said.

CHANGING FACE

As an Indian company, Crystal is trying to focus on India-specific research. Globally, people are focused on canola, and nobody is focused on mustard research.

"Mustard is very specific to India and no global company will likely put their money. But being an Indian company, this is an important crop," Singh said.

With times changing and more companies focusing on India, it could help change the face of Indian agriculture. "We may not be dependent on the research coming from developed countries. Even multina-

tional companies have to focus on India-specific products if they have to compete in India," Singh said.

GROWTH IN BUSINESS

Crystal began its seed business in 2012, acquiring a small company called Rohini Seed. Since then, it has acquired the Indian businesses of Bayer and the pearl millet, mustard and cotton businesses of Syngenta. Last year, it bought the Sadanand cotton brand, which is prominent in South India, from Kohinoor Seeds, before acquiring I&B seeds fully.

On farmers shifting from mustard to wheat this year, he said it was due to two factors. Farmers who have irrigation facilities are swinging towards wheat as prices are more stable and the Centre procures it at minimum support price.

High nitrate levels found in groundwater of 440 districts across India

PIONEER NEWS SERVICE ■
NEW DELHI

High nitrate levels have been found in groundwater of 440 districts across India, with 20 per cent of the samples collected exceeding the permissible nitrate concentration, the Central Ground Water Board (CGWB) has said in a report. Nitrate contamination is a significant environmental and health concern, particularly in agricultural regions using nitrogen-based fertilizers and animal waste. The "Annual Groundwater Quality Report - 2024" also revealed that 9.04 per cent of samples had fluoride levels above the safe limit, while 3.55 per cent showed arsenic contamination. A total of 15,259 monitoring locations were chosen nationwide to check groundwater quality in May 2023. Of these, 25 percent of wells (the most at

risk per BIS 10500) were studied in detail. Groundwater was sampled at 4,982 trend stations before and after the monsoon to see how recharge affects quality.

The report found that 20 per cent of water samples exceeded the nitrate limit of 45 milligrams per liter (mg/l), the threshold set by the World Health Organisation (WHO) and Bureau of Indian Standards (BIS) for drinking water. Rajasthan, Karnataka, and Tamil Nadu had over 40 per cent of samples above the limit while there was high contamination in samples from -- Maharashtra at 35.74 per cent, Telangana at 27.48 per cent, Andhra Pradesh at 23.5 per cent and Madhya Pradesh at 22.58 per cent.

Uttar Pradesh, Kerala, Jharkhand and Bihar reported lower percentages. In Arunachal Pradesh, Assam,



Goa, Meghalaya, Mizoram and Nagaland, all samples were within safe limits.

In states like Rajasthan, Madhya Pradesh, and Gujarat, nitrate levels have remained stable since 2015. However, Uttar Pradesh, Tamil Nadu, Andhra Pradesh and Haryana showed increasing contamination from 2017 to 2023, the CGWB said.

High nitrate levels can cause health issues like blue baby syndrome in infants and are unsafe for drinking. Fifteen districts in

India have been identified as the most affected by high nitrate levels in groundwater including Barmer and Jodhpur in Rajasthan; Wardha, Buldhana, Amravati, Nanded, Beed, Jalgaon, and Yavatmal in Maharashtra; Rangareddy, Adilabad and Siddipet in Telangana; Villupuram in Tamil Nadu; Palnadu in Andhra Pradesh; and Bathinda in Punjab.

High nitrate levels in groundwater can be a result of excessive irrigation which can push nitrates from fertilizers deep into the soil, the report said. Poor management of animal waste in livestock farming adds to the problem, as it releases nitrates into the soil.

Urbanisation and population growth increase wastewater and sewage, which often contain high nitrate levels, while leaking septic systems and poor sewage disposal worsen

contamination. The report further said fluoride concentrations exceeding the permissible limit are a major concern in Rajasthan, Haryana, Karnataka, Andhra Pradesh, and Telangana.

Elevated arsenic levels (more than 10 parts per billion) were found in several states, particularly in the floodplains of the Ganga and Brahmaputra rivers. This includes regions of West Bengal, Jharkhand, Bihar, Uttar Pradesh, Assam, and Manipur, as well as areas in Punjab and Rajnandgaon district in Chhattisgarh.

Long-term exposure to fluoride and arsenic contaminants can have severe health consequences, including fluorosis (from fluoride) and cancer or skin lesions (from arsenic). A major concern in the groundwater quality report was also the elevated levels of uranium in several regions.

Crystal Crop acquires Bayer's to expand Ethoxysulfuron business

NEW DELHI

AGROCHEMICAL firm Crystal Crop Protection on Sunday said it has acquired the herbicide active ingredient Ethoxysulfuron from Germany's Bayer AG for sales in select Asian markets, in a deal expected to boost its earnings by 20 per cent.

The acquisition includes Bayer's 'Sunrice' trademark

and mixture products containing Ethoxysulfuron, along with all related registrations. The herbicide is used to control broad-leaved weeds and sedges in rice and cereal crops.

This marks Crystal's 13th strategic acquisition and its second purchase from Bayer, following its 2021 acquisition of Bayer's Indian seed portfolio for cotton, pearl millet and mustard.

Govt notifies procedure for export of certified organic products

NEW DELHI, Jan 7: The government has laid out a procedure for export of certified organic products, requiring mandatory certification under the National Programme for Organic Production (NPOP) for such shipments, according to a public notice.

The Directorate General of Foreign Trade (DGFT) in a public notice said that a product will be allowed to be exported as "organic product" only when accompanied by a Transaction Certificate (TC) issued by a certification body accredited by the National Accreditation Body for such items under the NPOP of the Department of Commerce. It added that exports

of these goods shall only be certified as such if produced, processed, packed and labelled as per the standards laid down in the NPOP.

"Procedure for export of certified organic products has been notified," it added.

India has fixed a target of USD 2 billion exports for organic food products by 2030.

The revised edition of the NPOP will come into force with effect from 180 days from January 5.

The commerce ministry's arm APEDA (Agricultural and Processed Food Products Export Development Authority) has revised the NPOP's regulations to make it more farmer-friendly and help India push exports of

organic food products.

The National Programme for Organic Production (NPOP) provides standards for organic production and procedure for accreditation of certification bodies.

The standards and procedures have been formulated in harmony with other international standards regulating the import and export of organic products.

During April-November this fiscal, these exports rose by about 40 per cent to USD 456 million. It was USD 495 million in 2023-24.

To promote Indian organic goods in the global markets, he said, APEDA is facilitating the participation of a number of companies in 'BioFach',

which is the largest organic food trade fair in Nuremberg, Germany. The four-day fair will start from February 11.

The country's organic food exports have grown at a steady pace and over the past decade, exports of organic products have grown from USD 213 million in 2012-13 to USD 494.80 million in 2023-24. The main export destinations include the USA, European Union, Canada, UK, Switzerland, Australia, Middle East, and Asian countries. The major export items are cereals and millets, processed food, tea, spices, dry fruits, sugar, medicinal plant products, pulses, coffee, oil cake/meal, and oil seeds. – PTI

Widespread antibiotic, pesticide use raising resistance risk: Study

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Chandigarh: A study conducted in Punjab revealed the widespread exposure of humans, animals, and agricultural systems to antimicrobials and pesticides, significantly increasing the risk of antimicrobial resistance (AMR). This alarming trend underscores the urgent need for a coordinated approach to tackle this issue.

Antimicrobial resistance occurs when microorganisms, such as bacteria, viruses, fungi, and parasites, become resistant to medicines like antibiotics, antivirals, antifungals, and antiparasitics. This resistance makes infections harder to treat, increasing the risk of disease spread, severe illness, and death.

The study, conducted across 77 households in Mohali district, examined antibiotic usage, agricultural practices, and livestock management under the one health framework. It revealed critical gaps in awareness and practices contributing to the AMR.

Among the surveyed population, 94.8% consumed medicines in the last six months. Of these, 89% obtained prescriptions from doctors, while 11% engaged in self-medication. Antibiotic use was verified in 42% of households, primarily for illnesses like fever, cold, and typhoid. However, awareness about proper antibiotic use was low, and traditional re-

PUTTING YOUR HEALTH AT RISK

➤ 94.8% of the surveyed population across 77 households in Mohali district consumed medicines in the last six months. Of these, 89% obtained prescriptions from doctors, while 11% engaged in self-medication.

➤ Antibiotic use was verified in 42% of households, primarily for illnesses like fever, cold, and typhoid, revealed the study titled "Situational Analysis of Human and Agricultural Health Practice: One Health and Antibiotic Use in an Indigenous Village in Rural Punjab, India".

➤ Agriculture remained

a primary occupation for 71.4%. Pesticide use was common, especially for wheat, with 78.2% of farmers using chemical treatments.

➤ Livestock rearing was reported by 68.8% of households, with 50% of livestock treated with antibiotics, predominantly for conditions like mastitis.

➤ Private healthcare practitioners prescribed antibiotics to five out of 45 patients daily, often based solely on symptoms, revealed the study, adding that veterinarians administered antibiotics to 25% of the livestock treated weekly

medies, such as temple visits and 'jhaad-phoonk', were still relied upon for specific illnesses, stated the report.

Agriculture remained a primary occupation for 71.4% of households, with wheat, maize, and vegetables being the most cultivated crops. Pesticide use was common, especially for wheat, with 78.2% of farmers using chemical treatments. Unfortunately, adherence to govt guidelines was minimal, with most relying on shopkeepers for pesticide instructions. While much of the produce was consumed locally, some crops like potatoes and onions were cultivated exclusively for ho-

usehold consumption.

Livestock rearing was reported by 68.8% of households, with 50% of livestock treated with antibiotics, predominantly for conditions like mastitis. However, villagers were largely unaware of the medications administered to their animals. Green fodder, often grown at home, was treated with pesticides, and purchased animal feed might have contained antibiotics, further heightening exposure, mentioned the report.

The study also highlighted healthcare and veterinary practices in the region. Private healthcare practitioners

prescribed antibiotics to five out of 45 patients daily, often based solely on symptoms. Similarly, veterinarians administered antibiotics to 25% of the livestock treated weekly. These practices emphasise the need for stricter regulations and greater awareness regarding antibiotic use.

The study titled "Situational Analysis of Human and Agricultural Health Practice: One Health and Antibiotic Use in an Indigenous Village in Rural Punjab, India" was conducted by Dr J S Thakur, professor of community medicine, Post Graduate Institute of Medical Education and Research (PGIMER), Chandigarh, and his team, including Anjali Rana, Rajbir Kaur, Ronika Paika, Srikanth Konreddy, and Mary Wiktorowicz.

Researchers stressed the need for robust community awareness programmes to educate people about the risks of AMR and the importance of responsible antibiotic and pesticide use. They also recommended establishing 'One Health' demonstration centres at the village level to address the interconnected health needs of humans, animals, and plants.

The study concluded with a call for urgent multi-sectoral action, better healthcare policies, and large-scale research to monitor antibiotic residues in food products. It emphasised that adopting a holistic one health approach was critical for protecting rural communities and mitigating the spread of drug-resistant infections.

CM unveils vision for solar power and organic farming

AVINASH P. SUBRAMANYAM | DC
TIRUPATI, JAN. 5

In a bid to transform Kuppam into a model constituency, Chief Minister Nara Chandrababu Naidu unveiled two ambitious initiatives on Monday: a solar power adoption drive under the PM Surya Ghar scheme and a natural farming programme under the Organic Kuppam vision. The initiatives aim to position Kuppam as a leader in renewable energy and sustainable agriculture, addressing energy needs while promoting eco-friendly farming practices.

Speaking at Nadimuru village on Monday, during the inauguration of a solar power project under the Surya Ghar scheme, Naidu emphasized that Kuppam constituency would be the first beneficiary of any developmental schemes launched by the state. He highlighted his vision of sustainable progress through innovative approaches, with a focus on renewable energy and organic agriculture.

Under the PM Surya Ghar scheme, every household in the Kuppam segment will be equipped with solar panels, fully subsidised by the government. Naidu underscored the scheme's importance as a milestone in achieving energy independence and environmental sustainability.

"Kuppam will serve as a pilot, demonstrating how solar power can revolutionise energy consumption and production at the household level", he said.

Recollecting his childhood days, studying under lanterns due to unreliable power supply, Naidu highlighted the shift from centralised to decentralised

● **THE PROGRAMME** includes reclaiming fallow land with crops like pulses and millets, promoting high-value farming models, and establishing four bio-input hubs by September 2025 to reduce chemical dependence.

energy generation. "Earlier, power was produced far away and transmitted to households. Today, technology enables us to generate energy at home, empowering individuals and reducing dependency on external sources", he explained.

The Chief Minister revealed plans to install solar panels in 20 lakh households across the state. He praised IIT Kanpur for introducing advanced technology to support this ambitious goal of 100 per cent solarisation. He also revealed that under the Surya Ghar scheme, households generating two kilowatts of power would receive a ₹60,000 subsidy, reducing the total installation cost of ₹1.10 lakh.

Explaining the financial benefits, Naidu stated that households could produce 200 units of electricity per month, with 60 units used for personal consumption and the surplus 140 units supplied back to the grid, earning an estimated ₹5,000 annually.

"With a subsidy of ₹60,000, the total installation cost will be reduced to ₹50,000 per household, making the initiative accessible to all", he said.

In the presence of the chief minister, an MoU was signed between the Kuppam Area Development Authority and IIT-Kanpur to achieve Net Zero carbon emissions in the region. Naidu urged citizens to adopt sustainable practices,

including afforestation, to combat pollution and enhance quality of life.

Later in Seegalapalle, Naidu launched the Organic Kuppam vision document under the AP Community-Managed Natural Farming (APCNF) programme. The initiative, implemented through the Rythu Sadhikara Samstha (RySS), aims to universalise natural farming practices across the Kuppam constituency.

Naidu visited natural farming fields, interacted with farmers and explored stalls showcasing APCNF activities.

He emphasised the importance of integrating traditional farming practices with modern research to ensure sustainable and profitable agriculture. "This initiative will improve soil health, conserve water, and provide safe, chemical-free food, while making agriculture climate-resilient," he said.

The Organic Kuppam initiative targets the transformation of 70 per cent of farmers, 50 per cent of cultivable land, and 20 per cent of fallow land to natural farming practices by 2028-29. It also aims to create 13,500 rural jobs in the next five years, scaling up to 37,000 jobs by 2034-35, with monthly incomes between ₹10,000 and ₹25,000.

Naidu encouraged farmers to adopt technologies provided by RySS and collaborate with organisations like MARKFED for better marketing of natural farming products. "These initiatives are a blueprint for sustainable growth, setting an example for energy efficiency and eco-friendly agriculture", he concluded, calling for collective efforts to achieve these goals.

Godrej Agrovet unveils pig feed range

Our Bureau

Bengaluru

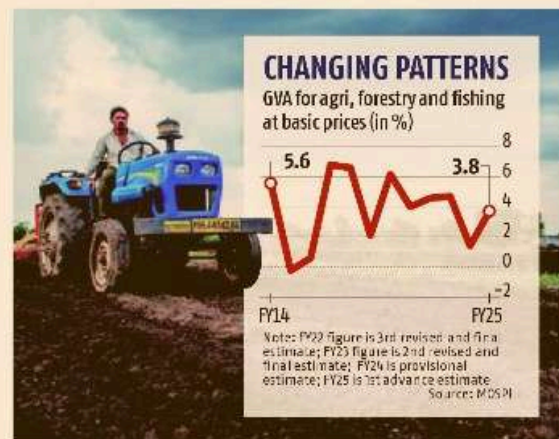
Godrej Agrovet has announced the launch of Godrej Pride Hog, a scientifically developed pig feed range designed to provide optimal nutrition at each stage of a pig's lifecycle.

The range includes starter, grower and finisher variants, ensuring balanced nutrition for better health, immunity and growth, the company said.

Balram Singh Yadav, Managing Director, Godrej Agrovet said, "With half of the country's around 9 million pig population located in the North-East, pig farming is a vital source of livelihood for small and marginal farmers. In line with our commitment to uplift farming families, Pride Hog offers a high-quality, research-backed feed solution that enhances pig health."

Farm sector holds out amid headwinds

Strong monsoon, robust kharif output drive growth, boosting agri GVA



SANJEEB MUKHERJEE
New Delhi, 7 January

Amid slackness in other sectors, agriculture and allied activities might once again be among the few that could provide some silver lining in 2024-25.

Gross value added (GVA) at constant prices in agriculture and allied activities is projected to grow 3.8 per cent as against 1.4 per cent in FY24, the first advance estimates (FAE) of gross domestic product (GDP) for FY25, released on Tuesday, showed. At current prices, GVA growth is estimated to be even better at 10 per cent as against 5.4 per cent in FY24. Such growth is likely to come against the backdrop of a strong monsoon, which has spurred a good kharif harvest and strong rabi sowing.

Some impact of a lower base is also making the growth numbers good, experts said.

Farm-sector growth in FY24 dropped due to a weak monsoon and prolonged hot weather in several parts of India.

"Healthy agricultural growth and likely moderation in food inflation should help boost consumption in the months to come," Rajani Sinha, chief economist, CareEdge, said in a note.

However, Madan Sabnavis, chief economist, Bank of Baroda, said the overall FAE were conservative, given that the Union Budget was round the corner and the government did not want its revenues and other projections to go wrong. "For agriculture, I feel that the estimates for FY25 are highly conservative, given that the 2024 monsoon has been good and so has rabi sowing so far,"

Sabnavis said. He added this usually happened when six months' data was used to extrapolate and project full-year growth.

The monsoon ended last September with surplus rain of almost 8 per cent, the best in the last three years.

Rain in the country during June to September was estimated to be 935 mm, which was 8 per cent more than the normal of 870 mm. As a result, kharif rice production (July to June) was projected at around 120 million tonnes, which was 5.9 per cent more than in the same season last year. The data showed the production of maize, another prominent kharif cereal, was expected to jump to around 24.54 million tonnes, up almost 10.3 per cent from last season.

However, the production of pulses was expected to be down at around 6.95 million tonnes largely due to a drop in urad output. Overall, foodgrain production in the 2024 kharif season is projected to touch an all-time high of 164.7 million tonnes, 5.7 per cent more than in the previous kharif. The good monsoon and favourable prices for cereals have also spurred positive rabi sowing.

Till January 3, the sowing of wheat, a prominent rabi crop, has been completed in around 32 million hectares, which is 1.74 per cent more than in 2024 and 2.4 per cent more than the normal acreage. Among other crops, mustard sowing has concluded with more than a 5 per cent drop in area as compared to 2024 and the acreage of gram is higher than last year but lower than the five-year average.

India has potential to increase organic products' exports to ₹20,000 Crore in 3 years: Goyal

PTI ■ NEW DELHI

India has the potential to increase exports of organic products up to Rs 20,000 crore in the next three years, Commerce and Industry Minister Piyush Goyal said on Thursday.

He said this while releasing the eighth edition of National Programme for Organic Production (NPOP) with new regulations aimed at enhancing clarity and transparency in organic product standards as well as aligning with global standards.

"Currently, our organic product exports are at Rs 5,000-6,000 crore. In the next three years, we can easily achieve Rs 20,000 crore exports, about 3-3.5 times increase from the current level," Goyal said at an event organised in partnership with industry body Ficci.

He said the global demand for these products is about Rs 1 lakh crore, which can grow up to Rs 10 lakh crore in the coming years, a unique opportunity India should not miss. India already has one of the largest numbers of farmers in the world undertaking organic farming.



He also asked startups to come out with solutions that help in growth of the sector.

The NPOP has undergone several revisions since its inception in May 2001. The eighth edition marks a significant update to the regulatory framework governing organic products in India, with the last revision occurring in 2014.

Key features of the eighth edition of

NPOP include farmer-friendly regulations, streamlined certification, enhanced transparency and revamped traceability system.

The eighth edition aims to bolster India's organic export sector, with an ambitious target of reaching USD 2 billion in organic food exports by 2030.

Ministers of State for Cooperation Krishan Pal Gurjar and Murlidhar

Mohol, Minister of State for Commerce Jitin Prasada and Cooperation Secretary Ashish Kumar Bhutani were also present at the event.

NPOP plays a crucial role in enhancing the credibility of organic products in both national and international markets. It ensures that agricultural products labelled as "organic" meet stringent standards, thereby protecting consumer interests and promoting sustainable agricultural practices.

It is overseen by the Commerce Ministry, with the Agricultural and Processed Food Products Export Development Authority (APEDA) managing its implementation.

TraceNet 2.0, an upgraded traceability platform of NPOP for seamless operations and enhanced tools for regulatory oversight, was also launched.

On the occasion, a dedicated NPOP portal was launched for more visibility and ease of Operations for Organic stakeholders. An upgraded redesigned APEDA portal as well as an agri exchange portal were also unveiled.

'Use of chemicals harming soil, human health'

JAMKHANDI, DHNS:

Farmers are using more chemicals than recommended to achieve higher yields in agriculture, leading to a loss of soil fertility and adverse effects on human health, said Vijayapura Regional Agricultural Research Centre Assistant Extension Director Ravindra Belli.

He was speaking at a seminar on 'Organic farming practices' held under the Atma Yojana in collaboration with the Agriculture Department and Adavisiddheshwara Jatra Mahotsava Committee in Mareguddi village near here.

All farmers should use chemicals as recommended, and organic farming should be their top priority. He em-



Progressive farmers are being honoured with 'Shrestha Krishika' award at a function in Mareguddi of Jamkhandi taluk. DH PHOTO

phasised the increased use of vermicompost, bio-fertilisers, and green manure.

Nippani Agricultural Research Centre scientist Sanjay Patil advised farmers to prioritise the selection of suitable sugarcane varieties before planting. He provided comprehensive information on varieties suitable for different

regions and recommended selecting 8-9 month-old sugarcane for planting after seed treatment.

Mahalingapur Rohini Institute founder Mallappa Katti highlighted the need for spiritual involvement in agriculture. He advised using fertilisers according to soil properties and

nutrient requirements.

The event was held in the presence of Gurupada Swamiji. Organic farmer Ramesh Khanagoudar, farmer Paragouda Shegunasi, Girish Dangond and others spoke on the occasion. Progressive farmers were honoured with 'Shrestha Krishika' award at the function.

Hybrid seed technology needs to play a role beyond raising yield, says PM's Principal Secretary

Our Bureau
New Delhi

Leading agricultural experts have called for accelerated adoption of hybrid technology to address India's growing food security challenges, climate change effects and sustainable development goals. Disclosing the government's thrust areas, PK Mishra, Principal Secretary to the Prime Minister, said, "Hybrid technology has to play a role beyond just increasing yields."

Inaugurating a three-day symposium on "Hybrid Technology for Enhanced Crop Productivity" in New Delhi on Wednesday, Mishra said that adoption of hybrid technology (by farmers) should lead to equitable, inclusive and sustainable growth of the economy. "It should also lead to transformation of agriculture through increasing farmers incomes. Reducing poverty



PK Mishra, Principal Secretary to the Prime Minister

is very important, and agriculture has an important role to play," he said.

CHANGE AGENTS

He said, "Growth of agricultural and allied sector has recorded 4.1 per cent since 2014, driven by a 5 per cent increase in agriculture between 2017 and 2023 when livestock growth was 5.9 per cent and fisheries grew by 9 per cent but agriculture had 2.5 per cent growth. Although agricul-

tural GDP has grown in absolute terms since 1967, the contribution of agriculture in GDP has come down from 42 per cent in 1969 to 18 per cent in 2023. However the workforce dependent on agriculture, although declined marginally, still stands as high as 37 per cent. This leads to issues of equity and inclusiveness."

HIGHER PRODUCTIVITY

Further, small-scale holdings (less than 5 acres), currently at 146 million, are estimated to go up to 168 million. "As the number of small holder farmers has gone up, we need to look at five change agents to improve their incomes and lives: (1) More focus on horticulture, livestock and fisheries; (2) Use of technology that helps small holder farmers; (3) Crop diversification to more profitable crops; (4) Increasing crop productivity and (5) Increasing non-crop income of farmers."

Therefore, hybrid research has to come up with products that have more productivity than open pollinated ones. Rice, pulses and oilseeds need high priority in hybrid research. "Particularly, we need to bring hybrid pigeonpea to the market and scale it up."

This will help in bridging availability gap in pulses. Similarly, in oilseeds, we should increase productivity using hybrids. This is a priority for the country."

"Hybrids have to be affordable to smallholder farmers. If research can make farmers save hybrid seeds from one season to another without losing heterosis, it would be a great scientific contribution to increasing farmer incomes. A consortium approach to bring public and private together is critical and should be encouraged through policy support for intellectual property rights protection," he said.

Multicropping, natural farming ideal for small farmers

Natural farming and multicropping yield better results for small farmers than resource intensive monocropping

PVS Suryakumar

Indian farmers have been practising multi-cropping since times immemorial. In this practice, multiple crops are grown on the same land, at the same time, with a main crop. These crops have varied maturity times, root depths and hence do not compete with each other. The land is also covered with crops, for about 8-10 months, retaining soil moisture.

Traditional agriculture was sustainable and self-sufficiency (of a small region), was the unstated goal. Milch cattle, draught animals and poultry were part of this agricultural milieu.

The advent of monocropping of cash crops, introduced by the British, changed this fine balance. Indigo was the first crop and its cultivation culminated in the 'Nil Satyagraha (1859)', as markets failed farmers and their food security was already pawned to the vagaries of markets.

Green Revolution and the market economy, which promoted monocrops, made small farmers vulnerable. The advent of modern seed systems, to suit monocrops, replaced diverse traditional varieties, furthering their vulnerability. Low marketable surpluses and opaque

the support structures are unable to address.

Out of our 188 million farm holdings, 148 million (88 per cent) are small holdings, of less than one hectare each and about 50 per cent of Indian agriculture is rainfed, where farmers' usually take one crop.

Given small farmers' low marketable surplus and unfavourable markets, agriculture input subsidies, direct benefit transfers are given to enhance farmers' income. However, these 'support systems' cannot help small farmers to the extent that natural farming and multicropping can.

PRO-SMALL FARMER

Multi-crop systems are advantageous for small farmers, while mono-cropping introduces multiple vulnerabilities. Multi-cropping with myriad crops provide yields in small amounts, round the year. Multi-cropping is the fulcrum of natural farming (NF). The national mission on natural farming (NMNF) gives us the opportunity to redress this paradox. Several traditional NF systems, namely; *Akkadi Saalu* (Karnataka), *Navadhanya* (Andhra Pradesh), *Oodu Payir* (Tamil Nadu) and *Bara-Anaj* (northern hilly areas) can show us the pathways.

There are doubt over the viability of



NATURAL FARMING. Sustainable model *KR DEEPAK*

nature and attempt reaching a stage of "doing nothing", till the natural processes are reestablished. NF when practised properly can eventually embrace all the 13 principles of agroecology (defined by the FAO).

Agroecology endeavours to balance local ecology with local economy. Its principles are; recycling, input reduction, soil health, animal health, biodiversity, synergy, economic diversification, co-creation of knowledge, social values and diet, fairness, connectivity, land and natural resource governance and participation.

Interactions with NF farmers practicing multi-cropping in remote tribal habitations of Parvathipuram and

average net income per acre is about ₹30,000. Two CSOs, ARTS & WASSAN are catalysing this transformation. These farmers are already meeting many principles of agroecology. Typically a tribal farmer has 3-4 acres and some land parcels are on hill slopes. They grow a plethora of crops; rain-fed rice, millets, pulses, vegetables, four types of rain-fed banana, pine apples, citrus fruits, jack fruit, mango, papaya, broom stick plants, etcetera. They also have goats, cattle, back yard poultry and seasonal fishery.

Their farm income is supplemented by about 150-200 days of MGNREGA wages and non-farm business.

These families have secured their own nutrition security, financial inclusion and are investing surpluses on their children's future. They have also demonstrated that their agriculture is circular, viable and sustainable.

The NMNF may consider adapting these design elements: (1) landscape approach; (2) community participation; (3) designing crop combination model(s) suiting a particular agroecology; (4) developing & connecting to local markets first and later to regional/national markets and (5) most importantly give 'time' to establish NF on a firm footing.

The writer is Deputy Managing Director, Nabard. Views

Organic farming in Maharashtra to tackle farm crisis draws attention

B.S. Satish Kumar
BENGALURU

Neighbouring Maharashtra has attracted the attention of the country's agricultural experts for its novel initiative that has shown that organic farming could be used as a tool to tackle agrarian crisis.

An experiment that has been carried out in six districts of Vidarbha region, which had seen a series of farmers' suicides following agrarian crisis, is now being extended to the entire State following its success.

"We have enrolled 9,600 farmers from the Vidarbha region under the organic farming initiative



An experiment that has been carried out in six districts of Vidarbha region, which had seen a series of farmers' suicides following agrarian crisis, is now being extended to the entire State following its success. SPECIAL ARRANGEMENT

that commenced in 2020. Not a single agrarian crisis-related suicide has been re-

ported so far among the families of these farmers as the initiative has turned

farming into a remunerative venture. At the same time, suicides have continued among other farmers who have continued with conventional farming and who are not part of this project," Arif Shah, Superintendent Agriculture Officer from Maharashtra, told *The Hindu* in Bengaluru.

Mr Shah made a presentation on the organic farming initiative at a national convention on biodiversity in Bengaluru on October 23.

Though some individual farmers were into organic farming before the commencement of this project, that did not have much impact as there were no col-

lective efforts, Mr. Shah noted. He said the idea was conceived in 2018 and the project began in 2020.

Titled as "Dr. Punjabrao Deshmukh Javik Kheti Mission", which later became "Dr. Punjabrao Deshmukh Naisraghik Kheti Mission", a total of about 12 lakh hectares of land has been brought under organic farming.

Many options

Farmers are free to choose any organic method of their choice from a list of options that includes plain organic farming, natural farming, zero budget natural farming, biodiversity etc. However, composting is the central theme of the

project. The main feature of this project is that the government not only organised the farmers into various groups, but also guides them besides taking up capacity building through training programmes, he pointed out. There will be one farm inspector for 60 farmers and one master trainer for each Farmers' producers' organisation, he explained.

The trainers were first taught about organic farming and in turn, they trained farmers. The government not only supports farmers in input sourcing and management, but has also lent a helping hand in marketing

by providing subsidies towards setting up market counters and procuring mobile vans. Each farmer-member has paid a share of ₹4,000 under the capital.

"Owing to pragmatic and collective measures, the input cost has reduced, the quality of produce has improved, and farmers are getting remunerative prices owing to branding their produce as premium," Mr. Shah noted.

In fact, there is an option of either going for bulk marketing or retail marketing depending upon farmers' choice and price situation, he pointed out.

While organic certification system too has been

introduced to build the brand value, the farmers themselves have started producing bio-pesticides in the farm labs set up under the project, he explained.

In the next level, the Maharashtra government is planning to expand this project's scope to 25 lakh hectares by 2028.

Karnataka's potential
An official from Karnataka who participated in the event observed that the State had the potential to try such an experiment given the high demand for organic produce, particularly in Bengaluru. The city accounts for over 600 organic produce outlets.

Organic management of insects, diseases in rabi crops

The increasing attention of people towards organic foods has now indicated the cautiousness about hazardous effects of chemical pesticides on health has made the growers to adopt organic farming. The naturally occurring predatory fauna and the environment play a direct or indirect role in reducing the pest populations or their damage. In this article organic management of insects and diseases on major crops such as wheat, rapeseed-mustard and chickpea have been addressed.

Wheat aphids

Aphid attack in wheat starts in the second or third week of December till March. Both nymphs and adults suck cell sap from leaves and the maturing grains. Affected leaves become sticky after deposition of honey dew excretions on which black sooty mould develops thereby putting an adverse effect on plant vigour and quality of the produce. Damage caused by the pest is more in the earhead stage of the crop and in severe cases substantial yield losses are caused. The coccinellid predators (ladybird beetle) become active on the appearance of the aphids. Few farmers treat coccinellid grubs as a damaging pest, which is actually a

natural predator on the aphids, so there is no need to spray against it. Secondly, some farmers start spraying when aphids are noticed on the leaves which should be avoided as it is not a big issue till it appears on the earheads.

Management: When aphids start appearing on the earheads give two sprays of home-made neem extract @ 2.0 litres at weekly intervals by using 80-100 litres of water per acre.

Yellow Rust of Wheat

Yellow rust, a fungal disease of wheat, can cause significant yield losses if not managed effectively. Initially, symptoms appear as small chlorotic lesions on leaves and later on yellow pustules eventually emerge from these lesions. Yellow rust can spread over long distances through wind currents and locally through direct contact between plants, Farm equipment and human activities. Wind and frequent rain in February and March may exacerbate the spread and severity of disease. Minimum temperature in the range of 7-13 °C coupled with 85-100% relative humidity during the night and maximum temperature in the range of 15-24 °C during day are congenial for infection, development and spread of disease. Frequent rains along with wind during Feb-March may further enhance the disease severity and spread.

Farmers are advised to adopt integrated management of yellow rust:

Grow yellow rust resistant wheat varieties (PBW Zinc 2, PBW RS1, PBW 725, Unnat PBW 550, PBW 752, WHD 943, PDW 291 and PBW 660), especially in disease prone sub mountainous areas of the state. Farmers should start monitoring the crop from the sec-

ond week of December onward and keep an eye on the crop, especially after irrigation or rain, to identify the earliest infection. For the management of yellow rust in an organic farming system four sprays of fermented buttermilk @ 20% v/v (200 ml/ liter of water). First prophylactic spray one month after sowing followed by 3 more sprays after the appearance of the disease at an interval of 10 days.

Mustard aphid

Aphid is a small, soft-bodied, pear-shaped insect that has a pair of cornicles (wax-secreting tubes) projecting out from the fifth or sixth abdominal segment. A cold and cloudy weather is very favourable for the development of mustard aphids. The green plant lice become innumerable, covering the inflorescence and siliqueae. They suck the plant sap in huge quantities and as a result, the plants remain stunted, siliqueae shrivel up and seeds do not develop.

Management: Sow the crop at recommended time preferably up to third week of October. Apply recommended doses of organic manures. Spray any of the biopesticides like Modified Brahmastra or homemade neem extract @ 4 litres using 80-125 litres of water per acre at initiation of aphid attack, and repeat application at weekly interval, if required.

Sclerotinia stem rot of mustard

Sclerotinia stem rot, a fungal disease, is one of the serious diseases of mustard crop. Initial symptoms typically appear as water-soaked, soft lesions on the lower stems of the plant. Later on, a white, cottony or fluffy fungal growth can be observed on the stem surface, particularly around the water-soaked areas. This fungal growth changes into sclerotia which are hard, black, irregular structures

that may form in or around the affected stem areas as well as in the pith of the stem. During harvesting, these sclerotia get mixed in soil and can survive in soil for extended periods, serving as a source of inoculum for future infections. As the disease advances, the infected tissue may become dead, leading to wilting of the plant, especially in the affected parts. Infected plants may collapse or break at the point of infection if the plant canopy is heavy. Dense plantings, wet conditions especially after rainfall or irrigation and low temperature trigger the disease because these conditions help in the germination of sclerotia, generally in January when the temperature is quite low and the soil has an abundance of moisture. For the management of this disease, avoid irrigation of rapeseed-mustard crops from December 25 till January 15.

Note:

Preparation of PAU homemade neem extract: Boil 4.0 kg terminal parts of the shoots of neem trees including leaves, green branches and fruits in 10 L water for 30 minutes. Then, filter this material through muslin cloth and use the filtrate for spraying at the recommended dose.

Preparation of modified Brahmastra: Put 2 kg leaves of guava, papaya, karanj and castor each, and 5 kg leaves of neem etc., after grinding (paste form with little bit water) into 10 litres of cow urine. Give the extract with four boilings and keep under shade for 48 hours followed by filtration. Use the filtrate as per recommendation. Even cattle urine can also be used.

(By Subash Singh and Ajay Kumar Choudhary, School of Organic Farming, Punjab Agricultural University, Ludhiana)

AGRIWEATHER



The Chandigarh regional centre of the India Meteorological Department (IMD) has forecast scattered rainfall in Punjab and Haryana on January 22 and isolated rainfall in Haryana on January 23. IMD has warned of thunderstorms/lightning at isolated places in Haryana January 22.

Urea mafia running rampant in State

Farmers' subsidised urea fertiliser slipping into other states

HANS NEWS SERVICE
BENGALURU

IN Karnataka, a notorious urea mafia is thriving, diverting subsidised urea fertilizer meant for farmers to industries in neighbouring states. Thieves are reportedly stealing the fertilizer during the night and supplying it to industries, filling their own pockets in the process.

Just as rainfall is crucial to agricultural productivity, so too are fertilizers. To alleviate the financial burden on farmers and to address the issue of nutrient imbalance in the soil, the central government provides subsidies for the purchase of various fertilizers, including urea. The Centre has integrated urea into the Nutrient-Based Subsidy (NBS) scheme. The market price for a 45 kg bag of coated urea is Rs 1,666, but it is provided to farmers at a subsidized rate of Rs 267, with the government covering the remaining Rs 1,399.

The NBS scheme has become a means of financial gain for the urea mafia. According to government regulations, subsidised urea should not be used for industrial purposes; however, in recent years, there has been a noticeable increase in its use for industrial applications rather than for agriculture. Urea is increasingly utilized as a raw material in plywood, glue (gum), and animal feed production. This has led to an artificially inflated



demand for urea.

Fertilizer shops, silk farmers, and farmers' service co-operatives are all capitalizing on the demand for urea. Owners of fertilizer shops are sending urea to industries in neighbouring states like Kerala and Tamil Nadu through intermediaries. Intermediaries are purchasing urea using farmers' Aadhaar cards, and then selling the 45 kg bags to industries for prices ranging from Rs 2,500 to Rs 3,000. Reports indicate that urea is also being smuggled to Nepal and Bangladesh.

Farmers in North Karnataka have been waiting for a Rs 5 incentive on milk for the past six months while Rs 4.36 crore in subsidies remains pending. The Agriculture Department's Vigilance Cell has been monitoring illegal urea sales. Despite this, racketeers continue their operations, evading the vigilance cell's officers. Over the last five years, the cell has uncovered 42 cases of illegal urea sales across the state, seizing 712 metric tonnes of urea.

Regions in South Karnataka—including Mandya, Mysuru, Chamarajanagar, Hassan, Tumkur, Chikamagaluru, Shivamogga, and Davangere—have seen

a significant rise in illegal urea sales. Officials from the vigilance cell have stated that urea is being illicitly supplied to industries along the state borders.

To purchase any fertilizer at the subsidized rate, farmers must provide their Aadhaar card or Kisan Credit Card number. Additionally, the Point of Sale (POS) system mandates the farmer's name, the quantity purchased, and biometric confirmation. However, fertilizer shop owners are reportedly using fake Aadhaar cards or Kisan Credit Card numbers in the names of farmers to sell urea. Retail traders are collaborating with intermediaries to divert urea to industries. The intermediaries entice farmers with financial incentives to buy urea, which is then supplied to industries.

Complaints regarding the illegal sale of subsidised urea to industries are being registered as part of efforts to crack down on this racket. Farmers with relevant information about this illegal activity are urged to contact the helpline number 18004253553, as stated by K.G. Anup, Additional Director of the Agriculture Department Vigilance Cell.

Coromandel opens advanced soil, leaf testing laboratory

Equipped with state-of-the-art technologies, this facility is designed to provide precise soil and plant nutrient analysis

BIZZ BUZZ BUREAU
VISAKHAPATNAM

COROMANDEL International Limited, India's leading agri-inputs company, has inaugurated an advanced soil and leaf testing laboratory here at its plant in Kakinada district.

Equipped with state-of-the-art technologies, this facility is designed to provide precise soil and plant nutrient analysis, helping farmers across India better understand their soil and its nutrient composition. This empowers them to make informed decisions on agri-input usage, promoting sustainable agricultural practices while safeguarding soil health for future generations.

The hi-tech laboratory was inaugurated by Arun Alagappan, Executive Chairman of Coromandel International Limited, along with S Sankarasubramanian, Man-



(L to R) Madhab Adhikari, VP & Head, Sales & Marketing (Fert & SSP), S Sankarasubramanian, Managing Director & Chief Executive Officer, Dr Binaya Kumar Parida, Sr AVP & Chief Agronomist and Arun Alagappan, Executive Chairman, Coromandel International Limited at Kakinada on Monday

aging Director & CEO, in the presence of other senior leadership team.

The laboratory features advanced equipment such as Inductively Coupled Plasma Optical Emission Spectroscopy (ICP-OES), which provides precise detection of essential soil and plant nutrients; Energy Dispersive X-ray Fluorescence (ED-XRF) which enables detailed leaf nutrient analysis. Other advanced technologies present at the lab include spectrophotometers, microwave

digesters, and near-infrared spectrometers, ensuring comprehensive and precise testing capabilities. These tools provide farmers with valuable insights into soil health and nutrient availability, allowing them to adopt precise agricultural practices that optimise fertiliser usage. By addressing nutrient deficiencies, improving crop yields, and minimising unnecessary input costs, the laboratory supports long-term soil health and sustainable agriculture.

Dhanuka Agritech acquires global rights for two Bayer fungicides for ₹165 crore

Our Bureau

Bengaluru

Dhanuka Agritech Ltd is foraying into the global markets by acquiring the international rights for marketing and distribution of two fungicides Iprovalicarb and Triadineol from Bayer AG in a ₹165 crore deal.

This acquisition grants Dhanuka access to markets in over 20 countries spanning from Latin America, Europe, the Middle East, Africa and Asia, the company said in a statement. Bayer had invented these products.

“In 2023, the revenue from these products was ₹220 crore. We are targeting an EBITDA margin of 12-15 per cent post-integration from these products. While in FY26 the revenue genera-

tion would start in India by Q1 and is expected to expand internationally, with full control of operations by Q4,” said Harsh Dhanuka, Executive Director, Dhanuka Agritech Ltd.

HORTICULTURAL CROPS

Iprovalicarb is a specialised fungicide designed to combat Oomycetes diseases in horticultural crops and is available under brands such as Melody Duo, Melody Compact, and Melodika.

Triadimenol is recognised as an effective seed treatment fungicide and is widely used across cereals, cotton, and coffee.

To enhance cost efficiencies and scalability, Dhanuka plans to transition its manufacturing operations for Iprovalicarb to its Dahej facility in 2-3 years.

India should reciprocate if US imposes higher tariffs: Trade experts

They noted that India has previously implemented retaliatory customs duties on several US products, such as apples, in response to what it deemed 'illegal' tariffs imposed by America on certain steel and aluminium products

NEW DELHI: India should respond with equal measures if the newly elected US President Donald Trump would impose higher tariffs on domestic goods, trade experts say.

They noted that India has previously implemented retaliatory customs duties on several US products, such as apples, in response to what it deemed "illegal" tariffs imposed by America on certain steel and aluminium products.

In December last year, Trump has said India charges "a lot" of tariffs, reiterating

his intention to impose reciprocal tariffs in retaliation for what New Delhi will impose on the import of certain American products. "India should respond firmly and in equal measures," economic think tank Global Trade Research Initiative (GTRI) Founder Ajay Srivastava said.

In 2018, when the US taxed Indian steel and aluminium, India retaliated by raising tariffs on 29 US products, recovering equivalent revenue.

"This measured response showed India's capability to pro-



tect its trade interests while staying balanced," Srivastava said.

He added that Indian exporters may face high customs duties for goods like automobiles, textiles and pharmaceuticals if the new US

administration decides to pursue the 'America First' agenda.

He also said that if Trump would tighten H-1B visa rules, it may impact the growth of Indian IT firms. Over 80 per cent of India's IT export earnings come from the US. The US is India's largest trading partner, accounting for over \$190 billion of annual trade.

Sharing similar views, international trade expert Abhijit Das said that additional duties by the US, if implemented, will lock the market for Indian goods.

"Of course, India should retaliate with equal measures," Das said, adding that imposing retaliatory customs duties would strengthen India's position in negotiating the removal of "illegal" tariffs in the future.

"In the case of imposition of duties by the US, India should explain why those are illegal and if not withdrawn, we should not hesitate in taking retaliatory measures," he said adding Trump has complaints in several sectors like agri goods, industrial products, services, intellectual property rights and

digital trade.

Another expert said that the Indian government should do a comprehensive consultation with the stakeholders and prepare itself to deal with any such move by the new American authorities. Trade experts further stated that Trump's claim that India is an "abuser" of import tariffs is unfair as many nations including America protect their domestic industries by imposing high customs duties on certain products. In October 2020 also, Trump labelled India as the 'tariff king'.

PTI

'America First Trade Policy' may lead to tariff threats for India

Amiti Sen

New Delhi

US President Donald Trump's America First Trade Policy could translate into tariff threats for India which the government may counter through negotiations and with retaliation if needed, sources have said.

Experts suggest that India should closely watch what the Trump regime does over the next few weeks and be open for consultations with the US government, while not ruling out retaliation.

"The America First Trade Policy is harsh on China but doesn't name India. However, it says that the US government will investigate the country's trade deficits and may impose supplemental tariffs on trade partners. India would no doubt be ready to hold consultations with the US on the matter if it seeks one and react appropriately," a source tracking the matter told *businessline*.

It is inevitable that there will be some action around India as Trump needs more market access and wants to balance trade, pointed out



TRADE TOSS-UP. If consultations with Trump regime fail and US imposes tariffs, New Delhi must retaliate proportionately, say experts REUTERS

Biswajit Dhar, Distinguished Professor, Council for Social Development.

'AIM FOR TALKS'

"In the first instance, we should aim at opening up consultations with the US. We should never have a knee jerk reaction," Dhar said.

Only if the consultations do not result in anything constructive, India should take measures to retaliate, he said. But India's response needs to be proportionate to steps taken by the US, Dhar added.

India had retaliated by increasing tariffs on 29 products imported from the

US, including apples and walnuts, when Trump had imposed taxes on its steel and aluminium during his first stint as President in 2018. "India has already demonstrated that it can protect its interests by retaliating in a measured way. It can look at appropriate ways to hit US if required including taking action against US tech companies," trade expert Ajay Srivastava said.

The US was India's largest export destination in FY24 with shipments valued at \$77.51 billion. With imports from the US at \$42.19 billion, India's trade surplus was at \$35.32 billion in FY24.

Budget 2025: A roadmap to empower farmers and reignite rural India



A.S. MITTAL

The Budget must go beyond promises—it must deliver feasible solutions to secure livelihoods, strengthen rural demand and bridge the rural-urban divide

Finance Minister Nirmala Sitharaman gears up to present the Union Budget 2025-26 on February 1, the nation stands at a pivotal crossroads. With GDP growth projected to dip to a four-year low of 6.4 per cent in FY 2024-25, the spotlight turns to revitalising the rural economy, a cornerstone of the country's consumption-driven progress.

The urgent call for agricultural reforms has grown louder, fueled by ongoing farmer protests, including the fast-unto-death by 70-year-old farmer leader Jagjit Singh Dallewal at Punjab's Khanauri border, which has captured national attention, demanding a legal guarantee for Minimum Support Price (MSP). Agriculture, which employs nearly 45 per cent of the country's workforce and sustains over 60 per cent of its rural population, is at a breaking point. Stagnant productivity, declining incomes, and policy neglect have left farmers in crisis. This Budget cannot be limited to lofty promises—it must deliver practical solutions to secure livelihoods, strengthen rural demand, and narrow the rural-urban divide. Revitalising agriculture is not just an economic necessity but a moral obligation to foster inclusive growth. Here's how Budget 2025 can introduce transformative measures to bolster the agricultural sector and ensure rural spending—currently contributing 60 per cent of total consumption—fuels India's economic resurgence.

1. Boost Agriculture Budget and Research

The allocation for agriculture and allied sectors constitutes only 3 per cent of the Union Budget, which needs to be raised to at least 7.5%. Unspent funds in this category should be carried forward to address critical gaps in research, education, and infrastructure for crop storage and processing. Investing in agricultural research institutions to develop climate-resilient crop varieties and sustainable farming techniques can enhance productivity. Encouraging public-private partnerships in agrarian innovation can further drive the sector's growth.

2. Provide Legal Backing to MSP

The persistent demand for Minimum Support Price (MSP) with legal guarantees highlights the sector's vulnerabilities. Implementing the MS Swaminathan Commission's recommendation of setting MSP at C2 (comprehensive cost of production) +50 per cent and granting it legal status can ensure private buyers do not exploit farmers. This reform would not put a significant financial strain on the government but could protect farmers from distress sales. Furthermore, creating a robust monitoring mechanism to enforce MSP and extending its coverage to more crops can improve farmers' incomes. Enhancing the transparency of procurement processes through digital platforms and integrating MSP enforcement with local market committees can also make the system more reliable.

3. Enhance PM-KISAN Support

The Rs 6,000 annual support to around 10 crore small and marginal farmers under PM-KISAN to help meet their working capital needs, unchanged since its launch in 2018, has not kept pace with inflation. However, with inflation averaging 6 per cent over the past six years, the government should consider doubling this support to Rs 12,000 annually to address farmers' growing financial needs. This increase could significantly impact



small-marginal farmers, who struggle to meet their expenses amid rising input costs for seeds, fertilisers, and irrigation.

4. Transform the Kisan Credit Card (KCC)

The KCC scheme provides short-term loans with an interest subsidy for up to Rs 3 lakh. However, the rigid repayment schedule often forces farmers to rely on private moneylenders to meet short-term cash requirements.

A more farmer-friendly approach would be to convert KCCs into running overdraft accounts, increase the credit limit to Rs 10 lakh, and cap interest rates at 4 per cent. Removing usage restrictions on loans would further empower farmers to make long-term agricultural investments. Additionally, simplifying the KCC application process and enhancing awareness through rural outreach programs can improve access to credit. Expanding the scheme to include sharecroppers, tenant farmers, and farm labourers can promote financial inclusion in agriculture.

5. Introduce a Pension Scheme for Small Farmers

India's farmers lack a robust social security net. A non-contributory pension of Rs 3,000 per month for small and marginal farmers aged 60 and above, owning up to 2 hectares of land, could provide much-needed financial security. Contributions from state governments could further augment this scheme. Implementing such a pension system can alleviate poverty among elderly farmers and reduce their dependence on family support.

6. Strengthen Animal Husbandry and Dairy Sectors

Livestock contributes over 25 per cent to agricultural GDP but suffers from fluctuating milk prices and restrictive cattle rearing and trade policies. A simple yet impactful step would

be legally mandating private dairies to match or exceed the milk procurement prices set by cooperatives like Amul. Additionally, incorporating milk and eggs into the mid-day meal scheme can improve farm incomes while tackling malnutrition among children. Promoting cattle insurance schemes and increasing budgetary allocation for veterinary services can enhance livestock productivity. Encouraging the adoption of modern technologies like artificial insemination and genetic improvement can further boost the sector's contribution to rural livelihoods.

7. Reform Fertiliser Subsidy Policies

The current system treats fertiliser subsidies as farmer benefits but deducts the subsidised amount while calculating MSP. This practice lowers farmers' actual remuneration. MSP calculations should instead consider the market price of inputs, ensuring fairer returns for farmers. The government could also promote balanced fertiliser use by incentivising organic farming practices and providing subsidies for bio-fertilisers. A shift towards a direct benefit transfer system for fertiliser subsidies can reduce leakages and ensure benefits reach the intended beneficiaries.

8. Simplify Crop Insurance

The PM Fasal Bima Yojana requires farmers to navigate complex procedures to claim compensation. The government should shoulder the entire premium initially, including the state's share, and simplify the claim process. This would reduce the administrative burden on farmers while ensuring timely compensation for crop losses.

Leveraging technology like satellite imagery and AI-driven risk assessment models can streamline the verification process and minimise disputes. Expanding insurance coverage to include post-har-

vest losses and natural calamities can make the scheme more comprehensive and farmer-friendly.

9. Reassess Inflation Control Policies

Policies like export bans, stock limits on agricultural produce, and the Food Corporation of India (FCI) dumping grains at below-market prices undermine farmers' profitability. These interventions should be re-evaluated to balance inflation control with fair returns for farmers. Encouraging exports of surplus produce and ensuring better storage infrastructure can reduce post-harvest losses. Developing a decentralised agricultural pricing system driven by real-time market data can align domestic policies with global demand trends. A Vision for Fairness and Growth India's agricultural sector has long been the backbone of its economy, yet farmers have faced systemic neglect and economic disparity.

Over the last decade, the government has written off Rs 12.30 lakh crore in big corporate loans, while farmers continue to struggle under mounting debt (Rs 18 lakh crore) and policies that fail to guarantee fair prices for their produce. The 2025 Budget presents an opportunity to correct these imbalances. By addressing these critical issues, the government can improve farmers' lives, spur rural demand, catalyse GDP growth and lay the foundation for a more equitable and sustainable agricultural future. It's time to honour the farmers who feed the nation by delivering the support they deserve.

(The Author is Vice-Chairman of Sonabika ITI Group, Vice-Chairman of the Punjab Economic Policy and Planning Board, Chairman of ASSOCHAM Northern Region Development Council. Views expressed are personal)

INDIA'S FARMERS LACK A ROBUST SOCIAL SECURITY NET. A NON-CONTRIBUTORY PENSION OF RS3,000 PER MONTH FOR SMALL AND MARGINAL FARMERS AGED 60 AND ABOVE, OWNING UP TO 2 HECTARES OF LAND, COULD PROVIDE MUCH-NEEDED FINANCIAL SECURITY

Transforming Indian Agriculture into a Global Powerhouse

With its vast talent pool and large consumer base, India is uniquely positioned to lead the global agritech revolution

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The agriculture industry in India plays a pivotal role in the country's economy, contributing nearly 16% of the GDP and employing 44% of the workforce. According to Redseer Strategy Consultants, these figures are slightly higher, with agriculture accounting for 18% of GDP and employing 45% of the workforce. Moreover, as per the Press Information Bureau (PIB), India ranks 8th among the world's top agricultural exporters with a 2.33% share.

Adding to this momentum, a study by Ernst & Young highlights the immense potential of agritech firms in India, presenting a \$24 billion market opportunity. However, with only 1.5% penetration, this market

remains largely untapped.

TECHNOLOGY DRIVING CHANGE IN AGRICULTURE

Agritech, or agricultural technology, leverages advanced solutions to address the challenges of modern farming, such as improving productivity, reducing input costs, and adapting to unpredictable climate conditions. Using technologies like Artificial Intelligence (AI), the Internet of Things (IoT), and Blockchain, agritech startups are enhancing efficiencies in crop cultivation, soil management, and harvesting processes.

India's agritech sector has surged, growing from 43 startups in 2013 to over 1,000 by 2020, with private equity investments rising by 50%. A McKinsey report highlights how increased farmer awareness, rural internet access, and efficiency demands have driven

GOVERNMENT INITIATIVES POWERING THE GROWTH OF AGRITECH

Recognizing the transformative potential of agritech, the Indian government has implemented several initiatives to encourage innovation and digital adoption in agriculture.

Key measures include:

- 1. Farmer-Producer Organizations (FPOs):** With \$750 million allocated to set up over 10,000 FPOs in five years, the government aims to unify fragmented farmer bases, enabling agritech companies to scale effectively.
- 2. AgriStack:** A unified database of agricultural datasets linked to land holdings allows agritech firms to customize offerings based on specific farmer needs, including crop type and soil conditions.
- 3. Digital Soil-Health Cards:** These cards map soil composition at the farmer level, promoting precision farming and tailored solutions.
- 4. eNAM Platform:** The National Agriculture Market connects existing APMC mandis, ensuring transparent pricing and better market access for farmers.
- 5. Agriculture Accelerator Fund:** Recently announced to seed new startups and boost digital solutions, this fund complements the government's push for an open-source digital infrastructure to support agritech growth.

this growth, with incumbents using digital tools to connect with farmers and expand services.

A \$95 BILLION OPPORTUNITY

The agritech ecosystem has the potential to add \$95 billion to the Indian economy by increasing farmer incomes, reducing input costs, and improving productivity. According to Avendus, the market size of agritech is expected to rise from \$4 billion in 2022 to \$34 billion by 2027, with the food crop segment alone predicted to grow from \$3 billion to \$25 billion.

"India is our prime and long-term focus. India is an agro-based economy. Agriculture and animal husbandry play crucial roles in the economy. Agrotech is a driving force for the economy. We are actively scouting

for Indian partners from technology, particularly AI, and from amongst companies engaged in the agri and food sectors. Our experience in Africa can help Indian farmers grow," said Jean-Claude Morel, Director of International Business Development & Sales,

Farm4Trade SRL, Italy.

Startups are the driving force behind India's agritech boom. Leveraging AI-driven tools, predictive analytics, and process automation, these companies are transforming agriculture into a tech-driven industry.

"Ag-tech's impact is vast, serving as the backbone of multiple industries. Its innovations drive efficiency and transformation across agriculture, manufacturing, finance, and healthcare, making it a dynamic and versatile sector," said Shantanu Bhat-tacharya, MD of Blu Cocoon Digital Pvt Ltd.

As agritech startups and established companies continue to innovate, the sector is poised to not only revolutionise Indian agriculture but also contribute significantly to the country's economic growth.



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