

16.06.2016

THE HINDU

New technology for treating sewage water for crops

India and the European Union have developed a cost-effective technology for treatment of sewage waste for irrigation, especially in rural areas, using natural filters like sand and plants.

The project involves collecting the sewage waste before it reaches the water bodies and then treat it using natural filters like sand, gravel, pebbles and plants to remove the impurities.

Under the project, many wetland plant species, such as *Canna indica*, lemon grass, napier, para grass, typha, water hyacinth, water lettuce and a weed species *Agaratum conyzoides*, have been identified for purifying the wastewater.

The are helpful in reducing the nutrient load in the free-water surface and sub-surface constructed wetlands.

The project has been undertaken in Karnataka, Maharashtra, Telangana, Uttar Pradesh and Madhya Pradesh.

“This is a cost-effective method to not only use the sewage, but also effectively use the water in rural areas,” said Suhas Wani, Project Leader and Director, Asia Region, ICRISAT— one of the partnering institute in the project from India.

Cost of installation

It would cost anywhere between Rs 3 lakh and 5 lakh to build a facility like this in an area housing 2000 people, Mr Wani said.

“We have also written to the PMO if we could integrate this with the Swachh Bharat Mission as it also involves treating of waste water,” she added.

The reuse of treated wastewater to irrigate fields has shown increased yields of up to 40 per cent in crops such as okra, brinjal and chilli plant as compared to those irrigated by fresh water.

The 'Water4crops' is one of the largest technology initiatives between India-EU. India has contributed 3 million euros to the project and the EU 9 million euros.

The EU consortium includes 21 partners from 8 countries while the Indian consortium has 11 research and development partners led by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT).

The project also proved that the construction of wetland reduces the amount of pollutants, chemical oxygen demand (COD) in wastewater by 30-92 per cent.

Based on the pilot sites at the ICRISAT headquarters in Hyderabad and other locations, a total of 28 watershed sites are now supported by various corporates under corporate social responsibility (CSR) projects as well as the Government of Karnataka's Bhoo Samrudhi programme and Andhra Pradesh Primary Sector Mission's (APPSM) Rythu Kosam.

Pilot project

It is also being piloted at a brewery in Medak in Telangana.

K. Vijay Raghvan, Secretary Department of Biotechnology, Ministry of Science and Technology, however, said the scheme was more effective in rural areas as compared to urban areas because the pollutants involved in urban areas need Sewage Treatment Plants (STPs).

Sanitation and health

Y. S. Chowdary, Minister of State, Ministry of Science & Technology highlighted the importance of treated wastewater for addressing the issues of sanitation and health in rural areas as well as water shortage for agriculture to improve livelihood.

Tomasz Kozlowski, the Ambassador of the EU to India said the project is a good example of how top-level research organisations from several European

countries and India can jointly develop concrete solutions that benefit both sides. - PTI

It involves collecting sewage waste before it reaches the water bodies and then treating it

Centre plans to import pulses

Finance Minister Arun Jaitley, on Wednesday, held an inter-ministerial meeting to discuss the spiralling prices of food and carve out a strategy to cool inflation.

Food Minister Ram Vilas Paswan, Agriculture Minister Radha Mohan Singh, Commerce Minister Nirmala Sitharaman and Urban Development Minister Venkaiah Naidu attended the meeting. Chief Economic Advisor Arvind Subramanian was also present.

During the meeting, discussions were held to devise ways to meet the gap between demand and supply in pulses. It was decided that the process should be expedited with nations for government-to-government import of pulses to meet domestic shortage and strengthen buffer stocks.

“We are making efforts to fill the demand-supply gap through imports and local purchase. Also, we are in talks with Myanmar and other countries for government-to-government import of pulses to meet shortage,” Mr. Paswan told reporters after the meeting.

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Commenting on the spike in tomato and sugar prices, Mr. Paswan told reporters that tomato prices will ease in the next 15 days, while assuring that the government will not let sugar prices to increase.

Earlier in the day, Mr. Paswan flagged off vans for selling pulses at reasonable prices in Delhi. These vans run by the National Cooperative Consumer Federation of India will sell pulses, mainly tur and urad, at Rs. 120 a kg. Outlets of Kendriya Bhandar and Safal are already selling pulses in Delhi and NCR at these rates.

Farmers, SHGs trained in mushroom cultivation

“One can earn about Rs. 750 a day with an investment of Rs. 15,000”



District Krishi Vigyan Kendra (KVK) of Tamil Nadu Agriculture University (TNAU) has conducted a training programme for farmers and members of women self-help groups (SHGs) on cultivation of milky mushroom to supplement family income during off-season.

As the farmers were busy only from October to January when they took up agriculture activities after the onset of northeast monsoon, the university suggested that they could be trained in farm-based activities to earn additional income.

As part of the plan, the KVK imparted training to 78 farmers and members of women SHGs at its office here on Tuesday. Assistant Professor J. Ramkumar, Agricultural Entomology, KVK, who conducted the training, said a farmer could earn about Rs. 750 per day, if he/she invested about Rs. 15,000 for establishing a 10x15 ft mushroom shed and for buying spawn bottles.

They chose the 'heat loving' milky mushroom as it was best suited for the district, which witnessed tropical weather condition, he said, adding the farmers were taught about forming mushroom bed with paddy straw, sterilisation process and maintaining spawn running room.

They were also taught about casing with sterilised soil after transferring the mycelial grown mushrooms into the shed and about the process of sprinkling water on a daily basis till mushroom buds sprouted and grew for harvest, he said.

Marketing would not be a problem as hotels serving mushroom dishes would buy them on a regular basis if the farmers tied up with them. The farmers could sell one kg of milky mushroom for Rs. 160 and they could harvest a minimum of about five kgs a day. For availing subsidy and financial assistance, the farmers were asked to contact agriculture department, he said. R. Rajasekaran, Programme Coordinator, KVM, who inaugurated the training programme, said they expected about 35 farmers but more than double the number turned up.

Copra procurement centres inaugurated

Collector M. Ravikumar inaugurated a direct procurement centre for copra on the premises of Primary Agriculture Cooperative Society at Sathankulam on Wednesday.

In his address, he said that the government had fixed procurement price at Rs. 59.50 for a kg of milling copra and Rs. 62.40 for ball copra. It would function for 180 days.

Later, he distributed welfare assistance of Rs. 80,000 to some coconut farmers, and identity cards to 11 farmers.

Kanniyakumari

Similarly, copra procurement began in the regulated markets in Thingal Nagar and Therur in Kanniyakumari district on Wednesday, according to Collector Sajjansingh R. Chavan.

Thovalai and Agasteeswaram Taluk Agriculture Producers Cooperative and Marketing Societies were also selected for copra procurement.

The copra procurement scheme would be in operation for 180 days from Wednesday. A farmer can sell one fourth of his annual production to the procurement centres. Farmers can sell their copra once in 45 days.

The amount payable to the farmers for the sale of copra would be credited to their bank accounts, Mr. Chavan said.

The Collector also distributed identity cards to a few progressive coconut farmers.

Joint Director of Agriculture Chandrasenan Nair, Deputy Registrar of Cooperatives Nadukkattu Raja, and Personal Assistant to Collector (Agriculture) Nijamudin participated.

TANFED commences copra procurement from farmers

Tamil Nadu Cooperative Marketing Federation Limited (TANFED) began procuring copra on Wednesday under price support scheme to the relief of several thousands of cultivators.

The procurement was initiated at the Avalpoondurai Regulated Market in Erode by District Collector S. Prabakar in the presence of Erode MP Selvakumara Chinnaiyan, MLAs K.S. Thennarasu and V.P. Sivasubramani, Joint Registrar of Cooperatives S. Ramadass and other senior officials.

Price

Milling copra was procured for Rs. 59.50 per kg and ball copra for Rs. 62.40 per kg to safeguard farmers from market vagaries. Earlier this month, Chief Minister Jayalalithaa announced that copra would be procured through Direct Procurement Centres for the next six months. Copra procurement will be carried out at Avalpoondurai every Tuesday, the Collector said, advising cultivators to register their names with Agriculture Department officials in their respective jurisdictions and obtain identity cards. The cultivators must further get certification from the respective Village Administrative Officers and Agriculture Department to register themselves with Perundurai Agricultural Producers Cooperative Marketing Society, to qualify for procurement of their produce.

The minimum support price will reflect in substantial benefit to cultivators in the district where coconut trees are maintained in 12,271 hectares. So far, the cultivators used to get only around Rs. 50 per kg.

TANFED, which was designated as the nodal agency for copra procurement by the Coconut Board during 2012, will transfer the stock to National Agricultural Cooperative Marketing Federation of India.

Vazhappadi

District Collector V. Sampath inaugurated the copra procurement centre set up at the Vazhappadi Agricultural Producers Cooperative Marketing Society premises on Wednesday.

Speaking on the occasion, Mr. Sampath said that the farmers can market their copra at a reasonable price under the support price scheme. He said that coconut trees stood on about 13,929 hectares in the district. The copra price has crashed in the open market and at present fetched a price less than Rs. 50 per kg. Following this, the Chief Minister ordered the setting up of the copra procurement centre, which he said will function for 180 days. The farmers will get a price of Rs. 59.50 per kg for the milling copra and Rs. 62.40 per kg for the ball copra. The farmers will be exempted from paying the one per cent market committee cess. The farmers will get the remuneration through bank electronic clearing service (ECS) or account payee cheque. The farmers while bringing the copra stock to the centre should bring a certificate provided by the village

administrative officer that the crop was raised in their farm, copy of chitta pass book, ID card provided by the Agriculture Department, bank account number, copy of the ration card etc.

The officers of the agricultural marketing department will procure the copra after verifying their quality as per the NAFED (National Agriculture Cooperative Marketing Federation of India) standards.

N. Elango, Joint Director of Agriculture; S. Srinivasan, Joint Registrar of Cooperative Societies; MLAs G. Chitra, A. B. Sakthivel, R. M. Chinnathambi, A. Maruthamuthu and P. Manonmani; S. Satish Kumar, president, District Panchayat; R. Elangovan, Chairman, Salem District Central Cooperative Bank, and others participated in the function.

Fellowships

As many as 27 students from the College of Horticulture, Bidar, have cleared the postgraduate entrance examination conducted by the Indian Council of Agriculture Research. Of them, four are eligible to get junior research fellowships. Dean M. S Lokesh has congratulated Shilpashree N., Harish S.M., Madhusudan R. and Chetan Kumar S., for winning the fellowships, stated a press release.

— Special Correspondent

Agriculture Dept. collecting soil samples

The Department of Agriculture has collected around 20,000 soil samples in the district for testing. The objective is to retain the fertility of the soil and promote the use of bio-fertilizer.

The district has 9.5 lakh hectare cultivatable land, including dry and irrigated land. The department has been encouraging farmers to get the soil tested to get information about the presence or absence of constituents and minerals in it.

This will help farmers to know what and how much fertilizer should be used on the soil and for which crop for getting a higher yield.

The State government has been issuing soil health cards from last year for the purpose. Farmers need to collect soil samples and get a detailed report from

laboratories on the nature of their land and the quantity of fertilizer that could be used there. The department believes that many farmers, having no knowledge about the quantity of nutrients and minerals present in the soil, were often using excess fertilizer which was damaging soil fertility.

“Because of the unchecked unregulated usage of fertilizer, farmers are unable to get high yield as they affect the soil fertility. Realising the importance of the issue, the government is encouraging farmers to get the soil tested. This will help them keep a check on the use of fertilizer,” D. Manjunath, Joint Director, Agriculture, said.

He said that the department had set a target of collecting 1.41 lakh soil samples in three years.

Focus on maize, soya bean and pulses for kharif

The Government is proposing to increase the cultivation of maize, soya bean and pulses in the coming kharif and reduce the cotton area in view of the likely fall in cotton prices globally this year, according to Agriculture Minister P. Srinivas Reddy here.

A total of 45.49 lakh hectares would have these three alternative crops and others including 6.14 lakh hectares of maize, 5.02 lakh hectares of soya bean and 4.85 lakh hectares of red gram.

The cotton crop area cultivation too was being reduced 10.64 lakh hectares with the Chief Minister, K. Chandrasekhar Rao, too advising the same.

Giving details of the salient features of the various schemes being implemented during this crop season (2016-17), the Minister said here on Wednesday that it was proposed to supply 8.49 lakh quintals of seed, including 5.69 lakh quintals during the kharif and 2.80 lakh quintals during rabi.

For strengthening the seed chain an amount of Rs.400 crore was being spent. Seed village programmes were being taken up on 24,390 hectares while the Telangana State Seed Development Corporation (TSSDC) was planning to produce eight lakh quintals of seed of various varieties through farmers. Development of 10 seed storage godown-cum-processing units was also being taken up, said Mr. Reddy.

As far as fertilizer was concerned, it was proposed to supply 17.30 lakh metric tonnes during kharif and 12.25 lakh metric tonnes of various varieties during rabi. Markfed had been appointed nodal agency for storing three lakh metric tonnes of fertilizers.

Conference on renewable energy to kick off today

A two-day conference of Power, Renewable Energy & Mines Ministers of States & Union Territories, which will begin in Goa on Thursday, will discuss the formulation of broad aspects of progressive Hydropower Policy, among others.

Piyush Goyal, Union Minister of State (IC) for Power, Coal and New & Renewable Energy will inaugurate the conference. The aim of this conference is to review the implementation of various ongoing schemes and a host of issues pertaining to power, coal and renewable energy sectors.

Ministers and Secretaries of the States and Union territories and senior officials of Power, Coal and Renewable Energy and Public Sector undertakings of the Ministries will meet to discuss issues like implementation of Ujwal Discom Assurance Yojana (UDAY) , 24x7 Power for All , Rural Electrification Programme, transmission corridors and availability, including intra- State transmission capacity .

In the coal sector, deliberations will be held on coal swapping.

Adoption of energy conservation building codes by States and energy efficient agricultural pumps will also be discussed in the conference.

In the area of renewable energy, statewise review will be taken on solar power, wind power and small hydro power as well as the compliance of renewable purchase obligations (RPOs) and renewable energy certificates (RECs).

Gearing up for kharif

With monsoon due to arrive soon, and with intermittent rains hitting the district, officials are gearing to motivate farmers to sow their crop scientifically to help reap rich harvests this kharif season.

As per estimates, in the current season the Agriculture Department has forecast that crops in to an extent of about 5.5 lakh hectares would be cultivated. There

has been an increase of 1.03 lakh hectares this time compared to last year where 4.47 lakh hectares was cultivated.

Decline

Due to shortage of rainfall last season, nearly 50,000 hectares less are being cultivated. Officials have been discouraging farmers from opting for cotton, and instead wanted them to plant crops such as maize, soya bean, redgram, and other pulses.

The Agricultural Departments has been organising awareness meetings across the district telling farmers that cotton would fetch less returns as the demand in the international market was down, and they would incur losses.

It was better to grow vegetables and pulses which assure expected returns.

According to officials, cotton would be sowed on 2.47 lakh hectares in the district. “We want to reduce that by 20 to 30 per cent this kharif,” said joint director, Agriculture, D. Usha.

Speaking to *The Hindu*, Collector Vakati Karuna said they are planning to take up cultivation of soybean, maize, redgram, green gram and other pulses on about 1.50 lakh acres this kharif.

Seeds and fertiliser were made available for distribution and conduct of soil tests have been completed to achieve the percent target.

For the current season, according to estimates, paddy would be taken up in about 1.55 lakh hectares, maize on 65,000 hectares, green gram on 25,000 hectares, chillies on 18,000 hectares, redgram on 15,000 hectares, turmeric on 10,000 hectares, and soybean on 5,000 hectares.

Direct procurement of copra begins in Vellore

To help coconut growers from falling prices, the district administration has started to procure copra directly from farmers through the cooperative marketing societies.

On Wednesday, Collector R. Nanthagopal launched the direct procurement of copra from coconut farmers at the agricultural producers' cooperative marketing society at Gudiyatham taluk.

Under this scheme, farmers can sell copra directly at the cooperative marketing societies.

In Vellore district, coconut was cultivated on 22,000 hectares.

Coconut cultivation was high in six taluks – Gudiyatham, Madhanur, Natrampalli, Pernambut, Alangayam and Tirupattur, a press release said.

Ground water table

The north east monsoon last year had helped increasing the ground water table in the district. This has helped coconut growers to an extent, the Collector said in the release.

As the price of copra has dropped, the Chief Minister has taken measures to procure the copra from farmers keeping in mind their welfare.

Accordingly, a kilo of milling copra is procured for Rs. 59.50, while edible copra is procured for Rs. 62.40 a kg.

To enable coconut farmers to bring the produce to these outlets, the Revenue and Agriculture Departments would jointly issue identity cards. The Collector has asked farmers to utilise the opportunity, the release said.

Under this scheme, farmers can sell copra directly at the cooperative marketing societies

Call for greater focus on storage of farm produce

With the State government focusing on development of primary sector it has become imperative that the latest post harvest and storage technologies be adopted. The post-harvest losses of agricultural commodities was high in the State due to the lack of adequate storage facilities and all steps would be taken to address the issue and bring down the losses, Chairman AP State Warehousing Corporation L.V.S.R.K. Prasad said.

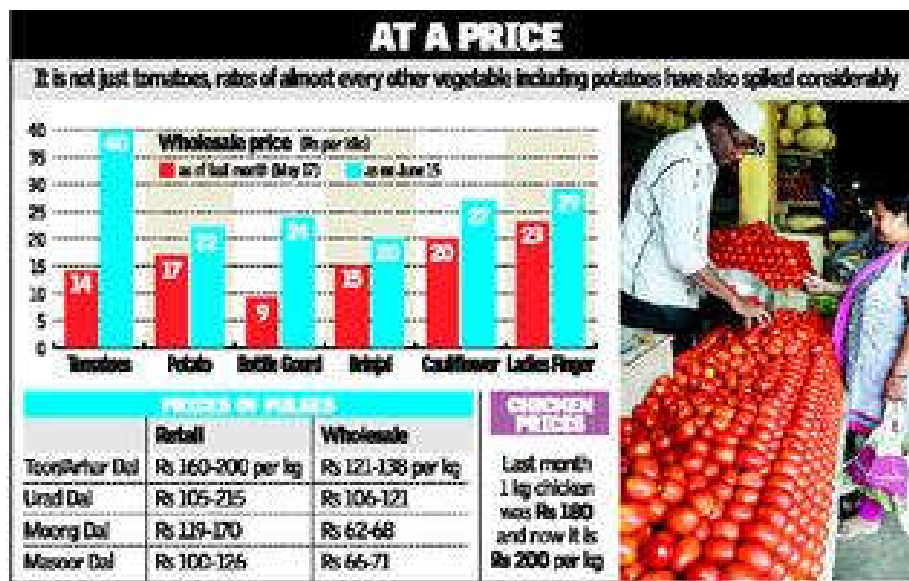
Addressing the managers and technical staff of the APSWC warehouses in Srikakulam, Vizianagaram, Visakhapatnam and East Godavari at the inaugural of three-day training programme here on Tuesday, he called for greater attention to storage of agricultural produce. A test would be conducted at the end of the three-day training programme and the ones who perform well in the examination would be sent to national-level training workshop.

The storage capacities were not enough to meet the present demand leave alone the projected demand after the irrigation facilities would improve in the State, he said.

He said the storage capacity of the corporation at present amounted to a little over 6 lakh metric tonnes and "steps will be taken soon for doubling the capacity once the State government gives its approval."

Now tomato rates reach a new high

After pulses, cost of poultry items such as chicken has risen by at least Rs.20 in just 15 days



Not only pulses, but prices of vegetables and poultry items have also skyrocketed this month.

Even as onion prices continue to remain low owing to surplus production, rates of another kitchen essential, tomato, have hit an all time high with some retailers selling it for Rs.80 per kg in the Capital.

The cost of chicken has also increased by at least Rs.20 in just about 15 days.

Rain check

Until last month, tomatoes were available for Rs.14 per kg at the Azadpur wholesale market, which has now climbed up to Rs.40 per kg.

In the retail market, the item is being sold anywhere between Rs. 50 and Rs. 80, depending on the quality.

According to Ashok Kaushik, President of Azadpur Tomato Merchant's Association, the primary reason is 'rain'.

“Unseasonal rains over one-and-a-half-month ago, followed by extreme hot weather conditions, had spoilt some of the produce.

“Now, when stocks are clearing out and farmers have to grow fresh crops, there is rain. The demand is much more compared to the supply,” he said.

Delhi gets tomatoes from Maharashtra, Andhra Pradesh, Karnataka, Uttar Pradesh and Himachal Pradesh.

With supplies thinning from other States, the Capital is currently procuring all its tomatoes from Himachal Pradesh, primarily from Solan district.

Unlike potato and onion, there is short shelf-life of tomato. The absence of adequate cold storage facilities in the supply chain has aggravated the problem.

Vegetable prices

It is not just tomatoes, rates of almost every other vegetable including potatoes have also spiked considerably.

In just a month's time, wholesale cost of potatoes has shot up by Rs.5, bottle gourd by Rs.15 and cauliflower by Rs.7, to name a few. However, in a high-level meeting convened by Finance Minister Arun Jaitley on Wednesday for

containing the surge in prices of food items, Food Minister Ram Vilas Paswan said that the rise in tomato and potato prices was “seasonal”.

In pulses, tur or arhar daal (split red gram) and chana daal (split Bengal gram) have witnessed the highest surge in prices with an increase of over Rs. 10-15 in the wholesale market.

“Cost wise arhar daal is the most expensive. In wholesale market, it is being sold at an average of Rs.130 per kg and in retail it’s between Rs 160 and Rs. 200.

High demand

“Chana daal is always high in demand because it is used for making flour too. But, following two successive droughts, the demand-supply gap is now widening,” said Sanjay Singhal, former general secretary of Delhi Grain Merchants Association and a pulse trader in Chandni Chowk’s Naya Bazar market.

Meanwhile, the Union Minister of Consumer Affairs, Food and Public Distribution on Wednesday flagged off mobile vans for selling pulses at reasonable prices in the Capital.

These mobile vans run by the National Cooperative Consumer Federation of India will sell pulses mainly tur and urad at Rs. 120 per kg in various parts of Delhi. Outlets of Kendriya Bhandar and Safal are already selling pulses in Delhi and the NCR at these rates.

In just a month, wholesale cost of potatoes has shot up by Rs.5 and bottle gourd by Rs.15

Copra procurement centre inaugurated

Copra procurement centre was inaugurated at Thethakudi South near Vedaranyam on Wednesday under the copra procurement scheme announced by the Chief Minister Jayalalithaa.

Collector S. Palanisamy, who inaugurated the centre, said that the centre would ensure attractive price for copra farmers. The district accounted for 3,874 hectares of which Vedaranyam taluk had a lion’s share of 2,184 hectares. He

said that the centre was run by the Cooperative Marketing Society at Vedaranyam and urged the farmers to enrol themselves as members of the society. The procurement price was Rs. 59.20 per kg for half copra and Rs.62.40 per kg for full copra.

The society has so far identified 715 potential copra farmers in and around Vedaranyam of whom 663 farmers had already enrolled with it. Efforts were being taken to enrol the balance 52 farmers.

About 230 kg of copra was procured on the inaugural day.

Rajendra Prasad, Joint Registrar of Cooperative Societies, spoke.

Heat stress in poultry to come down

Though temperature is expected to be slightly high in the next two days, wind speed will keep away from the heat stress in poultry.

A press release from the Agromet Field Unit of Veterinary College and Research Institute here and Regional Meteorological Centre, Chennai said that the sky will be generally cloudy with chances of isolated rainfall.

Maximum and minimum temperature will respectively be 36 degree Celsius, and 26 degree Celsius respectively. Wind speed will be around 8 km per hour, mostly from west.

The release said that slightly subdued activity of southwest monsoon for the time being will bring cloudy sky without significant rain over the zone. However, the situation is likely to improve after two days and will bring rain over the district near Western Ghats and mild rainfall over the rain shadow districts such as Namakkal.

To counter feed wastage in elevated poultry sheds due to high wind speed, farmers should raise the curtains over the sides of the poultry shed to about 3 ft height, the release added.

Funds, training for vegetable farming

Rs.5,000 aid for farming in 10 cents

An integrated vegetable cultivation scheme will be implemented in the Erattayar, Kanchiyar, Kattappana, Ayyappancoil, Upputhara, Vandanmedu and Chakkuplaam Krishi Bhavan areas.

For public sector institutions, including educational institutions, Rs.4,000 will be given for cultivating vegetables in 10 cents of land and Rs.1,000 for other expenses.

Farmers will be trained and those who cultivate vegetables in cluster units will be given financial assistance to purchase pump sets and other equipment.

On house premises

Those who do not belong to cluster units will be given an assistance of Rs.15,000 per hectare for vegetable cultivation. Those who cultivate vegetables on house premises will also be given financial support under the scheme, said a release here on Wednesday.

Arecanut prices continue to fall

Extension of cultivation area and import in large quantities are possible reasons for drop: experts

The fall in the prices of arecanut has continued with the rate of all varieties registering a decline of around 20 per cent in the past nine months.

The price of the rashi variety of arecanut that was traded at Rs. 300 a kg in September 2015 has come down to Rs. 240 a kg now. The prices of idi, gorabalu, saruku varieties have also witnessed a similar decline.

‘Old produce not sold’

Kadidal Gopal, president, Shivamogga Arecanut Merchants’ Association, told *The Hindu* that the chances of recovery of prices in the near future were less as there was a gap between the demand and supply now.

He said that a major chunk of the farmers are yet to sell the produce of 2015-16. The flow of fresh produce of 2016-17 to the market will commence from the end of September.



Hard times: A majority of the farmers are yet to sell the produce of 2015-16.—
file photo

Mr. Gopal attributed extension in the area of cultivation of arecanut and import of the produce in large quantity as reasons for decline in the demand. It may be mentioned here that the prices of arecanut had reached Rs. 900 a kg in August 2014. The decline in the yield in 2013-14, owing to fruit rot disease, had created a scarcity of produce in the market that resulted in enhancement of demand and the price.

Anticipating a similar increase in the price, most of the farmers in Malnad region had stocked the produce of 2015-16.

No government intervention

According to sources, the farmers and traders in Shivamogga district have stocked more than 200 tonnes of arecanut in various warehouses.

Ramesh Hegde, president, Shivamogga Zilla Adike Belegarara Sangha, an organisation of arecanut growers, said that earlier, whenever there was decline in the price of arecanut, the Union government used to step-in by raising the base import price resulting in recovery in the price of locally cultivated arecanut.

However, there is no such positive intervention from the government in recent times, he said.

Call for ban on imports

Mr. Hegde said that low import duty is being charged as per trade agreements related to South Asia Free Trade Area (SAFTA), and imports from the South Asian Association for Regional Cooperation (SAARC) countries enjoy total exemption from duty.

The arecanut is being imported in large quantities under these trade agreements owing to which the demand for locally cultivated produce has come down. It is necessary to impose a total ban on the import of arecanut to protect the interests of local farmers, he said.

Jambul growers reaping a bounty

Farmers are registering a yield of at least 100 kg to 200 kg of the fruit

At the time when farmers are losing their crops and lives owing to agrarian crisis, jambul (jamun fruit) growers in the State are reaping good dividends as trees are giving bumper yields this season.

The black-plum summer-friendly fruit, commonly known as *Nerale Hannu* (botanical name: *Syzygium cumini*) has arrived in large quantities across the State. The growers are registering a yield of at least 100 kg to 200 kg of fruits from a scientifically pruned/grown tree.

The fruit is known for its nutritional content and medicinal values — as it comprises phosphorus, sodium, magnesium and other minerals — and this has increased the price and demand for jambul.

The fruit purifies blood, brings down blood sugar levels and improves the digestive system, Shalmala, a paediatrician said.

While fruit sellers in Mandya and Mysuru were selling them at Rs. 180 to Rs. 200 for a kg on Sunday, the price was Rs. 250 to Rs. 280 at supermarkets in Bengaluru.



Summer-friendly: Jambul is known for its nutritional and medicinal values and this has increased the price and demand.

According to Dharma, a wholesale jambul buyer at Yaraganahalli in Mysuru, some merchants are exporting the superfine quality fruits to various States and countries from Karnataka.



Mr. Dharma and some of his friends have hired many jambul trees in the vicinity of Hancya and Rammanahalli in Mysuru and are selling fruits to vendors in Mandya and Mysuru.

While growers get around Rs. 70 to Rs. 80 for a kg, wholesale buyers keep a profit of Rs. 20 a kg and sell them to local vendors, who sell them at Rs. 180 Rs. 200 a kg in streets.

“In the past fortnight, I have sold around 825 kg of fruits near MIMS (Mandya Institute of Medical Sciences) and railway station here and earned a profit of at least Rs. 20,000,” Murthy, a fruit seller from Guthalu, said.

The fruit has arrived in good numbers across the State, K. Rudresh, Deputy Director, Department of Horticulture, told *The Hindu* .

Delayed monsoon spells trouble for potato growers in Hassan



Tough luck: Farmers, who started sowing operations by May-end, had to wait until the end of June first week to begin cultivation.— Photo: Prakash Hassan

The delay in monsoon has left potato growers of Hassan in distress. Farmers, who started sowing operations by the end of May, had to wait until the end of June first week to begin cultivation. They waited for weeks keeping the land prepared.

Around 80,000 quintals of non-certified seeds, supplied by merchants in Punjab, and 2,065 tonnes of certified seeds provided by the National Seed Corporation have been purchased by farmers in the district. While the certified potato seeds were priced at Rs. 27 a kg, the non-certified seeds were sold at up to Rs. 17 a kg. The State government gave Rs. 10 subsidy per kg of certified seeds.

“Normally, we keep the seeds procured in open air for 15 days before sowing. This time, we waited long because of delayed monsoon. We sowed the seeds soon after the first monsoon showers last week. From then on, there have been no rains. If it does not rain for a few more days, our seeds will start decaying, causing huge loss,” said Ninge Gowda, a potato grower of Belavadi in Arkalgud taluk. Hassan district received an average rainfall of 45.36 mm since June 1. In the first week of this month, up to June 7, the district received an average of 25 mm rainfall, which is 6 per cent less than the normal expected for the duration.

B. Suma, Deputy Director of Horticulture Department, on Wednesday, “Seed potatoes are sown between May 15 and June 15, depending on rainfall. Farmers keep the land ready and start cultivation soon after the rains. As there were no pre-monsoon rains this year, farmers had to wait,” she said.

The officer said that late sowing might end up the crop attracting late blight disease. “If it rains heavily in July, plants become vulnerable to late blight,” she added. Potato is one among the cash crops cultivated by many farmers in Hassan. In the last five to six years, the yield in potato fields has come down drastically due to late blight, a fungal infection.



Marathwada dams to be interlinked: Water grid proposed for effective management

The concept of water management had never been taken into account in the last six decades.



A man drinks water on the dry bed of Manjara Dam, in Marathwada region (File/AP Photo)

The state government has decided to interlink all major dams in Marathwada for effective use of water in drought-hit regions of Maharashtra. The dams, which would be interlinked, are Jayakwadi, Ujjani, Terna, Vishnupuri, Manjara, Yellara and Siddheshwari. The government also proposes to constitute a central water grid to manage the water. The budget proposed for the project is Rs 2,500 crore.

Highly placed sources in the Ministry of Water Resources told [The Indian Express](#) that the concept of water management had never been taken into account in the last six decades. “The decision to release water from one dam to another for drinking water, irrigation or agriculture purposes was on adhoc basis. As a result, disputes often sparked between districts. It also raised doubts on efficient use of available dam water,” said a source.

Chief Minister Devendra Fadnavis, at a departmental review meeting, directed officials to evolve a separate water grid for Marathwada. Fadnavis expressed serious concern over massive loss of water due to evaporation and instructed water management experts and officials to evolve a mechanism to plug these losses which account for almost 25 to 30 per cent. A single water grid, to work as a command to determine water distribution across eight drought hit districts through scientific management and robust logistics, has been recommended by the chief minister.

Fadnavis said, “At the outset, the problem is not about policies and planning. What needs to be addressed is effective delivery to end users. The water grid for Marathwada would help in effective channelising of available dam water. In absence of concrete road map, disputes often arise.” He added, “When water is carried through open canals, there is a massive loss due to evaporation.” The focus is on laying pipelines for water, expected to bring down water loss from 25-30 per cent to 0-5 per cent.”

A senior officer in the water resources ministry said, “Till now, our open canals would be primary water carrying medium. However, once structures were in place, little attention was paid for repairs and maintenance. Over the years, these open canals developed cracks leading to seepages....” The average water level across dams in Marathwada in peak summer had come down to three

percent. The entire region comprising eight districts Latur, Beed, Osmanabad, Parbhani, Jalna, Nanded, Aurangabad and Hingoli were hit by water crisis. The worst drought was felt in Latur, Osmanabad and Beed.

GR coming in a few days to delist fruits, veggies from APMCs, says minister

Commission agents and traders threaten an indefinite strike



Maharashtra's Minister for Cooperation Chandrakant Patil said in order to help farmers realise better prices for their produce, the state government would set up a chain of cold storages and godowns.

Maharashtra's Minister for Cooperation Chandrakant Patil on Wednesday announced that the official government notification (GR) to delist fruits and vegetables from the purview of the Agricultural Produce Market Committee (APMC) will be issued within the next few days.

While the minister expressed confidence that the state government would be able to make the transition smoothly, commission agents and traders said they would go on an indefinite strike if the state government went ahead with the move.

Delisting of fruits and vegetables from the APMC would mean open access for farmers to sell their produce anywhere in the state.

In the pipeline for the last many years, the move is aimed at removing the monopoly of the traders and commission agents in the trade of fruits and vegetables.

While the previous Congress-NCP government had tried to go for delisting, they were not able to do so due to the strong opposition from the commission agents and traders alike.

“I feel the previous government had failed to explain the situation properly to the commission agents and traders. For the last two years, we have had several rounds of talks with them. We are confident they have realised the rationale behind this move,” Patil said.

He said the total turnover of the over 300 APMCs in the state was around Rs 50,000 crore, of which fruits and vegetables contributed around Rs 10,000 crore. Delisting this, he said, would not result in much financial loss to the commission agents and the traders but would mean great financial gains for the farmers.

Other than delisting of fruits and vegetables, the government will also reduce the area of the APMCs within the four walls of the marketyard. At present, the APMCs have jurisdiction over trade in agriculture commodities that happen anywhere in the districts of their influence.

For long, farmers have complained about the arbitrary cuts on their final prices in the APMCs which significantly hit their earnings.

Delisting, they pointed out, would help in better price realisation as the monopoly of the APMCs would end.

In case of fruits and vegetables, around 75 per cent of the total production in the state is sold through the APMCs. Commission in case of fruits and vegetables is significantly higher than other commodities, given the perishable nature of the commodity.

Earlier, efforts to streamline the commission rates had failed due to opposition to the move by the traders and commission agents.

Patil also announced that henceforth, the market cess which till now was deducted from the farmer's bill, would be levied on the trader's bills.

In order to help farmers realise better prices for their produce, Patil said the state government would set up a chain of cold storages and godowns. "Such infrastructure will help farmers to hold on to their produce in case of a price slump. A scheme is being worked out which will allow farmers to construct cold storages on their land with government finance," he said.

The state government, Patil said, was ready to handle any law and order issue arising from the protests of commission agents and traders in a peaceful but firm manner.

However, traders and commission agents seemed firm on the strike if the government goes ahead with the delisting. Sanjay Pansare, president of the union of commission agents and traders of fruits market in Vashi, said they would go on indefinite strike once the government went ahead with its decision. "We have been in touch with commission agents and traders across the state and we will oppose this move," he said.

Agriculture Reform: Breaking the trader cartel

After Delhi, it is Maharashtra's turn to attempt liberating fruits & vegetables from APMC shackles.

The Vashi mandi, situated 35 km from the Mumbai main city. (Express Photo: Narendra Vaskar)

Spread over 70 hectares land off the Old Mumbai-Pune highway, it's a place where more than Rs 10,000 crore worth of fruits, vegetables and other farm produce gets traded annually. But right now, it's also the scene of a prabodhan, a mass awakening campaign by traders and commission agents that could gather pace in the days ahead.

The Agriculture Produce Market Committee (APMC) at Vashi, barely 35 km from the main Mumbai city, is one of Maharashtra's 305 regulated mandis where produce is first traded before being taken for consumption elsewhere. While the smallest of these may have a yearly turnover of below Rs 25 lakh, the Vashi APMC is the largest and also a terminal market receiving daily over 2,000 trucks that ferry produce from both within and outside Maharashtra. Last year alone, this mandi saw arrivals of 8,93,444 tonnes of onions and potatoes, 5,64,056 tonnes of other vegetables and 6,63,831 tonnes of fruits.



Currently, though, a single factor is uniting the market players operating in regulated mandis across Maharashtra irrespective of size: The state government's move to "delist" fruits and vegetables (F&V) from the purview of the APMC Act. This, if it happens as was done by the Delhi government in September 2014, would dispense with the requirement for all F&V to be brought to mandis and sold through licensed market agents charging commission fees. Such fees in the Vashi APMC amount to 6.5 per cent of the purchase price of onions and potatoes, 8 per cent for other vegetables and 10 per cent for fruits.

Horticultural marketing-Plugging the wastage: Agro-processing units and their limitations

There is a larger market in India for fruits & vegetables in fresh, rather than processed, form.



If F&V were to enter the cold chain at the farmgate, the controlled temperature conditions would have to be maintained right till the retail sale point, as in the case of milk.

In a recent media interaction, Union food processing minister Harsimrat Kaur Badal announced the government's intent to set up 25 small agro-processing clusters at an estimated cost of Rs 5,000 crores. "With this," she said, "India has started moving towards zero tolerance of food wastages."

The minister's sentiment should be applauded and one hopes the proposed clusters do materialise soon. Moreover, since she specifically mentioned fruits and vegetables (F&V), we can presume that the clusters seek to particularly address the inefficient supply chain and large wastages in this segment. That, again, is to be welcomed.

But it needs to still be asked: Does the solution to the inefficient supply chain and wastages in the F&V sector lie in further subsidy outlays for establishing

farmgate level agro-processing units and cold chain networks? The answer is no, for which I can offer at least three reasons.

Firstly, if F&V were to enter the cold chain at the farmgate, the controlled temperature conditions would have to be maintained right till the retail sale point, as in the case of milk. This aspect is often missed even in the most well-meaning policy prescriptions. One must, in fact, question the very need for incurring the huge capital and recurring costs towards creation of cold chain infrastructure. This is even more so, when nature actually allows us to market F&V in ambient conditions round the year.

Should millions of cool F&V vending carts be unleashed in our cities — like the ones selling ice cream — whose added costs will eventually be borne by the consumer? A cold chain may be vital for the marketing of milk or vaccines, but certainly not F&V. Potatoes may be an exception, but there is no dearth of already built cold storage capacity in this case.

Secondly, the sheer diversity of India's agro-climatic conditions makes it possible to cultivate fresh produce in some region or the other throughout the year. Consumers in Delhi, for instance, enjoy fresh greens arriving from the hill states of Himachal Pradesh and Uttarakhand even in the middle of the harsh north Indian summer. In six to eight weeks following the peak heat season, the sourcing of produce shifts southwards to the Deccan Plateau and then back to the northern plains during the winter.

All this has been further enabled by rising incomes, which has also led to growth in demand for F&V. That, in turn, has boosted both acreages as well as production of horticultural crops. In tonnage terms, India's horticultural output is today higher than production of foodgrains (i.e. cereals and pulses), while growing at a much faster rate than the latter. To put it simply: When supply of fresh produce is always available and for which there is ready demand, is it worth going in for processing and storage of F&V at high cost?

Thirdly, Indians are conditioned to process fresh produce in their own unique ways at home on a daily basis. Cultural and culinary diversity also means every region has its elaborate norms for storing, cutting, dressing, cooking and preservation of F&V. No wonder that the reactions of foreign visitors to our

obsession with food range from curiosity and amusement to exasperation. In a country where over two-thirds of households report themselves as vegetarian — this includes ‘lacto-vegetarians’ or those who aren’t meat-eaters but consume milk products — demand for raw unprocessed F&V at the household level is unlikely to diminish for the next thirty years at least (we cannot predict the next generation’s culinary preferences).

It is important to point out here that nowhere in the world is such huge quantity of fresh produce moved daily across vast distances to reach so large numbers of consumers. Also, our F&V supply chains are fragmented. There are too many intermediaries, with poor facilities for marketing of produce at APMC mandis. All these contribute to higher costs, wastages and loss of value.

However, one could suggest alternate policy interventions for meeting the laudable goal of ‘zero wastage’ in F&V, as envisaged by the food processing minister.

F&V production is now dominated by small and marginal farmers, having little bargaining power in the market. Aggregation of these farmers into clusters, producer companies and other collectives can go a long way in helping them realise better prices as well as lowering wastages and improving quality of produce.

Such collectives need to be encouraged, more so in the vicinity of urban centres, so that fresh produce can travel the minimum possible distance from the farm to the consumer. Regional supply chains, too, could be incentivised by reforming APMC regulations that will allow direct sourcing from farmer producer organisations for supplying to retail outlets in urban areas.

At the front end, policy should recognise the role of the ubiquitous urban street vendor in providing the last-mile solution for F&V marketing. This unsung hero uses muscle power for supplying fresh produce to millions of homes on a daily basis. And he does this even while managing a hostile business environment of pavement mafias and rent-seeking public servants.

Given exorbitant real estate costs in cities, it is unlikely that India will see food supermarket chains coming up in a big way in urban centres. Nor is e-commerce

going to be a dominant player in F&V; it has not been so anywhere in the world. In such a scenario, ensuring ease-of-doing-business for the street vendor could play a significant part in reducing wastages and smoothening prices of F&V.

Agro-processing clusters or promoting foreign direct investment in food retail are, no doubt, welcome ideas. But let's not ignore the potential of the 'smaller' idea of strengthening home-grown supply chains, which offer both inclusiveness and cost efficiency when it comes to F&V marketing.

hindustantimes

Rise in food prices cause for concern



A vegetable vendor in Indore. Vegetable prices, which held steady till recently, are climbing again. (Hindustan Times)

The increase in retail prices, particularly those of food, in May has taken place just when the government hiked by a hefty amount the minimum support prices (MSPs) of kharif pulses and oilseeds.

The retail food inflation rate has been 7.55% in May, as against 6.40% in April but 4.80% in May last year. And since experience has shown that an increase in

MSPs does not necessarily translate into an expansion in acreage, inflationary tendencies in the farm sector are bound to get a boost by the hike.

Pulses prices were controlled last year after arhar or tur dal's retail rates went at more than 200 a kg in some regions, while the countrywide average price of lentil was around 160 a kg, more than double of the 75 a kg in 2014. Prices of tomatoes and onion, after having stabilised, are soaring again.

That farm growth in 2015-16 is expected to be just 1.1% makes the food story all the more depressing but not surprising because 2015 was a year of bad rains. And it is no coincidence that the whole price index also increased 0.79% in May, after having risen 0.34% in April, following 17 months of contraction.

Price rise in the farm sector is a function of either weak supply or high demand. In India, it is predominantly the former.

The agriculture ministry had estimated wheat production in the country at more than 94 million tonnes in 2015-16. However, procurement has been just about 23 million tonnes and is likely to fall short by 5 million tonnes.

The highest shortfalls in procurement have been observed in Uttar Pradesh and Madhya Pradesh. The ministry, in one of its advance estimates, has calculated that pulses production would be 17.06 million tonnes, the lowest in about five years.

The Indian Sugar Mills Association has put sugar output at 25 million tones, a substantial drop over the previous year (the sugar year is October-September). It has also been observed that news of such shortfalls causes an anticipatory rise in prices, as has been happening now.

And though this year is expected to have good rain, the summer arrivals will not take place before August-September. Much hope rests on the government's projection that agricultural output in 2016-17 will be 270 million tonnes, as against 253 million tonnes last year.

It needs no stressing food inflation is the most emotive of all kinds of inflation. And that is why the RBI has not been able to cut lending rates as much as India Inc might have wished it to.

In fact RBI governor Raghuram Rajan has given enough hint that he has restricted manoeuvrability in this matter because any cut in rates would infuse more money into the economy, pushing the inflation rate up.

So the ball is now squarely in the court of the government, which has to have all contingency measures ready in case the monsoon does not prove to be as bountiful as it is expected to be.

THE HINDU **BusinessLine**

India-EU joint project for treating waste water increases crop yield

Crops such as okra, brinjal and chilly plants irrigated with reused treated waste water under a jointly funded India-EU project have shown increased yields of up to 40 per cent compared to those irrigated by fresh water, according to a review.

The technology for integrated bio-treated wastewater reuse, developed under the joint project Water4Crops launched in 2012, was put to use on a pilot basis in five states — Karnataka, Andhra Pradesh, Telangana, Maharashtra and Uttar Pradesh.

“This technology of treated domestic wastewater is finding acceptance among the rural people and has good potential to scale up in the country to address the issues of health and sanitation in rural areas as well as meeting the water demand for agriculture,” said Suhas P Wani, project leader and director, Asia region, Icrisat.

The project also proved that the construction of wetlands reduces the amount of pollutants in wastewater by 30-92 per cent, Wani added.

The EU consortium includes 21 partners from eight countries and an Indian consortium of 11 research and development partners led by the International Crops Research Institute for the Semi-Arid Tropics (Icrisat).

Based on the pilot sites at the Icrisat headquarters in Hyderabad and other locations, about 28 watershed sites are now supported by various corporates under corporate social responsibility projects as well as Karnataka's Bhoo Samrudhi programme and Andhra Pradesh Primary Sector Mission Rythu Kosam, where a decentralised wastewater treatment approach is being implemented.

“Now the challenge is to scale up the programme and spread it in all parts of the country. We are in talks with states, Indian industry and the international industry to help in the scaling up,” said Y S Chowdary, Minister of State, Ministry of Science and Technology and Earth Sciences, addressing the media at the projects' three-day review and planning meeting on Wednesday.

The approximate cost for developing a wetland project is between Rs. 3 lakh and Rs. 5 lakh, depending on the size.

NCDEX links 8,000 farmers on its platform

NCDEX, an agriculture-focused commodity futures exchange, has got 8,000 farmers to trade on the platform through four farmer producer companies (FPC) in last one year.

The FPCs from Rajasthan, Madhya Pradesh and Bihar act as aggregators of farmers produce and take sell position on the exchange platform. Later, as the month-on-month spread gets lucrative, they roll over their positions to next month.

This has ensured that farmers have received almost 15-20 per cent higher returns over last year, said the exchange in a statement on Wednesday. Additionally, timely settlement and payments have helped build liquidity for farmers, it added.

NCDEX has conducted over 135 programmes in association with National Skills Foundation of India across Rajasthan and Madhya Pradesh educating over 4,000 farmers. Educational modules were produced by the exchange to educate farmers on post-harvest management and marketing of their produce, said the exchange.

Samir Shah, Managing Director, NCDEX, said the exchange believes the only way to increase incomes for 560 million farmers is by connecting them to modern, transparent, liquid primary and secondary markets.

By collaborating with partners to enable smallholders to market their crops on the futures platform, NCDEX provided the much-needed incentive for investing in production, he added.

Farmers are unwilling to take risk and increase production because they are not able to compete in formal market structure and there is no assurance that all their efforts put in would lead to better price and subsequently good profit, said the exchange.

Nilgiris tea output down 55% in May

Prolonged dry weather has taken a heavy toll on the Nilgiris tea production so far this calendar.

May was another dry month with the rainfall being less in all the agro-climatic zones compared to May 2015 and the decennial (10-year) average for the month.

The cumulative rainfall in the five months was far lower than 2015 and decennial average.

Temperature was higher than last year with meteorological centre at Palaniappa Estate recording the highest temperature of 34.5 degrees Celsius.

Humidity, wind speed, evaporation and soil moisture recorded at various centres showed an adverse ambience for tea cropping.

Consequently, tea companies have reported to Tea Board that their production in May was as much as 55 per cent less than in May 2015.

They have reported that their output in May dropped to 0.68 million kg (mkg) from 1.51 mkg in May 2015 and the five year mean of 1.41 mkg for the month.

This pulled down the cumulative output in the five months by as much as 32.60 per cent over last year.

The production till May dropped to 4.28 mkg from 6.35 mkg in January-May 2015 and the five-year mean of 5.90 mkg for the period.

Usually, May is the rush cropping month but this year it did not happen. Tea producers expect a better crop in July after applying manure in June-July and with some areas receiving rainfall this month. Nevertheless, the overall production is unlikely to be higher than last year.

Producers have informed Tea Board that they anticipate the production to be around 3.50 mkg in the next quarter (July-September) against 3.97 mkg in July-September 2015.

Business Standard

India's GDP growth to cross 8% this financial year: Arvind Panagariya

He was of the view that economy will grow at a higher rate as revenues are increasing and inflation has entered the positive zone

India's economic growth will cross the 8% mark this financial year on the back of good monsoon and pick up in manufacturing, NITI Aayog Vice-Chairman Arvind Panagariya has said.

"India will cross 8% economic growth during the current financial year. Good Monsoon will push farm sector growth to 4-5% this year," Panagariya said.

He said the growth in the last quarter of the previous financial year touched 7.9% because of uptick in manufacturing activity and improved performance of agriculture sector.

According to the data released by the Central Statistics Office (CSO), manufacturing sector during the fourth quarter recorded a growth rate of 9.3% while farm sector grew at 2.3%.

India economy clocked a five-year high growth rate of 7.6% in 2015-16, mainly on account of good performance of manufacturing and improvement in farm sectors.

Panagariya was of the view that economy will grow at a higher rate as revenues are increasing and inflation has entered the positive zone.

Higher wholesale inflation rate indicates the rise in margins for the industry. Rising for a second straight month, wholesale price-based inflation jumped to 0.79% in May with vegetable prices witnessing a double-digit growth.

The April WPI-based inflation was at 0.34% and in March it was (-)0.45% while it stood at (-)2.20% in May last year.

After remaining in negative zone for 17 months, the WPI inflation turned positive in April this year.

Retail inflation too touched a 21-month high of 5.76% in May mainly on rising prices of food items.

Reserve Bank has pegged growth at 7.6% for the current financial year, while the Economic Survey has projected the economic growth at 7-7.75% for this financial year.

Maharashtra CM advises farmers to refrain from sowing for few days

He said that due to the hot weather, the seeds may get destroyed and farmers may have to resow seeds

In the backdrop of drought in the last three years and lack of adequate rains resulting in insufficient soil moisture, Maharashtra Chief Minister Devendra Fadnavis on Wednesday asked farmers to refrain from sowing Kharif crops for the next few days.

"Though many parts of the state have received rainfall, monsoon has not arrived as yet. The meteorological department has said that rainy season will start soon. But after the initial rains, farmers have got ready with their Kharif sowing expecting continuous good rains," Fadnavis said.

"I urge farmers to not sow Kharif crops till it rains sufficiently and continuously for at least two days so that the soil develops the moisture required for crops," he said in a release here.

He said that due to the hot weather, the seeds may get destroyed and farmers may have to resow seeds, which may result in financial losses for them, like it did last year.

Fadnavis said the government has made sufficient fertilisers and seeds available for the Kharif season and has also stayed the decision regarding seed price hike by Mahabeej to provide relief to lakhs of farmers.

"Out of 43.75 tonnes of demand for fertilisers, the government has till now made available 40.25 lakh tonnes. Apart from this, the Centre has reserved 0.50 lakh tonnes of Urea fertiliser for Maharashtra," he said, adding that as compared to 2015, the demand for fertilisers has shot up by 26%.

Fadnavis said that for the current Kharif season, the demand for seeds is 14.99 lakh quintal, while the government has made available seeds totalling 17.90 lakh quintal.

New technology for treating sewage water for crops

Under the project, many wetland plant species have been identified for purifying the wastewater



India and the European Union (EU) have developed a cost-effective technology for irrigation of crops with sewage water, especially in rural areas, using natural filters like sand and plants.

The project involves collecting the sewage waste before it reaches the water bodies and then treat it using natural filters like sand, gravel, pebbles and plants to remove the impurities.

Under the project, many wetland plant species, such as *Canna indica*, lemon grass, napier, para grass, typha, water hyacinth, water lettuce and a weed species *Agaratum conyzoides*, have been identified for purifying the wastewater.

These are helpful in reducing the nutrient load in the free water surface and sub-surface constructed wetlands.

The project has been undertaken in Karnataka, Maharashtra, Telangana, Uttar Pradesh and Madhya Pradesh.

"This is a cost-effective method to not only use the sewage, but also effectively use the water in rural areas," said Suhas Wani, Project Leader and Director, Asia Region, International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) — one of the partnering institute in the project from India.

It would cost anywhere between Rs 3-5 lakh to build a facility like this in an area housing 2000 people, Wani said.

"We have also written to the PMO (Prime Minister Office) if we could integrate this with the Swachh Bharat Mission as it also involves treating of waste water," she added.

The reuse of treated wastewater to irrigate fields has shown increased yields of up to 40% in crops such as okra, brinjal and chilli plant as compared to those irrigated by fresh water.

The 'Water4crops' is one of the largest technology initiatives between India-EU. India has contributed 3 million euros to the project and the EU 9 million euros.

The EU consortium includes 21 partners from 8 countries while the Indian consortium has 11 research and development partners led by the ICRISAT.



THE TIMES OF INDIA

Cotton prices up after farmers exhaust stocks

A majority of farmers may have only fetched slightly more than the minimum support price of Rs4,000 for the cotton they grew. Months after the harvest, the traders are now reaping gold. Within a month, price of lint (processed cotton) has touched Rs42,000 per khandi (350 kgs) as against Rs33,000. Raw cotton is Rs6,500 a quintal, a rate which was seen 6-7 years ago and after that there was only a slump.

A section of traders had anticipated trends in cotton prices. Since beginning of the year there was a steady increase in price of cattle fodder made of cotton seeds. Fodder demand slowly increased the rates of raw cotton. Low output as compared to the previous year further pushed this trend, said sources. Based on these factors those who had the funds cornered raw cotton from the markets and sat on the processed lint waiting for price to rise.

Finally, as a shortage was created, the rates began increasing to Rs41,000 to Rs 42,000 a khandi of lint. This made raw cotton dearer too but it won't benefit the farmers as most of them have sold their stocks long ago. It also left the spinning mills crying foul as the rates of yarn have not gone up proportionately.

Many traders purchased cotton at slightly higher rates even if it was not viable given the price of lint at that time. However, it was a strategy as they were anticipating that the lint rates will increase in coming days. It was a gamble that paid off, added a trader in Amravati.

N P Hirani, chairman of Maharashtra Cooperative Cotton Growers Federation, said it is time the state government intervened. "If the state can check the rates of other commodities like tur dal, there should be action against hoarding in cotton also. Spinning industry is a major employer. At the current rates of lint, a spinning unit has to take a hit of Rs15-30 a kg," said Hirani. The cotton

production was down by 78 lakh quintals in 2015 compared to the year before that led to a major shortage of commodity.

A source in Wani, a cotton trading centre, said rates of raw cotton had recently touched Rs6,500 a quintal. By this time there is negligible stock left with the farmers. Even traders may be having only around 15% to 20% of the total produce with them. However, this is enough to capitalize on the situation. In last June, lint was selling at Rs34,000 a khandi and raw cotton rates were around Rs5,000 a quintal. It was marginally higher than the market rates during peak harvest season. This year even as farmers sold at close to the support price, the rates jumped 44% later, said a trader on condition of anonymity.

The rates have gone up within a month. Apart from the traders, stock was now only left with big farmers who had holding capacity, said Ravi Agrawal, a cotton trader at Paratwada.

India-EU technology helping use waste water to boost crop productivity

'Water4Crops' -- a joint project undertaken by the European Union (EU) and India -- offers 'Constructed Wetland', a technology to reuse the wastewater in rural areas for irrigation which would also increase the productivity and quality of crops as compared to freshwater.

On Wednesday, EU Ambassador Tomasz Kozlowski, Minister of State for Science and Technology Y.S. Chowdary and other experts held a review meeting on completion of four years of the Indo-EU funded project worth Euro 9 million.

"We are worried about chemicals in our noodles and bread but not about the microbial contamination in the vegetables. This technology reduce pollutants in wastewater, makes it fit for irrigation and results shown increase in yield of up to 40 percent," Aviraj Dutta, a scientist with the International Crop Research Institute for the Semi-Arid Tropics (ICRISAT) - the research organisation granted special status by India, told IANS.

The project integrates bio-treated wastewater reuse to support the GreenEconomy in EU and India.

As per ICRISAT, fields irrigated with wastewater resulted in 40 percent higher yield as compared to those fields irrigated by fresh water. The experiment was performed over chilly plants, eggplant and okra.

The technology is however not new. It became a popular way to treat wastewater for irrigation in North America back in 1980. The technology offered in India is a little updated version that had been experimented in some seven states across India, including eight districts in Karnataka.

"It would also require to raise basic infrastructure such as drainage system in the rural areas, which is widely for now absent," an expert said.

Instead of using chemicals, Constructed Wetland uses layers of gravel, sand and local wetland vegetation like canna, cattail and water lettuce to treat the water. All these ingredients are placed in a pit of typical 300-400 sq meters of area, from which the polluted water flows from one end and treated water flows from the other end and gathers in a small pond like structure.

From a distance it looks like a small nursery of wetland plants.

"It costs about Rs.4- 6 lakh to setup one small plant for constructed wetland in one village," Regional Director ICRISAT Suhas P. Wani told IANS.

Citing examples of Kolkata where fishes are raised in polluted water, Wani said that the treated water could also be used for fishery.

It could utilize low-quality industrial, domestic and municipal wastewater by reducing pollutants like sulphate, phosphate, nitrogen load, pathogen by up to 92 percent.

"The technology resolves three key issues of providing better water for irrigation, creates a sense of security from drought and water scarcity. It also aids health and sanitation," Wani said.

The government now has a major role to play when it comes to apply this technology.

"This initiative is the need of the hour. There is no solution but to save as much water as we could," Minister Chowdary said while quoting the drought situation in Maharashtra and other parts of the country.

THE ECONOMIC TIMES

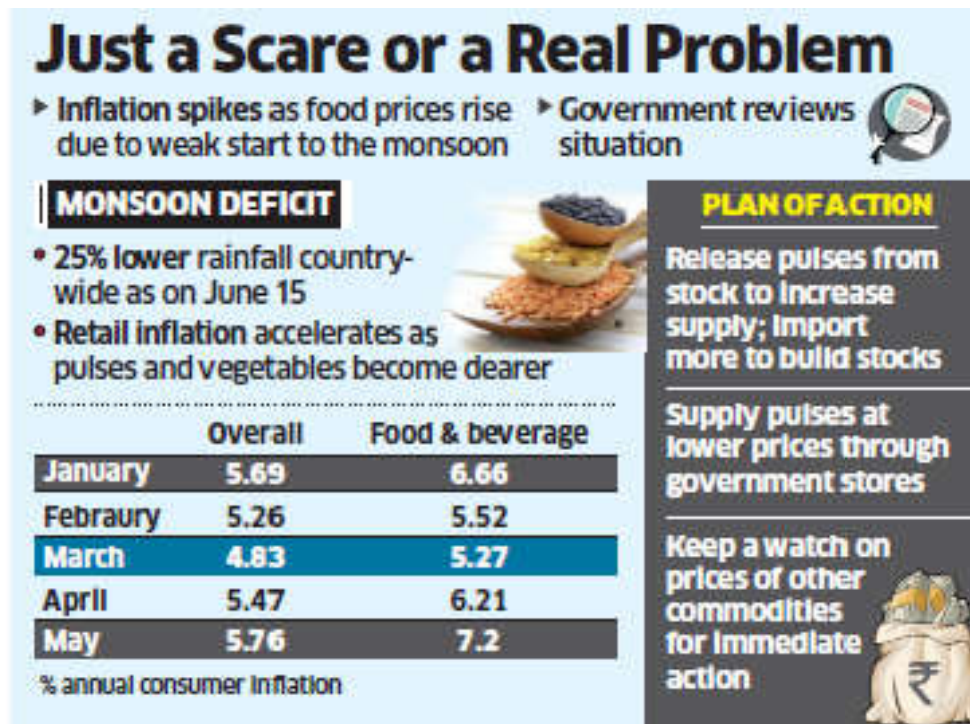
Government increases size of pulses buffer stock to 8 lakh tonnes



The buffer stock is being created by procuring pulses directly from farmers at market prices using the Price Stabilisation Fund. The stock is being released to states for retail distribution at highly subsidised rate of Rs 120 per kg.

NEW DELHI: The government has decided to import more pulses to contain soaring prices while it took note of rising prices of vegetables that have together caused a sharp spike in retail inflation in the last couple of months. Government will import pulses from Myanmar and Africa to beef up stock as prices rose to over Rs 170 a kg following a weak start to the monsoon.

Finance minister Arun Jaitley discussed price situation at a high-level meeting attended by agriculture minister Radha Mohan Singh, food minister Ram Vilas Paswan, transport minister Nitin Gadkari, commerce minister Nirmala Sitharaman and urban development minister M Venkaiah Naidu. Officials from the prime minister's office also attended the meeting.



"In the meeting, the pulses issue was discussed in detail. Our department was told to procure more pulses for buffer stock," Paswan said after the meeting. A team of officials will go to pulses-growing nations like Myanmar and Africa immediately to explore government-to-government imports, he added. Simultaneously, it will use its buffer stock to boost market supply.

As much as 10,000 tonnes of pulses have already been released from buffer stock to contain the price rise. Consumer inflation rose to a near two-year high of 5.76% in May while wholesale inflation stood at 0.79%, driven by higher prices of meat, fish, eggs, fruits, sugar, and vegetables. Retail price of tomatoes has spiked to around Rs 100 a kg in some markets.

Food ministry is keeping a tab on prices of sugar, wheat, tomato and other essential food items. Wednesday's meeting also discussed reasons for rise in prices and also possible remedies. The monsoon has started on a weak note with

25% deficit so far even as the government and private forecasters have stuck with estimates of an above normal monsoon.

Retail annual inflation in food and beverages was 7.2% in May while inflation in pulses and products was as high as 31.6%. The government has so far managed to procure 1.15 lakh tonne of pulses to create a buffer against a target of 1.5 lakh tonnes, Paswan said. Rabi procurement is still on. "The finance minister also said that imports via public and private agencies should be strengthened to meet the deficit," Paswan said.

Kendriya Bhandar, Safal and other government agencies are selling tur and urad dal at Rs 120 per kg from their outlets. Paswan told the meeting that the price rise in tomato was a "seasonal" factor as it cannot be stored for long. India imported 5.5 million tonnes of pulses last year to boost domestic supply and build a buffer stock after prices spiked. India's pulses production is about 6 million tonnes less than demand, leading to frequent spike in prices.

Government nod to pact with Taiwan for cooperation in agriculture sector



The Memorandum of Understanding (MoU) provides for cooperation in the fields of agriculture, horticulture, animal husbandry, fisheries, aquaculture and food processing.

NEW DELHI: Government today approved pact with Taiwan for cooperation in the field of agriculture and allied sectors.

The Memorandum of Understanding (MoU) provides for cooperation in the fields of agriculture, horticulture, animal husbandry, fisheries, aquaculture and food processing, genetic resources as well as environmental sustainability, according to an official statement.

"The Union Cabinet has given its ex-post facto approval to MoU between Taipei Economic and Cultural Centre in India and India Taipei Association in Taipei, Taiwan for cooperation in the field of agriculture and allied sectors," it added.

The cooperation between the two sides involves exchange of visits, information, technology and training and also expansion of agricultural trade while reducing trade barriers, it said adding that both sides will also encourage the private sector in both countries to enter into cooperation.

Under the MoU, a Joint Working Committee will be constituted to identify priority areas of mutual interest and follow up on the progress of implementation of the activities identified by both sides.

The pact will be initially signed for a period of five years and shall be automatically renewed for a subsequent periods of five years unless either party expresses its desire/intention to terminate it, the statement said.

Helped over 8,000 farmers hedge commodity price risk: NCDEX

Over 8,000 farmers across the country participate on NCDEX platform to hedge their commodity price risk, it said in a statement

MUMBAI: National Commodity and Derivatives Exchange (NCDEX) today said it has helped over 8,000 farmers across the country hedge their commodity price risk on its platform.

Over 8,000 farmers across the country participate on NCDEX platform to hedge their commodity price risk, it said in a statement here.



Spread across Rajasthan, Madhya Pradesh and Bihar, farmers are using aggregation of produce to gain bargaining power and using the futures platform to smoothly hedge their location and basis risks to protect their income, the statement added.

To double their income by 2022, farmers need to achieve higher crop yields and sell larger surpluses.

Finding it difficult to compete in formal markets and without the assurance that their efforts would pay off, farmers remained unwilling to take risks in increasing their production.

Using its national online footprint, the exchange has collaborated with Farmer Producer Companies (FPCs) to demonstrate that investments in linking farmers to markets, coupled with supply-side activities such as capacity building and input supply, can have a major positive effect on raising farmer incomes.

"We believe the only way to increase incomes for 560 million Indian farmers is by connecting them to modern, transparent, liquid primary and secondary markets.

"By collaborating with partners to enable small holders to market their crops on the futures platform, NCDEX provided the much-needed incentive for investing in production. More farmer groups are expected to come forward to access the futures platform," NCDEX MD and CEO Samir Shah said.

NCDEX focused its efforts on educating FPCs and building a community of skilled farmers who are trained to become marketers. Over 135 programs were conducted in association with National Skills Foundation of India across Rajasthan and Madhya Pradesh, educating over 4,000 farmers, it said.

Educational modules were also included on 'mandi.com' show aired on DD Kisan, produced by NCDEX for educating farmers on post-harvest management and marketing of their produce.

As a result, four FPCs are now actively hedging on the exchange platform. As soon as they procure goods, they take a sell position on exchange platform. Later, as month on month spreads get lucrative, they begin rolling over their positions to next month.

This has ensured that farmers have received almost 15-20 per cent higher returns over last year. Additionally, timely settlement and payments have helped build liquidity for farmers, NCDEX said.

States too responsible for curbing price rise in pulses: Ram Vilas Paswan

Paswan maintained that it is "wrong to blame" the central government for price rise when states have powers to take effective action against hoarders and blackmarketeers by imposing stock limits on traders.

NEW DELHI: With the central government coming under attack over rising pulse prices, Food Minister Ram Vilas Paswan today sought to shift some blame to the states, saying they are equally responsible for keeping the rates of essential commodities under control.

Despite several measures, pulses are still ruling high at over Rs 170 per kg in most parts of the country due to a widening demand-supply gap following two successive droughts.



Paswan, who launched sale of tur and urad at a subsidised Rs 120 per kg through mobile vans of co-operative NCCF in the national capital today, said: "If prices rise despite this move, the Centre is not responsible. In a federal structure, states have equal responsibility in controlling prices."

Passage of the GST Bill and creation of the national common agriculture market would address the price rise issue to a large extent, he hoped.

The National Cooperative Consumers' Federation of India (NCCF) is the third player after Mother Dairy's Safal and Kendriya Bhandar that will be selling tur and urad at the subsidised rate in the national capital.

Asserting that the Centre is "serious" about the price rise issue, Paswan said, "We have created a buffer stock and have asked states to place their requirement for retail distribution. However, not many states have shown interest."

The Centre is offering to state governments the un-milled tur and urad from the buffer stock at Rs 66 per kg for retail distribution at not more than Rs 120 in order to provide relief to consumers.

So far, Andhra Pradesh, Tamil Nadu, Telangana and Maharashtra have lifted some quantity of pulses from the buffer stock. Rajasthan had placed its demand, but has not yet lifted the commodity.

Paswan maintained that it is "wrong to blame" the central government for price rise when states have powers to take effective action against hoarders and blackmarketeers by imposing stock limits on traders.

"We can only give direction to states to take action against hoarders. We cannot do it ourselves because power rests with the states and they have to do (it)," he said.

He further said that the states have been asked to create their own buffer stock of pulses and even undertake imports if there is such a crisis.

The challenge of demand-supply gap of about 7.6 million tonnes is being addressed via public and private imports and local procurement for buffer stock creation of 1.5 lakh tonnes this year.

Even bilateral talks are going on with Myanmar and other African nations for government-to-government import of pulses to boost domestic supply during the lean June-September, he said.

The minister also said, "The price rise will be there till there is a problem of demand-supply gap. We hope good production this year with a substantial hike in the support price of pulses and forecast of good monsoon."

Pulses production is estimated to be 17.06 million tonnes in 2015-16 crop year (July-June), slightly lower than 17.15 million tonnes in previous year. But the output is lower than the overall demand of 23.5 million tonnes.