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THE HINDU

'Subsidise foodgrains for the drought-hit'

Industry body wants the Centre to also take the load of farm loan repayments

Frontline industry body Associated Chambers of Commerce and Industry of India (Assocham) wants the Central Government to send foodgrains to drought-affected areas at highly subsidised rates as well as “take the load” of farmers’ bank loan repayment upon itself.

Expressing concern over the widespread rural crisis, its president Sunil Kanoria called upon the Government to commit maximum resources to the rural sector. He felt this should not be difficult considering that the Government’s fiscal burden had reduced considerably on the back of low crude oil prices for about 18 months now.

The impact of the drought, in 265 districts of 11 States affecting 33 crore people, on the economy as per the Assocham estimates is Rs.6.50 lakh crore, he said. A release issued by the Assocham said that Mr. Kanoria was in Hyderabad to meet Telangana Governor E.S.L. Narasimhan on Monday on issues concerning microfinance sector.

The industry body, however, is not making a demand for the banks to take the load of (farm) loan waiver or moratorium on agriculture loans since they themselves are going through an “unprecedented challenging times in terms of NPAs.”

“We are not suggesting populist measures like loan waiver as election freebie, but in case of natural distress like the drought, the affected people have to be helped, he said. Helping the poor and feeding them in times of distress should make an excellent economic proposition, he said.

Stating that “if one sector suffers, others must chip in”, Mr. Kanoria also called for long-term solutions and increased spending on rural infrastructure like roads in village and semi-urban areas.

Heavy rain predicted in Mysuru, Kodagu districts

Gramin Krishi Mausam Seva, the weather observatory set up at the Organic Farming Research Station at Nagenahalli near here, has predicted heavy rainfall in Mysuru, Kodagu and surrounding regions for three days from Wednesday.

The observatory, in a press statement, has also forecast a dip in the day temperatures.

While Mysuru district is expected to receive 34 mm of rainfall on Wednesday, Kodagu district has been predicted to receive 54 mm. Rains are expected to continue on Thursday and Friday as well.

The day time temperatures in Mysuru, which ranged between 34 and 35 degrees Celsius on Saturday and Sunday, are likely to dip to 28 to 29 degrees Celsius over the next three days. Similarly, the day time temperatures in Kodagu are expected to be 24 and 25 degrees Celsius.

Narendra Babu, Research Associate at the Gramin Krishi Mausam Seva, which has been established by the University of Agricultural Sciences, Bengaluru, and Indian Meteorological Department, said that the rain is expected in Mysuru and Kodagu region due to “cyclonic depression” off the Tamil Nadu sea coast.

Though rains could have come earlier, the wind speed in the region around the depression is limited. If the wind speed increases, it is bound to rain in this region, he said.

The observatory has also advised farmers to plough the land in the areas where it rains. “It improves infiltration and conservation of water and keeps the land ready for sowing pre-monsoon crop,” the statement added.

Agriculture Dept. begins sanitising Bt cotton fields

In a bid to check the menace of pink bollworm pest, which destroyed over 80 per cent of Bt cotton crop on 2.5 lakh acres in Raichur district, the Agriculture Department has started sanitising cotton fields.

Bt cotton residue is being burnt on the field to ensure that eggs and larvae of the dangerous pest are destroyed before the beginning of the next kharif season.



Infested Bt cotton stalks being set on fire at Nelahal village in Raichur district on Tuesday.— PHOTO: SANTOSH SAGAR

Cotton growers have already destroyed infected cotton stalks on their own, and officials are now visiting villages and encouraging them to burn the residue stalks in their presence. “Destroying cotton stalks and tilling the fields deep to expose the soil to sun are important measures for destroying eggs and larvae of pink bollworm. These precautions will drastically reduce the pest population in the next season,” N. Saraswathi, Joint Director of Agriculture (in-charge) told *The Hindu* at a cotton field outside Nelahal village in Raichur taluk on Tuesday.

“In the first phase, we took up sanitisation of cotton ginning mills. The officials from the Agriculture Department, along with scientists from University of Agricultural Sciences, Raichur, visited cotton ginning mills and ensured that the residues, including cotton seeds, were destroyed,” said R.G. Sandeep, Assistant Director of Agriculture, Raichur.

‘Space veggies’ grow in Dutch greenhouse

Researchers look for ways to help astronauts cultivate their own food



OUT OF THE WORLD: Researcher Wieger Wamelink inspects the plants grown on Mars and moon soil simulant.— Photo: Wageningen University/AFP

Establishing a human colony on the Moon and travelling to Mars has been the stuff of dreams since the dawn of the space age. But these visions face many hurdles. How can humans survive for months or years in the ultra-hostile environment of space?

Agricultural researchers at a Dutch university say they are taking the first steps towards providing an answer.

They are growing vegetables in soils similar to those found on the Moon and Mars, looking for ways of helping space pioneers grow their own crops.

“When people go to the Moon and Mars they also have to eat, and it's easiest for them to grow their own food,” said Wieger Wamelink, surrounded by several dozen plants in a special greenhouse at Wageningen, an agricultural university in central Netherlands.

“We wanted to use real Martian and lunar soil,” to see if plants would actually grow in it, Mr. Wamelink said.

Of course, getting real lunar and Martian potting soil is an impossible ask. But an Internet search revealed an unlikely supplier: NASA.

The U.S. space agency makes ground similar to that on the Moon from sand found in an Arizona desert, while Mars' crimson "soil" is scooped from a volcano in Hawaii, Mr. Wamelink said.

The first experiments started in 2013 after Mr. Wageningen received an order of 100 kg of NASA's imitation "space soil" — at a hefty price of €2,000. Wamelink stuck tomatoes, peas, cress and other plants in pots containing the simulated soil.

Martian and lunar soil, including NASA's own imitation, may contain heavy metals that are harmless to plants but could prove deadly to humans.

Mr. Wamelink has come up with a possible solution. If analyses show that the vegetables contain arsenic, mercury or iron making them unfit for human consumption, the soil can be purified by growing other plant species such as violets which absorb the poisons. — AFP

Experts bat for biological pest control methods

The environment-friendly biological control methods must be put into practice on a large scale, apart from using pesticides to control the pests affecting several crops, Assistant Director General of the National Agriculture Research Institute P.K. Chakravathi said here on Tuesday.

There was also a need to make farmers adopt at the field level the biological control methods that proved to be a successful, Dr. Chakravarthi said while inaugurating a two-day all-India coordinated research project on biological control of crop pests, being organised by the Acharya N.G. Ranga Agriculture University and the National Bureau of Agriculture Insect Resources (Bengaluru).

Director of NBAIR Abraham Varghese said biological control methods have been successfully tested on pests in several crops. Director of Research of ANGRAU N.V. Nayudu said sugarcane growers were supplied with biological control parasites developed at the Regional Agriculture Research Station at Anakapalle.

Biological control methods were very useful in the case of horticulture crops, Vice-Chancellor of ANGRAU B.M.V. Reddy said and wanted more research and extension work done in this area. Director (extension) K. Raja Reddy released pamphlets on biological control methods.

Poultry farmers advised not to lift birds from Bidar

Poultry farmers have been strictly advised against importing poultry birds from Bidar district and also to take all necessary preventive measures against bird flu (avian influenza) in the district.

The directive to the farmers came in the wake of the outbreak of bird flu in one poultry farm in Humnabad taluk of Bidar district recently, following which the prices of poultry birds and eggs had fallen.

The low prices could prompt poultry farmers, hoteliers and meat sellers to lift birds from Bidar district, said Tahsildar Preetam Naslapure, while interacting with poultry farmers at an awareness programme on bird flu organised by the Department of Animal Husbandry and Veterinary Services here on Tuesday.

He said that stringent measures would be taken against farmers bringing poultry birds from Bidar and adjoining districts into Belagavi district. Staff at all check-posts and entry points along the district boundary had been advised to keep strict vigil and prevent transport of poultry birds from other areas into the district.

Though there was no immediate reason to panic due to the outbreak of bird flu in Humnabad and despite the fact that there was no evidence of virus infecting human beings in India so far, preventive measures need to be taken as there was every possibility of the virus spreading on account of fall in temperature during the last few days.

He advised the farmers to ensure cleanliness in their poultry farms and ensure waste disposal as per the norms of the Karnataka State Pollution Control Board, as poultry waste attract flies which would only spread various diseases.

He also advised them to use hand-gloves while handling birds and immediately inform veterinary officials in the event of any unnatural death

of poultry bird in their farm, so that necessary steps against outbreak of bird flu could be taken in time.

Earlier, Deputy Director of Animal Husbandry and Veterinary Services G.H. Nagaraja and other officials of the department advised meat consumers to properly boil both egg and poultry birds before consuming them. Resource person Ajay Kumar Mane spoke on causes of bird flu and preventive measures.

Around 5 crore birds, including broilers, are reared in around 5,000 poultry farms in the State

There are 136.05 lakh broiler birds in 769 poultry farms; 4.50 lakh egg layers in 44 farms in Belagavi district

Vet varsity to tie up with dairy board

The Kerala Veterinary and Animal Sciences University (KVASU) is gearing up to collaborate with the National Dairy Development Board (NDDB).

A team of officials of the NDDB will visit Mannuthy campus of the KVASU on June 6 and 7 to finalise the key areas of collaboration. “The areas identified include training programmes to promote dairy entrepreneurship among farmers and educated rural youth; field testing of innovations in animal husbandry and dairying; and developing parameters and standards for bovine comfort,” T.P. Sethumadhavan, Director of Entrepreneurship, KVASU, said.

It would also include exposure-cum-orientation programme for final year Veterinary and Dairy Science degree students of KVASU in productivity enhancement, which would be coordinated by the NDDB, as part of their internship programme, Dr. Sethumadhavan added.

Moreover the collaboration would contribute articles on applied research, share experience gained while implementing animal husbandry activities, innovative techniques, and success stories and case studies to a dairy knowledge portal launched by the NDDB, he said.

Sowing yet to gain pace



Work in progress: Though the rain has been widespread, sowing is comparatively slow when compared to last year, in Mysuru district.— File Photo: M.A. SRIRAM

The recent pre-monsoon showers have brought little cheer as only 15 per cent of sowing could be achieved in the district.

While farmers in H.D. Kote are busy sowing Bt cotton, the planting of tobacco seedlings in Hunsur and Periyapatna taluks was in progress.

Pulses had been predominantly sown in parts of Mysuru, Nanjangud and T. Narsipur taluks. Though rain had been widespread, the sowing was comparatively slow. By this time last year, over 30 per cent of sowing had been completed.

“Delay in the arrival of pre-monsoon showers has resulted in delayed sowing. It will pick up after one or two more showers,” said Joint Director of Agriculture Mahanteshappa.

He told *The Hindu* that the target set for sowing this year was 3.9 lakh hectares. Last year, over 4.1 lakh hectares had been under cultivation. “Farmers had grown two or more crops on the same land in some places. This exceeded the target which was 3.9 lakh hectares even last year,” Mr. Mahanteshappa said. Farmers had cultivated short-duration crops, which

could be harvested in less than 90 days. “If the same trend continues, even the area of cultivation might rise.” While stating that there was no scarcity of fertilizers, which is available in cooperative societies, he said distribution of sowing seeds was under way at all Raitha Samparka Kendras.

Mr. Mahanteshappa clarified that there was no scarcity of sowing seeds owing to drought and they are available at all kendras.

Take your pick of the choicest mangoes

If you are particular about eating only naturally ripened mangoes, you can head to the Mango Mela to be organised by the Department of Horticulture at Curzon Park in Mysuru from May 27 to 29.

The mela comes at a time when concern has been expressed from various quarters over the use of calcium carbide, a chemical banned under the Food Safety and Standards Authority (FSSA) Act, for artificially ripening the mangoes.

While most food scientists and technologists have cautioned the public against consuming the calcium carbide mangoes, which has flooded the market, Senior Assistant Director of Horticulture, Mysuru, Dinesh Kumar told *The Hindu* that the main purpose of the mela is to ensure availability of naturally ripened mangoes, besides creating a market for the farmers.

Most middlemen and traders resort to artificially ripening mangoes with calcium carbide. “The calcium carbide will not be easily washed off the mangoes. The residual effect can cause health problems. Only naturally ripened mangoes will be available at the mela,” Mr. Kumar said.

Thirty stalls with various varieties such as Alphonso or Badami, Raspuri, Mallika and Malgova, besides the pickle variety will all be available at the mela.

The Horticulture Department, which is holding its 16th mela, had already trained mango farmers to naturally ripen the mangoes. Mr. Kumar, however, said spraying of ethylene gas for ripening the mangoes is not harmful. Ethylene is a plant hormone that aids ripening, he said.

A Mango Price Fixation Committee comprising the Deputy Director of Horticulture Basavaraj, officials from HOPCOMS, professors from the

College of Horticulture, Mysuru, and a couple of farmers will meet on the eve of the mela to fix the price of various varieties.

“There will be a uniform price for one particular variety of mango. The public can buy from whichever stall they wish, but the price of one variety will be uniform across the mela,” he said.

The price will be fixed in such a manner that the farmer will get his due and the consumer will also not feel the burden.

- *Mango Mela to be held from May 27 to 29*
- *Naturally ripened mangoes assured at the mela*
- *30 stalls will be put up at Curzon Park*
- *Raspuri, Alphonso or*

Badami, Malgova varieties to be sold

Ethylene gas safe for ripening fruits



HEALTH CONCERNS:Banana, mangoes and other fruits being sent through ethylene gas fruit ripening chamber at a food processing unit run by Heritage Foods at Mulugu in Medak district of Telangana.-Photo: K.V.S. Giri

Ripening of fruits by exposing them to ethylene gas and releasing a fruit ripening plant hormone in low concentrations of 10 to 100 parts per million (PPM) is considered safe depending upon the crop, variety and maturity.

Ethylene was recognised as safe by the United States Food and Drug Administration and fell within the category of food substances when used for purposes like ripening, in accordance with good manufacturing practice, said Anil K.R. Srivastava, Chief Operating Officer-Agribusiness of Heritage Foods. He took presspersons on a tour of the company's Integrated Pack House at Mulugu in adjoining Medak district on Wednesday.

Recent studies using gas chromatography, he pointed out, showed that an amount of ethylene large enough to stimulate ripening was always present within a fruit before the respiratory process of the fruit began.

He explained that ethylene was approved by the World Health Organisation and the FDA, calcium carbide was banned and its use punishable under law and while the former was completely safe and natural, the latter was hazardous and carcinogenic, affecting all vital organs of human body.

Mr. Srivastava said that the objective of the media exposure to the facility was to educate people about fruit ripening processes, alternate harmful ripening chemicals used by local vendors and how one could detect calcium carbide while buying fruits.

Vegetable prices shoot up

A shortage in supplies caused a spurt in the price of vegetables in the city markets on Tuesday, though dealers attributed the development to a crunch caused by the weekend holidays and the election day on Monday.

Despite the shortage in supplies, the prices of some of the items are expected to stabilise with supplies returning to normal soon, said sources in the Kerala State Horticultural Product Development Corporation, which procures and sells vegetables in the State.

However, the price of French beans has been rising steadily over the past fortnight with the retail price ruling around Rs. 90 a kg. Supply of French beans has been short, said a wholesaler in the Ernakulam market. According

to figures from the Vegetable and Fruit Promotion Council, the vegetable was selling at Rs. 80 a kg in the Aluva market.

VEGGIES TURN DEARER	
ALUVA MARKET RETAIL PRICES	
AS ON TUESDAY (Rs. per kg)	
Banana (nendran)	44
Beetroot	44
Bhindi	44
Bittergourd	48
Cabbage	28
Carrot	48
Vegetable cowpea	30
Elephantfoot yam	50
French beans	80
Green chilli	100
Onion (big)	16
Tomato	48

Source: VFPCCK

The shortage of vegetables could be the result of a long spell of dry weather for nearly a month. The State government had reported serious damage to vegetable crops in different parts of the State, including the area where cool season vegetables such as French beans, cabbage and cauliflower are cultivated.

Meanwhile, vendors said there was a shortage of locally-grown elephant foot yam. The price of the vegetable, a favourite in Kerala, was Rs. 60 a kg in the Aluva market on Tuesday. A shortage of supplies in green chillies too has seen the price shooting up. The price of the vegetable touched Rs. 100 a kg on Tuesday. The wholesale price was Rs 80 a kg. However, the price of big onions has continued to rule low and sold for Rs 16 a kg in the retail market.



Killer disease of wheat is lurking close, but India needn't worry yet

Wheat blast from South America has showed up in Bangladesh, but Indian firewalls are more robust. The fungus attacks the leaf of the crop and eats its chlorophyll, thereby affecting the plant's growth.



A Bangladeshi wheat farmer shows his crop destroyed by the wheat blast disease. (Picture courtesy Prof Tofazzal Islam, Bangabandhu Sheikh Mujibur Rahman Agricultural University, Bangladesh)

Bangladesh is grappling with a deadly fungal disease that has devastated about 15,000 hectares of wheat. This is the first time that wheat blast, which originated in South America, has been reported in Asia.

The disease is caused by the *Magnaporthe oryzae* fungus that was discovered in Brazil in 1985, and has since been known to periodically devastate fields in South America, according to studies published in the journal *Nature Science*.

After the infection was confirmed in the first week of March, farmers in Bangladesh began burning the affected crops. Dhaka-based *The Daily Star* reported that the fungus had impacted at least six districts. Temperature fluctuations and continuous rain in the previous month may have contributed to the spread of the fungus, the newspaper reported.

The fungus attacks the leaf of the crop and eats its chlorophyll, thereby affecting the plant's growth.

"This is a disease that originated in Brazil and very quickly spread across the whole of South America," said Prof Tofazzal Islam of the Department of Biotechnology at the Bangabandhu Sheikh Mujibur Rahman Agricultural University in Bangladesh.

"Complete fields can be wiped out by this disease. We noticed the infestation in districts close to India, and so there is a chance that wind might spread the infection to India and seeds may find their way across the border into the Indian market," Prof Islam said. Indian scientists, however, downplayed the threat.

"First of all, our wheat harvesting season is over," said Dr M S Saharan, Principal Investigator, Crop Protection, at the Indian Institute of Wheat and Barley Research (IIWB), Karnal.

"Next, our major wheat producing states are Punjab, Haryana and Uttar Pradesh. So, the chances of the disease spreading to our crops are very slim." Dr Jeet Singh Sandhu, Deputy Director General, Crop Sciences, at the

Indian Council of Agricultural Research (ICAR), said, “Bangladesh was affected after it failed to quarantine the seeds that it received from Brazil.”

He added, “Our wheat breeding programmes are robust and we do not need to import such seeds. Of course, this does not mean that we are not vigilant. We will soon be sending some of our lines of wheat to some of the affected areas to test them for resistance.

Once we have studied that, we will look to breed wheat that is resistant to this wheat blast too.” A decade ago, the UG99 wheat stem rust had found its way across continents from North America to Iran.

“In that case, we took our wheat samples and tested them in affected areas in certain African countries and bred those varieties that showed resistance,” said Dr R K Gupta, Director (acting), IIWB.

“A similar exercise is likely this time as well.” Asked whether genetically modified (GM) crops could be a possible solution, Dr Sandhu said, “That is unnecessary at this stage. We have a huge germplasm at our disposal and it is very robust. It is only after we have tried conventional methods of breeding that we will think of GM crops.”

West Bengal: No crop, one tube well, muddy ponds — Purulia’s summer saga

Similar to Birbhum, but unlike other districts in West Bengal, Purulia is largely a monocrop region, planting and harvesting paddy.

By dawn, a long queue has formed about a kilometre-and-half from Kororia village. People — holding aluminum buckets and pots or anything that can store water — anxiously wait for their turn at the tubewell that would soon begin to draw water in the form of mud.

“If you are late, all you get is muddy water,” said Sukumar Mahto, speaking about the only tubewell in this part of Purulia, which, the 29-year-old pointed out, is “a dry area”. This lone tubewell supports not just Kororia but neighbouring villages, too.

“We are used to harsh summers, but this year has been particularly bad. Children have acquired allergies and illnesses because there is no water.

There are no vegetables either, only potatoes, and that's what we have been sustaining on," Mahto said.

The ponds around the village began drying up two months ago. Most of them now sit mudcaked, a reminder that they used to be a water body a while ago.

A few still have some water left but their levels have fallen drastically. It is these that men, women, children and cattle use for all things necessary — bathing, washing, cooking, and drinking.

Similar to Birbhum, but unlike other districts in West Bengal, Purulia is largely a monocrop region, planting and harvesting paddy.

Before this long stretch of rainless dry heat set in, Purulia had received a good spell of rainfall in August last year, prompting farmers to try their luck at a second crop — many planted vegetables. But these failed.

“Purulia, officially, is a semi-drought-hit region. But the situation right now is similar to drought. There is no source of water in the district.

The surface water has dried up and the groundwater has reduced at an alarming rate. This started in November last year, so we began giving out crop insurance and extended the Rs 2-per kg rice scheme — meant for the lower income groups — to cover the entire district,” District Magistrate Tanmoy Chakraborty said.

He added that 1,000 tubewells have been installed where groundwater is still available. Dry wells have been added to low lying areas so they fill up when the groundwater rises.

For extra measures, the administration has asked owners of factories and small industries to install taps outside their industrial structures to make drinking water available to the common people. But these industrial owners have their own story to tell.

Prashant Janan (27), who runs a brick kiln with his father, said no work has taken place for the last three months.

“There is no water to manufacture brick,” he said. Work on developmental projects, government sources said, have similarly slowed down because of the scarcity of water.

“There is literally no water here any more. Factory owners have been asked to install taps outside their buildings so that people could come and drink water from these. We will be installing ours in a couple of days,” Jalan said.

These taps, however, will receive water only for two hours each in the morning and evening every day. “Purulia is a region where the plateau meets the plains... so it is a dry area in any case.

The people here are accustomed to harsh climate. What we need is a good spell of rain and the monsoons to come,” the DM said.

The monsoon, unluckily for Purulia and several other parched regions in the country, will be delayed by a week, according to the Met Department’s forecast. It will arrive in Kerala some time at the end of the first week in June. Until then, residents of Kororia village and those nearby will have to keep pace with the rising sun.



Two Ludhiana super cows smash milk-yield record

Two indigenous crossbred cows in Ludhiana have set a national record by producing 54.3 and 53.6 litres of milk, respectively, in a day, smashing the previous record of 53 litres set in 2010.

The cows — FC 1363 and FC 1319 — have been crossbred by Guru Angad Dev Veterinary and Animal Sciences University (GADVASU), Ludhiana. Director of GADVASU livestock farms Prakash Singh Brar said both the cows had been genetically modified through crossbreeding.

“These cows have broken the previous record of milk production on April 27. These cows give milk thrice a day against twice a day by an indigenous cow,” Brar added. Both the cows can take the extreme heat and can survive harsh conditions.

Both the cows are a hybrid of Holstein Friesian (Holland) and Sahiwal. While FC 1363 is five-year-old, FC 1319 is six. Both were born at the GADVASU dairy farms.



Genetically modified cows FC 1363 and FC 1319 have broken the national record of milk production. (JS Grewal/HT Photo)

On an average, the daily milk yield of a cow varies between 20 and 25 litres, say GADVASU experts.

A lactation period of 305 days is set for these crossbred cows to check the exact milk yield. Scientists at the university said the estimated production of milk from each cow during this period would be nearly 10,500 litres.

University vice-chancellor AS Nanda said crossbreeding was introduced in the country to boost milk production and enhance per capita availability of milk in the country. “The exotic breeds of cows have high milk yield, whereas the indigenous cattle are better adapted to local climatic conditions. Crossbreeding of indigenous with exotic germplasm can harvest the benefits associated with both the breeds,” he said.

At present, GADVASU has a herd of 200 such crossbred cows that could produce more milk than indigenous cows.

Brar said male calves born to these cows would be used as future breeding bulls to disseminate superior germplasm through artificial insemination for the benefit of the farmers.

GADVASU dairy manager Puneet Malhotra said the genetic makeup of animals coupled with the management at the farm had led to improvement in milk production.

THE HINDU BusinessLine

Fodder from reserve forest to the rescue of cattle in Kutch



Buffaloes take shelter from the scorching heat in Vekariya Rann, part of Great Rann of Kutch, in this May 15, 2016, photo. Credit: Samir Bhat

Joint forest management has come to the rescue in the scarcity-hit districts of Gujarat by providing fodder for the cattle. The forest areas of south Gujarat region, including districts of Bharuch, Valsad, Navsari, Surat and Tapi are supplying fodder to Kutch and other districts of Saurashtra.

Commenting on the comfortable fodder situation in the state, Additional Principal Chief Conservator of Forests - Monitoring, Anoop Shukla, told BusinessLine, “The fodder availability is sufficient in the state. We currently have 4 crore kg of fodder, which is being supplied as per the directions from the revenue department.”

However, the fodder situation in Kutch remains most alarming as it is a desert area. The district was supplied over 90,000 kg of fodder from Bharuch in March. “We get this fodder from the reserve forest areas through the joint forest management committee. We have been given standing instructions to supply fodder to Kutch district every year. Each year we supply close to 1 lakh kg of fodder to Kutch district,” said H S Patel, sub-DFO, Bharuch.

The Chief Minister, Anandiben Patel, on Monday appraised Prime Minister Narendra Modi about the scarcity situation in the state, where over 22 lakh people in six districts have been affected.

After two-years of scanty rains, parts of Saurashtra face severe shortage of water and fodder.

Worst affected

Milch animals are the worst affected by the scarcity. Each big animal – cow or buffalo –requires about 5 kg of fodder a day. The shortage of fodder has pushed up the price to Rs. 250/20 kg from Rs. 100-120 earlier. To address the situation, the government has started distributing fodder at Rs. 2 per kg in scarcity-affected districts through 120 grass-distribution centres.

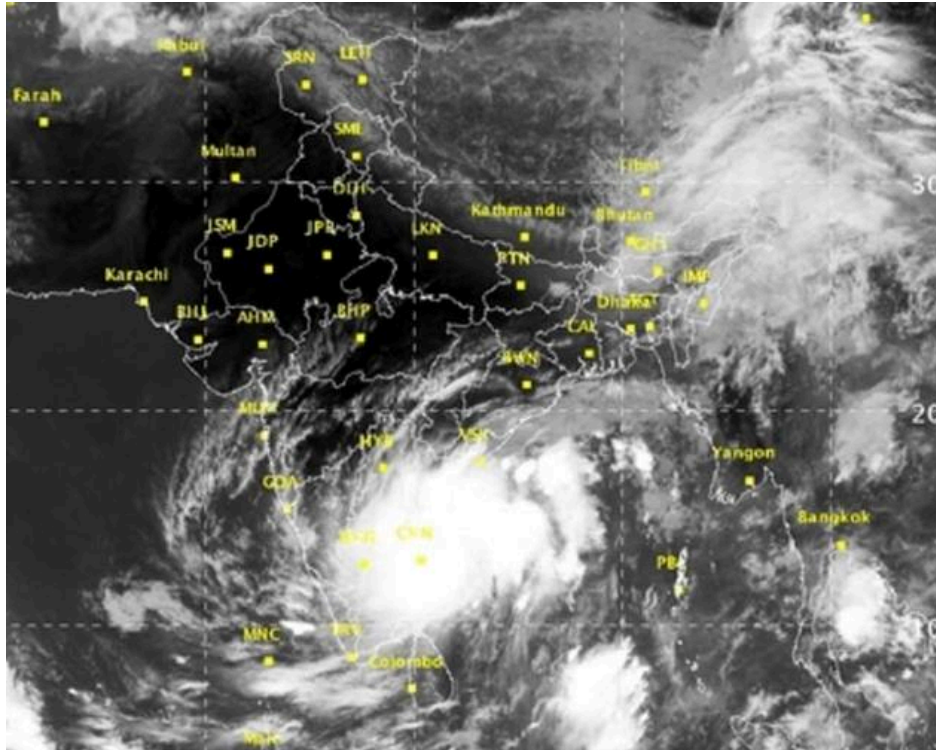
“There are fodder depots at taluka and village level. We get regular fodder supplies from Valsad. The current stock is sufficient to meet the requirement,” said an official from the Scarcity branch under Rajkot District Collector. Gujarat has a bovine population of over 2 crore.

Migration woes

In peak summer, migration in search of water and fodder is common for Kutch. But the government claims to have avoided migration of the Maldhari community by providing adequate fodder to the district.

In December 2015, there were reports about migration of cattle-breeders towards Central and South Gujarat, where the situation was relatively much better.

Heavy rain alert as depression drifts closer to Chennai



Satellite image as of 8.30 am on 18.5.2016

The depression in the South-West Bay of Bengal has drifted in 90 km to the East of Chennai and 70 km off the coast this morning.

India Met Department expects it to keep moving in a north-northeast direction and intensify as a deep depression.

Cyclone alert

The deep depression is later expected to become a cyclone in the West-Central Bay of Bengal, away from the Chennai and South Coastal Andhra Pradesh coast.

This progression is expected to happen over a period of the next two days.

The Met has forecast heavy to very rain with extremely heavy rain at isolated places over North Coastal Tamil Nadu and South Coastal Andhra Pradesh from this morning.

Heavy to very rain has also been forecast for North, Coastal and Interior Tamil Nadu and Rayalaseema, while it will be heavy over Coastal Karnataka, Kerala, North Coastal Andhra Pradesh and Lakshadweep.

Squally winds with speeds ranging from 55- to 65 km/hr gusting to 75 km/hr are likely along and off the coast of North Tamil Nadu and South Coastal Andhra Pradesh coasts.

Fishermen are advised not to venture out into seas off these shores.

Satellite pictures

Satellite pictures this morning show thunderclouds over a large area extending from Visakhapatnam, Kakinada, Khammam, Vijayawada, Guntur, Ongloe, Kavali, Nellore, Tirupati, Kadapa and Anantapur in South Coastal and adjoining interior Andhra Pradesh.

To the South, thunderclouds are seen lingering over Chennai, Kanchipuram, Vellore, Mahabalipuram, Thiruvannamalai, Bengaluru, Tumakuru, Erode, Kumakonam, Tiruchi, Thanjavur, Dindigul and Madurai in Tamil Nadu and adjoining South Interior Karnataka.

The weather continued to be hazy to cloudy at main stations in Kerala with a possibility of thundershowers breaking out later during the day.

Cardamom stays steady as demand matches supply

The small cardamom markets, after showing a declining trend last week, were steady on Tuesday at the auctions held in Kerala and Tamil Nadu.

Arrivals declined last week following a dip in the prices while buyers also have slowed down following arrival of summer showers in almost all the cardamom growing regions of Kerala, trade sources in Bodinayakannur said.

However, at the auction held today by the South Indian Green Cardamom Company Limited, Kochi, the arrivals stood at 31.3 tonnes and the almost the entire quantity was sold out. The maximum price was at ₹1,249 a kg.

The individual auction average slipped to ₹695.29/kg from ₹708.78 the previous Tuesday.

PC Punnoose, General Manager, CPMC, told *BusinessLine* that export buying last week was negligible.

Arrivals, last week, fell to 515 tonnes from 705 tonnes the previous week. The individual auction average remained steady and was vacillating between ₹655 and ₹755 a kg, trade sources said.

Total arrivals during the season up to May 14 were at around 29,275 tonnes and sales were at 28,212 tonnes.

The individual auction average as on May 14 stood at ₹608/kg.

Prices in Bodinayakannur (₹/kg): 8mm bold good colour 1,100-25; 7-8 mm 800-825; 6-7 mm 650; below 6 mm: 580-600. Good bulk was being traded at ₹680-725 a kg.

Timely welcome showers for crops

The summer rains of the last two days over Tamil Nadu have come as a major relief to farmers across the State.

The standing crops, including sugarcane and paddy, which are in early stages of planting will benefit. Paddy transplanting in major production areas and sugarcane planting for the 2016-17 crushing season (October-September) have been done. This sprinkling of summer rains will help establish the crops well, say farmers.

Prior to the rains, the temperatures had hit a high during the summer and in tandem with the chronic shortage and erratic supply of power, even farmers with groundwater were uncertain of irrigation. Now this takes care of water for the next few days.

By June, wind energy production kicks in and this augments the power supply in the State. The rains spell good news for the farmers.

Summer rains normally account for about one-sixth of the States average rainfall of about 920 mm annually. But in recent years rains in summer have

been scarce and the spell over the last couple of days was sorely needed. S Radhakrishnan, a paddy farmer in TV Puthur Village, Cuddalore district, who finished transplanting a short term three-month paddy crop last month, is happy. While there is no groundwater shortage in his area, power to the pump sets could not be taken for granted. Now the rains over the last couple of days have ensured his crops get adequate water.

K Venkatesan, a farmer in Cuddalore, said the rains over most of central and southern districts have covered the paddy areas extensively.

Sugarcane farmers and sugar millers are also a relieved lot. According to sugar industry sources, sugar recovery rate in recent weeks had hit a low of less than eight per cent sugar on every tonne of cane crushed. This spell of rains will help some of the mature crop recover and arrest the deterioration even if at the fag end of the crushing season over the next few days and support the young crop in the field for the coming season.

Sugar production this year is slightly higher than that of last season at about 9.91 lakh tonnes (9.27 lakh tonnes) as of April and mills have crushed about 111 lakh tonnes of cane (103 lakh tonnes).

According to industry estimates, there is about 1.86 lakh acres (1.92 lakh acres) of standing crop in early stage, planting done around January onwards, for the private sector mills which account for the major portion of crushing.

Short covering lifts rubber

Spot rubber recovered on covering purchases at lower levels tracking the sharp recovery in domestic futures. RSS 4 improved to ₹130 from ₹127 and ₹129 a kg respectively, according to traders and the Rubber Board. June futures flared up to ₹131.90 (126.83), July to ₹132.91 (127.85) and August to ₹132.28 (₹127.20) on the National Multi Commodity Exchange. RSS 3 (spot) weakened to ₹116.64 (₹118) at Bangkok. May futures closed at ¥164.8 (₹100.54) on the Tokyo Commodity Exchange. Spot rubber rates (₹/kg): RSS-4: 130 (127); RSS-5: 127 (124); Ungraded: 110 (106); ISNR 20: 117 (117) and Latex (60% drc): 101 (100).

Domestic Q1 tea output up 27%

Following a substantial increase in tea production in North India in March, the country's overall output in the first quarter (Q1) of current calendar has risen by as much 26.98 per cent over Q1 of 2015.

The Tea Board has now announced that in March, North Indian production rose by 25.97 million kg (mkg) to reach 53.04 mkg. On the contrary, South India's production fell by 1.39 mkg to dip to 15.30 mkg.

Collectively, India's production in March rose by 24.58 mkg to reach 68.34 mkg.

“Because of this, the cumulative output in the North in the first quarter of current calendar has increased by 25.12 mkg to reach 58.62 mkg. South Indian output, however, was 3.19 mkg less to dip to 44.61 mkg. The El Nino impact was there,” said Rajesh Gupta, compiler of annual *Global Tea Digest*.

“Collectively, India's production in the first quarter of 2016 rose to 103.23 mkg from 81.30 mkg in Q1 of 2015. This increase of 21.93 mkg marked a growth of 26.98 per cent”, he noted.

This has reversed the early apprehension prevailing until February that for the second consecutive year, India was heading for a lower production in 2016. Now, it appears that if this trend continues, India's production this year could be around 1215 mkg – the highest in the annals of Indian tea industry.

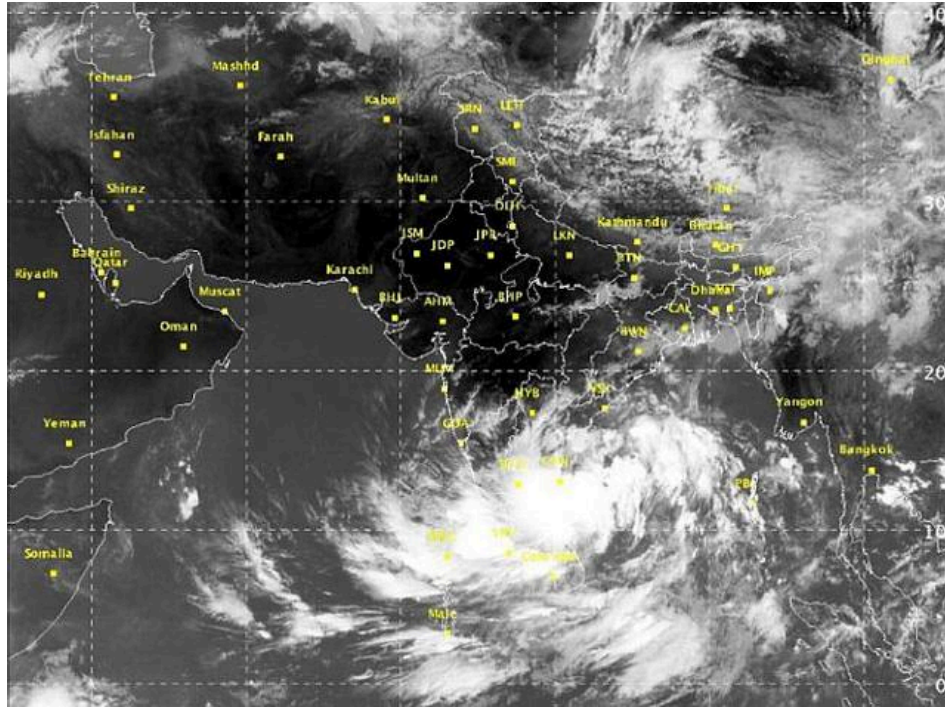
In the North, both Assam and West Bengal posted a higher output in Q1 while in the South, both Tamil Nadu and Kerala, lower production.

Edible oils rule flat

Barring palmolein, which rose by ₹4/10 kg, all other edible oils were unchanged tracking slack demand, weak futures amid expectation of satisfactory monsoon this year. Activities were very limited as stockists stayed away. Liberty was quoting palmolein at ₹602, super palmolein ₹612, soyabean refined oil ₹655. Ruchi's rates: palmolein ₹601, soyabean refined oil ₹635, sunflower refined oil ₹760. At Rajkot, groundnut oil *telia* tin

declined by ₹20 to ₹1,830 and loose (10 kg) eased by ₹15 to ₹1,160. BCE spot rates (₹/10 kg): groundnut oil 1,200 (1,200), soya ref. 635 (635), sunflower exp. ref. 670 (675), sunflower ref. 760 (760), rapeseed ref. 850 (850), rapeseed exp. ref. 820 (820), cottonseed ref. 655 (655) and palmolein 585 (581).

Heavy rain forecast for TN, Andhra coasts on May 18



Intensification of the depression into a deep depression will be delayed by a day: Met

The depression over South-West Bay of Bengal located 120 km to the south-southeast of Chennai on Tuesday will keep moving along the north Tamil Nadu and south coastal Andhra Pradesh coasts.

The system will align itself closest to the Chennai coast on Wednesday morning, according to a forecast by the India Met Department.

Squally weather

The Met has warned of heavy to very heavy rain with extremely heavy rain at isolated places over north coastal Tamil Nadu and adjoining south coastal Andhra Pradesh on Wednesday.

Squally winds reaching speeds of 55-65 km/hr gusting to 70 km/hr may prevail along north coastal Tamil Nadu and south coastal Andhra Pradesh.

Fishermen have been advised not to venture out into the sea from the Tamil Nadu and south coastal Andhra Pradesh coasts.

The Met said that the intensification of the depression into a deep depression will be delayed by a day to Wednesday.

Expected declaration of onset of South-West monsoon over the Andaman region too has been put off in this manner.

Likely cyclone

Significantly, the Met has said that the deep depression would move for some distance along the Andhra Pradesh-Odisha coast, re-curve to the north-northeast (away from coast) and enter the Central Bay.

Here, it is likely to further intensify into a cyclone; but there is confusion over the path the prospective cyclone may take for making a landfall.

A storm tracker featured by the US Climate Prediction Centre says that the landfall point would likely be Gangetic West Bengal and adjoining Bangladesh over the next three to four days.

The European Centre for Medium-Range Weather Forecasts sees the deep depression being guided along the Chennai-south coastal Andhra Pradesh stretch right up to the Odisha coast until Friday.

From here, it would make an apparently perpendicular turn towards the East and head for the Bangladesh coast close to Gangetic West Bengal by Sunday.

Landfall point

But the European Centre does not indicate a storm of cyclonic strength here; it could make landfall at best as a deep depression (lower by a step in rank to a cyclone).

The Canadian Meteorological Centre sees the system growing into a full-scale cyclone and targeting Bangladesh for a landfall by Sunday.

The Global Forecast System of the US National Centre for Environmental Prediction predicts a minimal cyclone but looking to hit Bangladesh and northern Myanmar.

The US Navy Global Environment Model takes the cyclonic storm towards Gangetic West Bengal and Bangladesh.

The UK Met Office model suspects that a cyclone may be in the reckoning as early as on Thursday off the Andhra Pradesh-Odisha coast.

None of the models suggest any part of the East Coast of India taking a direct hit from the system.

Depression in Bay of Bengal may not hit TN coast

The well-marked low-pressure area over Sri Lanka and adjoining Gulf of Mannar and South-West Bay of Bengal has intensified into a depression.

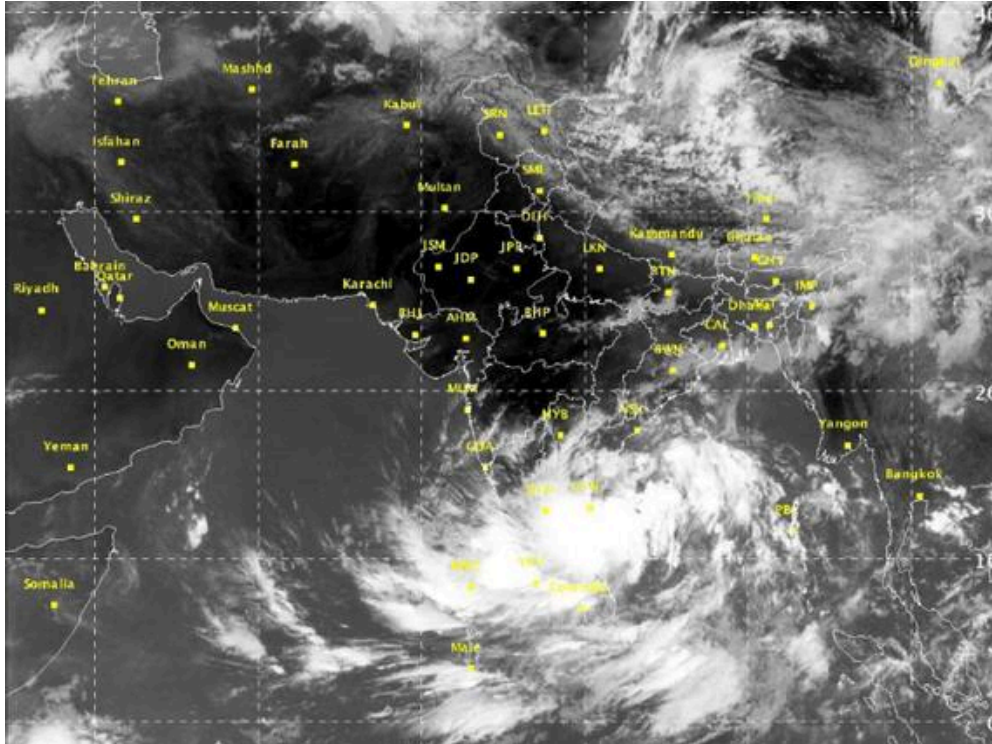
The storm is centred over South-West Bay of Bengal about 240 km south-southeast of Chennai, an India Meteorological Department update said.

The depression is likely to move north-northwestwards (along the coast of Tamil Nadu and South coastal Andhra Pradesh) and intensify into a deep depression (one step away from being called a cyclone).

This is expected to happen during the next two days, the Met said. The rain associated with the system is also expected to move north and cover the northern coast of Tamil Nadu and adjoining south coastal Andhra Pradesh.

Moisture flow cut

The interaction of the system with land over Sri Lanka had prevented it from intensifying, according to global weather models. A base over land curtails the direct flow of moisture into the storm system, which would have been possible if it were based over the warm waters around Sri Lanka and the southern Indian peninsula.



But global models expect the system to step out and merge into the Gulf of Mannar and the adjoining South-West Bay of Bengal and track north-northwest along the Tamil Nadu coast over the waters.

This would allow it some breathing space to intensify into a depression, an outlook that the India Met Department too maintains.

Heavy rain

Meanwhile, heavy rains have started pelting parts of Kerala and Tamil Nadu as the ‘low’ waits its time out over Sri Lanka.

Though based over land, proximity to the surrounding seas will keep the ‘pot boiling in the core of the system.’

Rampaging south-westerly flows turning south-easterly over coastal Tamil Nadu and blowing into Kerala will fuel the ongoing wet spell.

It is normal for pre-monsoon storm systems to form in the month of May, but not to linger around Sri Lanka and the southern Indian peninsula in this fashion.

They normally head out into the outer waters of either the Arabian Sea or the Bay of Bengal and take away embedded rains into the far shores of the Middle East or Bangladesh/ Myanmar.

Monsoon onset

This year, however, the building storm has chosen to stay put and is bringing into effect a vigorous spell of pre-monsoon (late summer) showers locally.

The flip side is that it may take longer for the core monsoon winds to consolidate over the seas and precipitate the onset of the South-West monsoon along the southwest coast of India.

The India Met Department has forecast the onset of the monsoonal rains over Kerala may be delayed by a week to June 7, with a model error of plus or minus four days.

Satellite pictures this morning showed the entire Tamil Nadu and Kerala and parts of South Interior Karnataka, Rayalaseema and coastal Andhra Pradesh surrounded by thunderclouds.

Business Standard

Agriculture cutbacks needed to meet Paris climate agreement

Paris climate agreement cannot be met sans cutting emissions from farming, according to a recent study.

Scientists from the University of Vermont, the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) and partner institutions calculated, for the first time, the extent to which agricultural

emissions must be reduced to meet the new climate agreement's plan to limit warming to 2 degree C in 2100.

They estimated that the agriculture sector must reduce non-CO2 emissions by 1 gigaton per year in 2030. Yet in-depth analysis also revealed a major gap between the existing mitigation options for the agriculture sector and the reductions needed: current interventions would only deliver between 21-40 percent of mitigation required.

The authors warn that emission reductions in other sectors such as energy and transport will be insufficient to meet the new climate agreement. They argue that agriculture must also play its part, proposing that the global institutions concerned with agriculture and food security set a sectoral target linked to the 2 degree C warming limit to guide more ambitious mitigation and track progress toward goals.

"This research is a reality check," comments researcher Lini Wollenberg. "Countries want to take action on agriculture, but the options currently on offer won't make the dent in emissions needed to meet the global targets agreed to in Paris. We need a much bigger menu of technical and policy solutions, with major investment to bring them to scale."

119 nations included mitigation in agriculture in their Intended Nationally Determined Contributions submitted to the UNFCCC. However, no work has been carried out to determine how these pledges will be accomplished.

Focusing more attention to sequestering soil carbon, increasing agroforestry, decreasing food loss and waste and shifting dietary patterns could all contribute significantly to reducing emissions from agriculture, according to the authors. However, much less work has been done on mitigation of emissions from these sources, so action is needed now to identify options and their impacts.

The study appears in the journal *Global Change Biology*.

India: An agricultural powerhouse of the world

Unknown to many, India's agricultural products fetches higher earnings than trade in services or manufacturing. With proactive support, India can further enhance its farm exports and contribute to its prosperity



The anatomy of global agriculture has undergone a complete metamorphosis in recent decades and is structurally very different now. According to the World Factbook of the CIA in 2014, the global agricultural output was \$ 4,771 billion.

But a full 42 percent of this output comes from just six countries – China (\$ 1,005 billion) is the largest producer, followed by India (\$ 367 billion). The US is third (\$ 279 billion), followed by Brazil (\$ 130 billion), Nigeria (\$ 122 billion) and Indonesia (\$ 121 billion). As one can see, five of the six global leaders in agricultural output are developing countries. In fact, China and India alone account for close to 30 percent of the global total.

According to the Food and Agriculture Organization (FAO), there are more than 570 million farms in the world, and 70-80 percent of them are family farms, accounting for more than 80 percent of the world's food in terms of value. Only four percent of these farms are present in high-income countries. Clearly, family farming forms the backbone of agriculture in developing countries.

Meanwhile, the world's population is projected to grow from about 7 billion in 2012 to 9.6 billion people by 2050. According to Alexandratos, N and J Bruinsma in 'World agriculture towards 2030/2050', food supplies need to increase by 60 percent (estimated at 2005 food production levels) in order to meet the food demand in 2050. India's domestic demand for food and fibre is expected to go up considerably as the country has the second-largest economically active population in the world.

The need of the hour is strategic thinking and rapid but thoughtful action that will result in increase in production and reduction in wastage. The UN-FAO estimates that nearly 30 percent of foods produced are wasted post-harvest, resulting in huge economic losses in addition to a negative environmental footprint. Food availability and accessibility can be made better by increasing production, improving distribution, and reducing these losses. Thus, reduction of post-harvest food loss is a critical component of ensuring global food security.

In the next 10-15 years, it is expected that 75 percent of primary agricultural production will come from Asia, South America and Africa. Efforts have to be made to protect crops from pre-planting to post-harvest for ensuring enough food is produced to feed the world. Thus, crop protection is a key component in guaranteeing food security.

India: Leading the agriculture revolution

Contrary to popular perception, India's agriculture is a success story, worthy of professional discussions in global forums. India ranks 11th and 12th globally in services and manufacturing sectors respectively, and second in the world in the agricultural sector. Indian agriculture in the 21st century is structurally dissimilar, diverse, stronger and superior to the one that existed during the Green Revolution.

In the three decades from the 1970s until the late 90s, India's agricultural GDP grew from \$ 25 billion to \$ 101 billion registering an absolute growth of \$ 76 billion. However, in the next 14 years from 2000 to 2014, it leaped from \$ 101 billion to \$ 367 billion, registering an astonishing growth of \$ 266 billion. In other words, the growth in agriculture in the last 14 years was 350 percent higher than the one achieved in the previous 30 years.

Another fact that many are unaware of is that this growth is being led by states not conventionally perceived as agriculturally progressive. The drivers of India's growth are actually high-value segments such as dairy, horticulture and inland fisheries. These three segments provide farmers with year-round income and account for 60 percent of India's agricultural GDP. No wonder, the states of Uttar Pradesh, undivided Andhra Pradesh and Maharashtra now make up the top three in agricultural production, relegating grain-centric states like Punjab and Haryana to 10th and 12th rank respectively.

Indian agriculture is no longer an underdog. It has progressed rapidly in recent years and ranks now as the second-largest food producer in the world, touching \$ 367 billion in 2014. The country's agricultural production is far above that of the US, which once supplied food grains to India to tide over our domestic food shortage. Unknown to many, India's international trade in agricultural products fetches higher earnings for the country than trade in services or manufacturing.

As a nation, we have several strengths that poise us well. India has a high diversity of topography, climate and soil, so it is inherently a multi-product agricultural powerhouse. No other country produces as many crops as we do. India's cropping intensity is the highest in the world. The country's small-sized, family farms practice a unique kind of mixed agri-horti-livestock farming, which is a cost-effective model ideal for other developing nations with small farms. Indian farmers multi-task, and shift with ease from crop cultivation to animal husbandry, thereby remaining engaged throughout the year. By and large, this versatility has transformed the Indian agricultural sector into a global leader.

As per the WTO, India ranks 19th in merchandise exports, but 6th in agricultural exports. This shows India's global competitiveness in agriculture. In 2014, the world's exports in agricultural products stood at \$ 1,765 billion and India's share of this was 2.5 percent. With better focus, India's agri-exports can easily achieve at least 5 percent share within next three years.

India must focus its resources, attention, skills and expertise on the agriculture sector to ensure self-reliance in terms of future food supply, and a steady growth of income from exports.

The government has to take steps to aid and enhance India's agricultural production with proven farming technologies and agri-inputs. For instance, despite India growing the maximum varieties of edible oils, it is the largest importer with 14 million tonnes, worth \$ 10 billion per year. The second largest agri commodity that India imports is pulses, predominantly dry peas (*Pisum sativum*). There is an urgent need to change this. Step by step, efforts have to be made to move India forward to achieving self-sufficiency in these crops, furthering the country's food security.

Ensuring rural prosperity

Seventy percent of India's population is rural, and contributes about 50 percent of India's GDP. Agriculture is the biggest private enterprise in India in over 600,000 villages. That India ranks second globally in agricultural production demonstrates that it is rural economic activity that is responsible for (and key to) India's growth and place on the world stage.

A study by the United Nations Sustainable Development Solution Network shows that improved farming practices result in increased productivity in agriculture, livestock and fisheries. Improved infrastructure and better access to markets promote rural prosperity.

Encourage 'Farm in India' for a bright future

According to the World Bank, India has brought about a landmark agricultural revolution that has transformed the nation from chronic dependence on grain imports into a global agricultural powerhouse that is now a net exporter of food. The government must recognise Indian agriculture as being export-oriented and a significant foreign exchange earner.

This recognition and aggressive promotion will build the right image of Indian agriculture and also stop the negative narratives. Proactive promotion will further increase India's farm exports, in turn bringing price and income stability and contribute to its rural prosperity. Finally, fast-track clearance of investment, production proposals including innovative technologies for agri inputs will considerably help, too. The Make in India initiative is a stage with great potential to recognise and champion Indian farmers, and provide the country with opportunities for a brighter future.

Agriculture leads net foreign exchange earnings

While India's services sector is highly import-intensive, imports component in agriculture is negligible since basic resources such as sunlight, land, water, etc are all available in the country



It is generally believed that services is driving India's exports and also net foreign exchange earnings. While data related to exports of services is easily available from government agencies and industry bodies, information about imports is missing. However, when one runs through the data of import & exports from multiple organisations such as UNCTAD, WTO, IMF, etc, the findings are surprising. It is agriculture that wins the battle hands down (*refer Table 1*).

As per the data, India's services sector is highly import-intensive (since all the softwares used in any digital equipment have to be licenced from abroad). In fact, some experts feel that software products imports are now growing faster than exports of these services. In 2014, India, at 21st position globally, ranked much lower than even smaller countries such as Croatia, Cuba, Israel, etc in the net income from services trade. India in 2014 earned net \$ 8 billion from \$ 304 billion trade in commercial services.

On the other hand, agricultural trade of \$ 56 billion fetched as much as \$ 18 billion in trade surplus. This is because while in services trade imports

account for a lion's share, in agriculture imports component is negligible since basic resources such as sunlight, land, water, labour, etc are all available in the country. Till 2000, agriculture catered to the needs of local population (driven by food security philosophy), however, focus shifted to exports in the later years. This resulted in increasing the exports from \$ 6 billion in 2000 to \$ 47 billion in 2013. Thus, agriculture is important not just for feeding local population, but also for fetching much higher net foreign exchange (better than services sector).

With focused aim to harness overseas market, the government should frame policies to encourage exports from agriculture & allied sector and bring in greater rural prosperity.

India coffee output to fall to lowest in two decades

With a 25% reduction in Karnataka, production could drop to 263,000 tonnes in the 2016/17 crop year, the lowest since 1998/99



Coffee output in the next crop year is expected to drop by around a quarter to the lowest in nearly two decades as poor rains and hot temperatures hit

plantations during the crucial flowering stage, the head of an industry body said.

India is the world's sixth-biggest coffee producer, although is well behind leaders Brazil and Vietnam.

Nonetheless, lower production from India could provide more support to global prices, already surging due to a drop in the output in top producer Brazil.

"Dry weather is hitting plantations in the crucial flowering stage. On a conservative basis, we are estimating a 25 per cent drop in production," Baba P. S. Bedi, chairman of the Karnataka Planters Association (KPA) told Reuters.

The southern state of Karnataka accounts for about 70 per cent of India's total output. India is likely to produce 350,000 tonnes coffee in the current season ending on September 30, according to estimates by the state-run Coffee Board.

With a 25 per cent reduction in Karnataka, production could drop to 263,000 tonnes in the 2016-17 crop year, the lowest since 1998-99.

The Coffee Board is expected to provide its first production forecasts for 2016/17 by mid-June, said D R Babu Reddy, an agricultural economist at the Board.

India, which started coffee cultivation in 1,670 with seven smuggled beans, produces mainly robusta, used primarily in instant coffee.

"Due to the back-to-back droughts, ground water has been depleted," said Bedi, pointing to lower rainfall since the start of March on top of drought last year.

Coffee growing regions in southern India received up to 70 per cent lower rainfall than normal from March to mid-May, according to the India Meteorological Department.

Higher than normal summer temperatures alongside water scarcity had badly

impacted the conversion of coffee flowers into cherries, said Anil Kumar Bhandari, a large planter.

India exports three-quarters of its coffee production and production problems will dent shipments in 2016/17, said an exporter based in Bengaluru.

"This year, exporters are aggressively selling due to a recovery in global prices. Next year we will have very limited carry forward stocks," the exporter said.

Italy, Germany and Belgium are the main buyers of India's crop, paying a premium over global prices.

India's coffee exports have risen 19.4 per cent to 213,187 tonnes since the start of current marketing year on October 1.



THE TIMES OF INDIA

Farmer uses bees to keep elephants at bay

When an elephant knocked down the compound wall of his house at Onampalayam near Thondamuthur, George Thomas, a farmer and a retired engineer, decided to find a permanent solution to the problem. That was not the first time that he had spotted an elephant around his farm land after he started living there five years ago.

Based on research and expert opinion, he set up beehives around the compound wall of his farm land. Since then, he has not seen any elephant intrusion.

Ever since George moved with his family to Thondamuthur, they started spotting elephants around the farm land.

"As time passed, I got used to them passing the land but when one elephant knocked down the compound wall of my residence, I decided it was time to

do something. Recollecting my childhood memories, I knew that elephants were afraid of bees. I did some research and realized that in countries like Africa bees were used successfully to keep elephants at bay," he said.

He set up beehives around his home. Since then, 18 months have passed and they have not seen any elephant intrusion.

"They pass by the farmland but are always at a distance of 100m from my land," said George Thomas.

He grows a variety of fruits, spices and vegetables.

Include surplus milk produce in midday meal scheme: Farmers

Agitating milk farmers in Odisha proposed the state government to include milk and milk products in the mid-day meal scheme and for beneficiaries of several other schemes to make proper use of the surplus milk. Recently, the farmers in Bargarh have spilled over 50,000 litres of milk protesting the Orissa State Cooperative Milk Producers' Federation's (OMFED) decision to reduce procurement of milk by 30% from April 1.

"If milk and milk-products like curd and paneer are included in the mid-day meal and schemes under the Integrated Child Development Services (ICDS), it will provide nutritious food to children, pregnant women and lactating mothers, thereby reducing malnutrition, infant mortality and mother mortality rates in the state. It will also help milk producers and cooperatives and help rural households in sustaining their livelihood," said Odisha Milk Farmers Association president, Rabi Behera. Eight states including Uttar Pradesh, Gujarat, Kerala, Tamil Nadu, Karnataka, Madhya Pradesh and Goa serve milk in mid-day meals to increase nutritional value of the food.

State nodal officer for mid-day meal scheme Gangadhar Sahoo said, "This is certainly a good proposal but there are a lot of issues. Milk is a highly perishable item so storage and distribution system has to be strengthened. We will also have to look into the cost of the meal after adding milk, curd or paneer."

The farmers also proposed to use surplus milk in the state by adding butter milk in the subsidized cooked meal scheme Aahar, and by providing milk to children in Anganwadi centres and patients in government-run hospitals.

According to the sources, the OMFED has the procurement and processing capacity of 5.2 lakh litres of milk per day while farmers produce around 6.7 lakh litres per day across the state. Besides the surplus produce, the OMFED has decided to reduce procurement by 30% from April 1.

Around 14% of rural farmers, especially women, produce milk.

"Milk production over the years has enhanced their economic standards and strengthened rural economy of the state. But the OMFED's decision to reduce procurement without any prior notice has affected their livelihood. We are urging the government to think of some feasible alternatives for the milk farmers," Behera added.

New policy for orange crop in making

An integrated policy for orange crop, which will take care of all aspects like yield improvement, better water usage and marketing campaign to promote Nagpur Orange, is in the making. A study group for establishing orange processing and industry discussed it at a meeting here on Tuesday.

State agriculture commissioner VV Deshmukh, who presided over the meeting held at Vanamati complex, expressed concern over the alarming decline in yields as well as quality of the fruit in last few years. He noted that though orange is grown in around 1 lakh hectares in Vidarbha, these days orchard owners were earning barely enough to cover costs because of poor marketing avenues and crop management.

The Ambia Bahar crop in October-December and Mrig Bahar in February-March floods the market, and oversupply leads to distress selling. Director of horticulture SS Adsud, state horticulture and medicinal plants board director SL Jadhav, joint director of agriculture of Amravati division SR Sardar, VED president Devendra Parekh, Morshi MLA Dr Anil Bonde and Katol MLA Ashish Deshmukh expressed their views during the meet.

Dr Bonde pointed out that new research and technology with proven results was yet to find its way to the orchards in the region. He sought integration of the latest technology in the new policy for good results in all pre and post harvest processes. He further said the new drip irrigation system being recommended has double lateral flow but the government subsidy provides for single line drip, so farmers are denied the new technology. Similarly, the new orange varieties show good growth in spacing of 10ft but the government schemes impose condition of 20ft.

He also sought government intervention and support since the exports to Bangladesh are hit by import duty imposed by the neighbouring country. Dr Bonde stressed on promotion of Nagpur orange as a healthy fruit that increases immune system, by promoting juice parlours aggressively. Deshmukh sought better cold storage facilities and railway connectivity for transporting oranges to Delhi.

NEW ORANGE POLICY IN NUTSHELL

- Oranges grown in 1 lakh hectares in Vidarbha, but farmers suffer because of poor pricing and marketing
- New policy to integrate latest technology, disease-resistant plant varieties, efficient water management and post-harvest processes
- Aggressive campaign to be designed to promote orange juice as health drink
- Marketing to get more attention and bottlenecks in exports to be tackled

Sugar lobby cut up about drip irrigation plan for cane crop

The government and the state's powerful sugar lobby have locked horns over bringing the crop under drip irrigation.

Maharashtra State Co-operative Sugar Factories Federation (MSCSFF), the apex body of sugar mills in the state, has demanded that the state

government provide financial assistance to farmers to bring the sugarcane growing area under drip irrigation.

"The government's insistence to shift sugarcane cultivation from flood irrigation to drip irrigation is good. But there are practical difficulties and the government must give financial assistance to implement its plan. Farmers and sugar mills cannot implement drip irrigation on their own," chairman of the federation Shivajirao Nagavade told TOI on Monday.

He added that the sugar industry is the backbone of the rural economy with thousands of farmers and farm labourers dependent on the crop.

"If the government and the experts continue to target sugarcane growing farmers and sugar mills and hold them responsible for the water scarcity, the sugar industry will collapse and farmers will be in distress. Who will be responsible for destroying their livelihoods? Sugarcane is the only crop which guarantees good returns," Nagavade added.

Prime Minister Narendra Modi, who recently chaired a high-level meeting on the drought and scarcity situation in parts of Maharashtra, has told chief minister Devendra Fadnavis to increase water-use efficiency through drip and sprinkler irrigation, stating that drip irrigation in sugarcane increases the quality of sugar.

Fadnavis has assured Modi that the state government is working on a plan to ensure that all the sugarcane growing area in Maharashtra comes under drip irrigation in three years.

However, the sugar lobby, dominated by the Nationalist Congress Party (NCP) and the Congress, has been resisting the move and is supported by sugar barons in the BJP and the Shiv Sena.

Nagavade said the notion about cane farmers using excess water is wrong. "Earlier, it was wafa system where the flow was stopped after every few metres to water the cane crop. Now, a majority of farmers use eksari system where water flows from the top to the bottom."

Despite the drought, sugar mills completed their crushing season, this year. As many as 32 sugar mills, the highest in the state, had a successful cane-crushing season.

In Latur district, where section 144 of the CrPC was clamped to protect water sources, 12 sugar mills have been defiantly siphoning off huge quantities of water for sugarcane crushing and the state government, which had earlier announced that no mill in the drought zone would be allowed to crush, remained a silent observer owing to pressure from the sugar lobby.

Latur-based water expert Atul Deulgaonkar said it is a complicated matter. "Even in the drought-affected areas of Marathwada, thousands of farmers are dependent on sugarcane as it is the only crop which gives them assured returns. The government must have a plan before taking any hasty steps while shifting cane cultivation to drip irrigation," he said .

THE ECONOMIC TIMES

Palm oil industry's profits slip 25%, small firms shut shop

India imports nearly 70 percent of its edible oil requirements from Malaysia and Indonesia; the rest is met from domestic production.

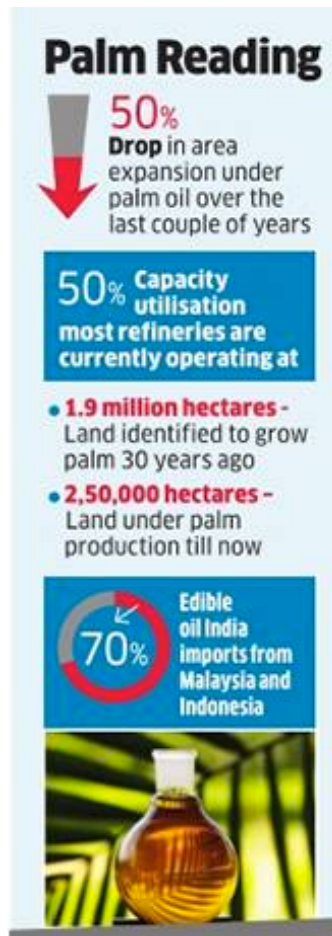
HYDERABAD | KOLKATA: India's palm oil industry saw profits tumble by around 25 per cent last year, burdened by droughts, rising production costs and, chiefly, cheaper imports, forcing several small firms to shut shop, according to industry sources.

India imports nearly 70 per cent of its edible oil requirements from Malaysia and Indonesia; the rest is met from domestic production.

"Area expansion under palm oil fell by over 50 per cent over the last couple of years due to low prices of crude palm oil and poor rainfall," said Sanjay Goenka, chief executive of 3F Oil Palm Agrotech, representing the Oil Palm Developers and Processors Association . "Karnataka and Odisha suffered the most among the oil palm producing states."

Industry experts added that most of the refineries are currently operating at 50 per cent capacity utilisation.

"Almost 30 years ago, 1.9 million hectares of land were identified to grow palm. However, till now only 2,50,000 hectares are under palm production. While a hectare of land can yield 300-400 kg of groundnut oil, nearly 4 tonne of palm oil can be produced from a hectare of land," said BV Mehta, executive director, Solvent Extractors' Association .



Resultantly, companies manufacturing edible oil are not keen to enter palm production.

"Internationally, there is huge supply of palm oil at a much cheaper price. Malaysia and Indonesia are major producers of palm oil. Moreover, the weather in India is not conducive for palm crop. It also has a three-year

gestation period before it starts producing oil. In that way it is not remunerative to grow palm," said Angshu Mallick, chief operating officer, Adani Willmar, which produces edible oil under the brand Fortune.

The industry has been asking the Union government to give plantation status to palm crop for the last ten years and also to amend the land laws.

Mehta said, "We had written to the ministry of agriculture on amending the land laws so that palm plantation can come up. But land is a state issue. So states have to amend laws to allow companies, who are interested in palm production, to buy land and start producing the crop."

Sources said that the Centre has asked the states to look into the issue and Karnataka and Arunachal Pradesh are likely to have exempted companies from the cap on land ceiling.

Vindo TP, research analyst at Geofin Comrade , said that the demand has already picked up pace on account of the upcoming Ramzan festival and is likely to improve from July August.

India should open agriculture sector to US investment: Embassy official

Sindelar said that soyabean from all major supplier countries is a genetically modified product and not allowed at present in India.

NEW DELHI: The US believes the Indian government has a "lot of interest" in biotechnology and genetically modified crops and said the anxiety of consumers over issues related to altered agricultural produce can be overcome. Import of GM soyabean, which India doesn't allow, could help meet the country's edible oil and poultry feed requirements, Scott S Sindelar, Minister Counselor for Agricultural Affairs at the US embassy in India, told ET in an interview.

India should open up to US investment in the agriculture sector, Sindelar said, adding that the government's intervention in the cotton seed market could send signals to US investors that may not reflect the opportunities in the country.

Earlier this year, the government set a uniform price for Bt cotton seeds across states for the benefit of farmers, a decision that affected Monsanto,

the world's largest seed company BSE -0.03 % . "There is a lot of interest in biotechnology and GM by the Indian government and scientists.



I can't speak on behalf of the Indian government and their regulatory system, but like a lot of countries, I think they face concerns from the public. There is anxiety, I guess, among Indian consumers. We think those can be overcome," he said. India's edible oil and poultry industry has recently been discussing the option of importing soyabean, which is relatively cheap in the world markets now and in abundant supply.

Sindelar said that soyabean from all major supplier countries is a genetically modified product and not allowed at present in India. The US is keen to export soyabean to India to increase its earnings from agricultural shipments to the country, which stood at \$1.33 billion in 2015. "India is short of vegetable oil. It imports \$10 billion a year of vegetable oil. It's also short of protein meal for the poultry industry, agriculture and dairy industry," he said. "The Indian government is taking positive steps to address some of the constraints. Some of these constraints are these legacy policies, which grew out of India's early history in the 1960s. So these are valid questions that could permit changes in some of the legacy programmes that then would allow more market-based solutions to the agriculture sector," Sindelar said.

Asked if the US government had taken up the Monsanto issue with the agriculture ministry, Sindelar said, "Our concern was it sends signals to US

investors that may not reflect the opportunities in India. That's our concern." He said India should open up to US investment in agriculture.

US companies such as Cargill, DuPont Pioneer, John Deere , Mondelez and Wal-Mart already operate in India in areas from seed production to finished food products. He said US companies need to feel comfortable with the regulatory environment and protection. "When a major food company invests, they also want to make sure that they can secure supplies of high-quality ingredients, whether the product they produce is for domestic consumption or export," he said.

Sindelar acknowledged that the Indian government is taking steps to address constraints in agriculture growth and development. "The investment in infrastructure - roads, distribution; close look at input subsidy like pilot programme for fertiliser, and the national agriculture market are the right steps in the direction," he said. "When our chief economist was in New Delhi recently. One of the questions posed by India was we would like to hear your experiences of the California drought. That is the kind of issue where we can have a positive discussion with Indian government."

With prices high, cultivators to increase sowing area for growing chilli

The shortfall in harvested crop and rising demand from overseas, particularly China, have raised the price of chilli to a new peak.

KOCHI: Spurred by the sharp rise in prices, chilli growers in Andhra Pradesh, where it is cultivated the most, are planning to increase the sowing area for the next crop. Premium quality chillies now fetch Rs 150 per kg, the highest ever in its history. "Farmers were initially planning a 30% increase in acreage, which is expected to begin in July after the monsoon sets in," said Ravipati Peraiah, MD of Vijayakrishna Spice Farm.

The shortfall in harvested crop and rising demand from overseas, particularly China , have raised the price of chilli to a new peak. Chilli is the largest exported spice from India . Earlier, it was expected that the deficient rains will push down output by 25% to 30%. But the final estimate after the harvest was that crop will be short only by 15%.

"In Guntur, cold storages would have 50 lakh bags (each bag of 35-40 kg) while there will be another 70 lakh bags from other centres of Andhra Pradesh. If the monsoon is good as the reports say, then prices may come down," said Venkat Rosaiah, president of Guntur Chilli Commission Agents Association.



Current prices range from Rs 120-150 per kg depending on the quality. This is 40-50% higher from a year ago. Unless monsoon is good, the current price level may last till the first crop from Madhya Pradesh arrives.

Pomegranates to rescue farmers battling water crisis in drought hit areas

In Maharashtra, the biggest producer and exporter of the fruit in the country, the best quality pomegranates come from the driest regions of the state.

PUNE: Pomegranate is the new symbol of hope for farmers, policymakers and industry alike in water scarce regions. While tribal farmers in Madhya Pradesh are trying out this non traditional crop with government incentives, the Mahindra Group is promoting it in Wardha district of Vidarbha region to alleviate the agrarian crisis.

Even as the area under other fruits either remained stable or declined, pomegranate is the only fruit crop to have registered a 29% growth in the area for the past two years. In Maharashtra , the biggest producer and exporter of the fruit in the country, the best quality pomegranates come from the driest regions of the state such as Solapur and the rain shadow regions of Sangli district.



According to the f i r s t a dvance estimate for 2015-16 available with the National Horticulture Board, area under other fruit crops such as sweet lime, sapota, guava, papaya and mangoes has declined. Pomegranate cultivation has picked up even beyond Maharashtra.

AK Singh, managing director of National Horticulture Board said, "Pomegranate is a dollar crop as it gives assured returns to farmers.

The demand for planting material of pomegranates has been the highest in the last two years." Pomegranate is not a traditional crop in Madhya Pradesh, which has one of the highest rates of growth of agriculture in the country

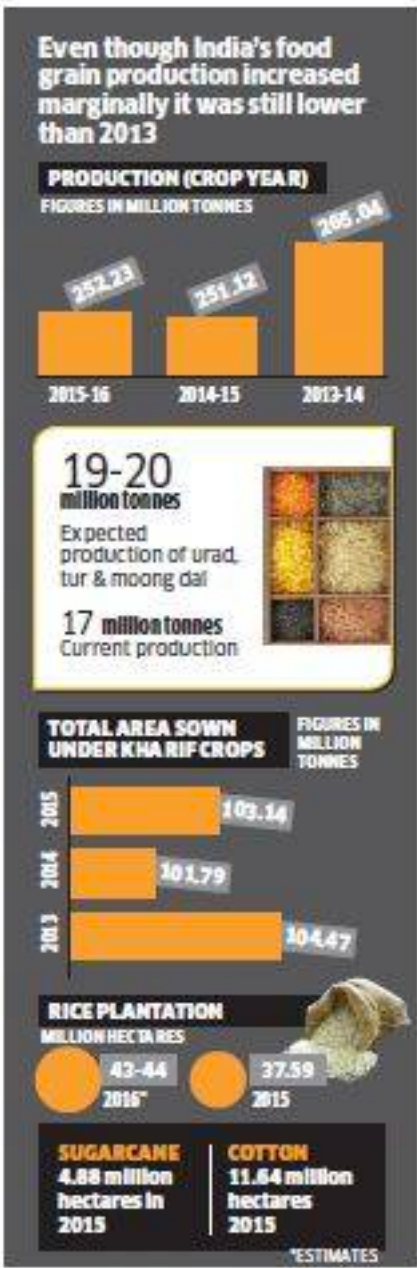
Farmers get their cultivable land ready with expectations of good monsoons



Although the country faced two successive years of monsoon shortfall, India's food grain production increased marginally to 252.23 million tonnes in the 2015-16.

NEW DELHI: With above-normal monsoons expected to start by the first week of June, farmers have started preparing for the cultivation of paddy, soyabean, pulses, cotton, bajra, jowar, groundnut and maize , raising hopes of a bigger harvest of grain this year.

Although the country faced two successive years of monsoon shortfall, India's food grain production increased marginally to 252.23 million tonnes in the 2015-16 crop year from 251.12 million tonnes in 2014-15. Output was lower than in 2013, when food grain production was 265.04 million tonnes.



This year, cultivation of rice, soyabean and pulses may increase, while the area under cotton may reduce and sugarcane planting may remain unchanged, experts said. The weather office forecast rainfall would be 6% above the longperiod average this year, although the onset of the monsoon over Kerala could be delayed by a week from the normal date of June 1.

The total area of kharif crops sown as of October 1 was 103.14 million hectares compared with 101.79 million hectares in 2014 and 104.47 million hectares in 2013.

"The delay in monsoon by a week should not make a difference as we are looking at a normal monsoon. Planting should be at 2013 levels and even more," said Trilochan Mohapatra, director general of the Indian Council of Agricultural Research, the country's top agriculture research institute.

He said if rains were normal and evenly distributed, farmers would not miss the chance to plant rice.

"Planting of rice can easily cover 43-44 million hectares," he said. Farmers have started preparing land and raising nurseries, from where plants will be transplanted to fields by the second week of June.

The area under soyabean, which is the second-largest cultivable crop followed by cotton and pulses - tur/arhar and moong - may increase this year.

"A good monsoon will ensure increase in productivity of soya by 5% over the previous year. We see decent recovery of groundnut acreage in Gujarat, where planting was less last year due to poor rains," said Davish Jain, chairman of India's Soyabean Processors Association.

Professionals from Bengaluru turning farming into successful business venture

“Successful people like Bill Gates, Richard Branson and Steve Jobs may not have had the qualifications but chose to follow their passion,” says Kumar Ramachandran, CEO of Farm Taaza.

BENGALURU: Urban farming is not new in Bengaluru. The city boasts of a vibrant community of home gardeners who put their terraces, balconies or backyards to good use. But many are now translating their passion into successful business ventures. Take the example of S Madhusudhan, an advertising and marketing veteran, who -taking a break from his 18-hour-a-day job following health concerns -started growing vegetables in a 30x40 sqft plot. What's more, Madhusudhan witnessed a vegetable vendor washing carrots with sewage water.

These were life-changing events. He launched an organic farming startup, back2basics, in 2011. That small plot has grown to over 180 acres.



"People worry about what they wear but don't care about where their food comes from," he says. On 3.5 acres, Madhusudhan even offers experiential farming to his consumers so that they know how back2basics grows its vegetables.

"Successful people like Bill Gates, Richard Branson and Steve Jobs may not have had the qualifications but chose to follow their passion," says Kumar Ramachandran, CEO of Farm Taaza. After spending half his life in the US, the Silicon Valley professional started his farming venture here after selling his engineering devices services. Farm Taaza, formed in 2015, sources fruits and vegetables from farmers for its customers. It has generated a revenue of nearly Rs 5 crore in seven months -Sept 2015 to March 2016 -and embarked into contract farming on 20 acres recently .

Former lawyer, Sumeet Kaur, who worked with a tax consultancy firm for seven years believed she would take up farming after retirement. But in 2014, after she quit her job, she used her savings to set up Spudnik Farms in Hoskote. Though profitability, labour and water supply remain challenges, she does not regret the career switch. "My USP is that my customers know me and trust that I will supply fresh produce," Kaur says.

She grows vegetables and greens that are not easily available and that keeps her brand value rising.

Earth Kitchen, which started in 2013 offering farm lunches on weekends, has now evolved into an interface that offers workshops on acquiring land, master-planning the farm, harvesting water and organic resources, business planning for the farm as well as landscaping. Says owner Arati Venkat, who quit her law career with the Dubai Government, ""Through Earth Kitchen, I want to share my experiences with those who cannot access a farm life but want to."

While farming offers fulfillment to those with a passion, here's some advice for those who want to pursue it as a career: "Understand the successes and failures of farmers closely and the need of the discerning consumer to make your brand seen," says Madhusudhan.