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## THE HINDU

### NABARD to extend aid for mud crab cultivation



**BOOST TO AQUACULTURE**

NABARD PROJECT TO IMPROVE LIVELIHOOD OPTIONS FOR IN AQUA FARMERS IN KRISHNA DISTRICT

- Feasibility study done to introduce mud crab rearing in brackishwater ponds
- Inspection of ponds to begin from **September 25**
- NGO members trained in cultivation methods and marketing strategies

PROJECT AREAS  
Kruthivenu, Koduru, Nagayalanka, Machilipatnam and Kaikaluru mandals

PROMOTION OF MANGROVE CRAB CULTIVATION AND ASIAN SEABASS VARIETY ARE A FEW AREAS OF OUR PROJECT WORTH RS. 2 CRORE

N. MADHUMURTHY, NABARD ASSISTANT GENERAL MANAGER

Apart from having a good demand in South East Asian countries, mangrove crab fetches Rs. 1,200 a kg in domestic market too

With the Marine Products Export Development Authority (MPEDA) planning big to promote mud crab, also known as mangrove crab (*Sylla serrata*), cultivation in the sea coast mandals, the National Bank for Agriculture and Rural Development (NABARD) has completed a feasibility study to introduce the crab rearing in the brackish water ponds in Krishna district.

The exercise was undertaken as part of the project proposed to improve the livelihood options for those engaged in aquaculture in the district for which the NABARD will extend financial assistance. The project aims to make crab cultivation in aqua ponds viable as the species is available only in mangrove forest and survives in brackishwater, NABARD Assistant General Manager N. Madhumurthy told *The Hindu*. “Promotion of mangrove crab cultivation and Asian Seabass variety are a few areas of our project worth Rs. 2 crore,” he said.

NABARD has trained members of the Sneha, an NGO working on aquaculture, in the cultivation methods and other marketing strategies at the Rajiv Gandhi Centre for Aquaculture (RGCA), Pondicherry in July.

“The RGCA experts have trained us in technical aspects such as feeding, site selection, and growth monitoring and marketing strategies and other cultivation aspects of crab culture in brackishwater ponds,” said Sneha Director M. Nageswara Rao.

Meanwhile, the Central Institute of Brackishwater Aquaculture, Chennai, has already scripted success in cultivation of mud crab by involving Yanadi tribes in brackish water ponds located in the mangrove forest in Nagayalanka. According to CIBA experts, *Sylla seretta* is being exported to South East Asian countries from Chennai and it fetches Rs. 1,200 a kg in domestic market in Indian cities too.

### **Farmers’ meet**

*Minister asks ryots to go for organic farming*



Agriculture Minister Prathipati Pulla Rao has called upon farmers to go for organic farming to get a remunerative price for their produce from niche markets. Interacting with farmers during meeting as part of ‘Rythu Kosam Chandranna’ at Parchur Agriculture Market he said the Chandrababu Naidu government was committed to making farming profitable by encouraging ryots to adopt best agronomic practices, cut costs and improve productivity and make suicide by farmers a thing of the past.

He dubbed as ‘politically-motivated’ Leader of Opposition Y.S. Jaganmohan Reddy's proposed fast on Sept. 26 to press for Special Category State status

for Andhra Pradesh. Transport Minister Sidda Raghava Rao said overcoming bifurcation blues, the State Government would construct a world-class capital.

### **First agri app of ANGRAU developed**

The first mobile agri app of Acharya N.G. Ranga Agricultural University has been developed by Scientist (T.O.T) P. B. Pradeep Kumar and Principal Scientist and Coordinator of District Agricultural Advisory and Transfer of Technology Centre (DAATT Centre) K. Mosha and named as angrau e extension. The features of the mobile app include text, audio, video and toll-free number for farmers to call the university for technical help.

It includes text, audio and video of paddy, sugarcane, maize, oilseed, pulses, millets and maize. It can be downloaded from Google Play Store as angrau e extension ANGRAU Vice-Chancellor A. Padmaraju, Director of Extension A. Raja Reddy and others were present.

### **Rain revives hopes of farmers in Kalaburagi**

*5.08 lakh hato be covered under rabi crops*



Farmers are preparing the land for sowing Bengal gram and jowar in Kalaburagi district.

Rainfall in the month of September has revived the hopes of farmers to take up the sowing of rabi crops as a compensation to the heavy losses suffered due to the failure of rain during the kharif season in the district.

Moderate to heavy widespread rain in September has revived agricultural operations in most parts of the district with the farmers taking up tilling to prepare the land for the sowing of Bengal gram and jowar. As against the average rainfall of 124.8 mm rain, the district had received a rainfall of 114.0 mm rainfall.

Officials in the Agriculture Department said that rain in the third and fourth weeks of August in some parts of Kalaburagi district had helped the farmers take up sowing of sunflower. Rain in the first and second week of September had helped in loosening the soil enabling the farmers to take up land preparation activities. As per the information available with the Agriculture Department, the farmers started sowing operations a couple of days ago. The rain has also helped in reviving the standing red gram crop in a majority of the areas in the district.

Though the yield would be considerably reduced, the red gram crop which survived the failure of rain in the kharif season would provide the much needed compensation to farmers. The Agriculture Department has increased the coverage of rabi crops in the district to a record of 5.08 lakh hectares. The officials expect that a large tract of unsown kharif area would automatically be transferred to the rabi area.

***5.08 lakh ha to be covered under rabi crops***

### **Rule of reservation**

*Agricultural market committees categorized*

Selection of agricultural market committees for implementation of the rule of reservation for ST, SC, BC and unreserved has been completed by the committee constituted for the purpose.

A total of 168 agricultural market committees (AMCs) in Telangana State have been slotted for the reservations through draw of lots, a press release from the Agriculture and Cooperation Department has informed. The committee for selection met under the chairmanship of the Secretary to



Government, Agriculture & Cooperation here on September 22, and finalised the AMCs.

### **Risks grow for global sugar market as India's cane crop wilts**

Some industry officials and traders see sugar production falling to 26 million tonnes and even below 25 million tonnes in 2016-17.



Thousands of acres of India's sugar crop are suffering severe damage from a faltering monsoon, with some farmers in the world's second-biggest grower forced to feed withered cane to cattle in the top producing state.

After a string of bumper harvests created an Indian sugar glut, drought could cut supply in the marketing year starting in October and there is a risk production will drop below consumption for the first time in seven years in the following 2016-17 season.

And even though India is still angling to boost exports in the upcoming season to cut stockpiles, this picture could swiftly turn around with a shortfall in output likely to bolster global sugar prices languishing at seven-year lows.

"The market hasn't factored in the impact of drought on 2016-17 production," said Harish Galipelli, head of commodities and currencies at Inditrade Derivatives and Commodities.

Industry officials say thousands of hectares of cane have been damaged after India's first back-to-back drought in three decades, as farmers also refrain from planting cane for the next season due to water scarcity.

In the top sugar-producing State of Maharashtra, a recent *Reuters* visit showed the impact of the drought.

Farmer Vijay Nazirkar harvests cane shoots daily, but they are so withered he is using them to feed his cattle.

"Sugar mills will not buy this dwarf cane with small shoots," said Mr. Nazirkar as he chopped cane up for his 22 cattle, one of his few sources of income as other crops such as corn and onions have also been hit by a prolonged dry spell linked to an El Nino weather event.

So far, he has fed nearly half of his cane crop to cattle in his village of Nazare, about 200 km southeast of Mumbai.

### **Sugar rush**

Commodities house Czarnikow puts India's production next season at 28.9 million tonnes and the Indian Sugar Mills Association at 28 million tonnes.

Although after assessing conditions in Maharashtra and the third-biggest producing State of Karnataka, some industry officials and traders see production falling to 26 million tonnes and even below 25 million tonnes in 2016-17. That compares with a near record 28.3 million tonnes this year and expectations of annual consumption of 25.2 million tonnes in the upcoming season.

Maharashtra's output could drop nearly a quarter to 8 million tonnes next season and be even lower in 2016-17, said Sanjeev Babar, Managing Director of Maharashtra State Co-operative Sugar Factories. After a good start in June, monsoon rainfall weakened in July and August and had badly affected the crop, said Mr. Babar.

## **Water intensive**

Monsoon rains also failed in 2009 due to an El Nino, forcing India to import sugar and pushing global futures to a 30-year peak.

Since India will start the new crop year with more than 10 million tonnes of stocks, it has room to sustain exports, said Rahil Shaikh, Managing Director of ED&F Man Commodities India.

India announced new rules on Friday making it compulsory for sugar producers to ramp up exports to at least 4 million tonnes in the new crushing season, up from 1.3 million tonnes in the current season, to cut stockpiles.

But Galipelli of Inditrade Derivatives and Commodities said exports would have to be restricted in 2016-17 to maintain buffer stocks and global prices would likely rise. Water intensive cane can take 10 to 18 months from planting to harvest so cultivation of a new crop needs to be completed in the next four months for harvesting in 2016-17.

But some farmers in Maharashtra say it's too late.

## **Young minds and green frames**

Four Class 8 students of Holy Angels' Convent School in the city will see their endeavour to promote organic agriculture take a big leap forward when the CD of a documentary they made on the subject gets released here on Wednesday.

The four — Sera Mariam Binny, Harshita Heven, Roshni Ronald and Raziya S.K. — were inspired by Ponkunnam Varkey's short story 'Aa Vazha Vettaam,' which was part of their Malayalam syllabus. They have made a 25-minute documentary 'Nammukku Pacha Thodaam,' which stresses on the need for Kerala to go the organic way.

Pointing out through instances of agricultural products, particularly vegetables, that come into the State containing high levels of pesticide, the

four students try to convey the message that even within the conditions in the State, it was necessary to go for organic cultivation of vegetables.

The main shooting locales for the documentary were the 3-acre organic farm on the premises of Cliff House, the Chief Minister's official residence, apart from Xanadu, the Agriculture Minister's official residence, from where the students captured on film the various methods of organic agriculture, animal husbandry, and so on.

### **Terrace farming**

The terrace farming initiatives in the residences of KPCC president V.M. Sudheeran and Mayor K. Chandrika have also been featured in the documentary, which concludes with a message from poet Sugathakumari as she plants a sapling on the Manaveeyam Veedhi. The four have dedicated the documentary to Divya, a classmate of theirs from Class 1 to 5 who passed away in 2012. M.S. Jaya, Director, Public Instruction, will release the documentary CD at a function at the school auditorium at 10.30 a.m. on Wednesday in the presence of school Principal Sister Irene K.S.

### **Livestock farming, a 'bank on hooves'**

The 19th All India Livestock Census, 2012, puts the total livestock population in India at 512.05 million.

The 2014-2015 Annual Report of the Department of Animal Husbandry, Dairying and Fisheries under the Union Ministry of Agriculture and Farmers Welfare, identifies the livestock sector as an important sub-sector of agriculture in the Indian economy as it is a significant livelihood activity for most farmers, 'supporting agriculture in the form of critical inputs, contributing to the health and nutrition of the household, supplementing incomes, offering employment opportunities, and finally being a dependable "bank on hooves" in times of need.'

Organisers of the National Seminar on Teaching, Research and Extension gaps in Livestock development seminar held at Puducherry have identified

livestock farming as a significant contributor to the mitigation of rural poverty, especially in the case of women.

In fact, the 2014-2015 Annual Report states that development of the livestock sector would be more inclusive as the majority (87.7 per cent) of livestock in India is owned by farmers of marginal, small and semi-medium operational holdings.

“Livestock development is about improving productivity, and ultimately improving the livelihood of those dependent on it,” said Dr. Natchimuthu of the Department of Veterinary and Animal Husbandry Extension Education, Rajiv Gandhi Institute of Veterinary Education and Research, Puducherry.

### **SHG formed to rent modern machinery**



A farmer transplants paddy seedlings using a transplanter in a field at Thirupparkadal village.-Photo: C. Venkatachalapathy

Fifty women self-help groups (SHGs) have been formed in Vellore district to provide modern agricultural machinery on rent to farmers to enable them to overcome the problem of labour shortage.

Giving this information to newsmen during a press tour to see the agricultural activities in Kaveripakkam block on Tuesday, R. Nanthagopal,



Collector of Vellore district said that a sum of Rs. four crores has been given to these SHGs for the purchase of modern farm equipments.

#### **Rs. 4 Cr. Given**

One such equipment which is now being popularised by the agriculture department among farmers is the paddy transplanter which saves considerable labour. A visit to a paddy field in Thirupparkadal in Kaveripakkam block where the transplanter was used revealed that the equipment helps in speedy transplantation in rows with uniform spacing.

R. Jayasundar, Joint Director of Agriculture (JDA), Vellore said that the government was encouraging farmers to use the machinery for cultivation of paddy under the system of rice intensification (SRI) in the Arcot, Walajapet, Sholinghur, Thimiri, Kaveripakkam, Nemili and Arakkonam blocks where paddy is predominantly cultivated on an area of 31,700 hectares. Out of the total of rent of Rs.15,750 per hectare for hiring the machinery, the farmers using the machinery are given a back-handed subsidy of Rs.3000 per hectare under the National Agriculture Development Programme (NADP). A total target of 3000 hectares has been fixed for Vellore district, including 700 hectares in Kaveripakkam block alone.

The JDA said that 14-day young seedlings are transplanted by using the machinery.

The use of the transplanter enables the farmer to maintain the grain population and earn an additional income of Rs.5000 to Rs.7000 per acre. The use of the transplanter enables the farmer to obtain 45 tillers in each seedling, and 120 grains in each tiller, he said.

## **Harnessing solar energy for agriculture**

*Solar pumpsets come in handy for farmers to save power*

Facing simmering hot weather almost for nine months in a year, Vellore district is eminently suited for harnessing of solar energy for various purposes.



The government is granting almost 80 per cent subsidy to farmers coming forward to install solar pumpsets for energising irrigation pump sets. K. Kumaravel Pandian who has installed a fixed type solar pumpset in his farm land in Sirukarumbur village in Kaveripakkam block availing of the subsidy given by the government last year told newsmen during a press tour of agricultural activities in Kaveripakkam block on Tuesday that he is able to harness solar energy throughout the day. He is using it for irrigating his horticultural crops including tomato, brinjal, papaya, drumstick, bitter gourd and chillies.

### **Uses Tangedco power too**

Asked if he is able to avoid using electricity supplied by the Tamil Nadu Distribution and Generation Corporation for irrigation, Mr. Pandian said that he could not totally replace Tangedco power since the equipment that he has is not capable of storing solar energy for use in the night. Owing to water shortage, he has to irrigate the crop during the night too. M.S. Inbanathan,

Executive Engineer, Agricultural Engineering Department said that 17 five-HP solar pump sets each costing Rs. four lakhs have been supplied to farmers with a subsidy component of Rs.3.04 lakhs, amounting to about 80 per cent.

The farmers are able to achieve a water output of 82,000 litres per day from the deep bore well by using the solar pump sets. Four solar pump sets have been supplied to farmers in Kaveripakkam block alone, he said.

### **Shade net**

Parameswari, wife of Mr. Pandian has established a shade net on one hectare of land with a subsidy of Rs.3.55 lakhs about two years ago in the same village.

The shade net is an innovative method of raising nurseries. She has raised seedlings of brinjal and other vegetables in the shade net.

Mr. Pandian said that they were able to make a profit of Rs.one lakh if they invest Rs. 7 lakhs for raising the nurseries in the shade net in a year. Mrs. Parameswari said that they supplied the seedlings to buyers in Chennai and other places.

R. Nanthagopal, Collector of Vellore district said that subsidy totaling Rs. 40.10 lakhs has been given to 15 farmers for installing shade nets on a total area of 15,000 square metres in Vellore district in the last two years. During 2015-16, a target has been set for setting up shade nets on an area of 20,000 square metres. The beneficiaries have been selected and work orders issued, he said.

### **Understanding the monsoon**

We have just returned to the Chennai harbour after nearly a month in the Bay of Bengal, aboard the ocean research vessels *Sagar Nidhi* and *Roger Revelle*. The two ships were on a joint India-United States field campaign, the second since 2013, to understand the influence of the ocean on the wet

and dry phases of the summer monsoon. The monsoon is vital to the social and economic well-being of populations across the south Asian region. From farmers to national economic planning agencies, all would benefit from improved monsoon forecasts.

The surface waters of the north Bay of Bengal are among the freshest (i.e. least saline) anywhere in the world, due to monsoon rains and the discharge of fresh water from several mighty rivers. The warm, fresh upper layer of the Bay supplies prodigious amounts of moisture and heat to the atmosphere, forming masses of tall, dark clouds that bring monsoon rain deep inland.

### **Detailed mapping**

During the recent campaign, nearly 50 scientists, engineers and students on the two ships mapped the uppermost layer of the Bay of Bengal in unprecedented detail. The commitment of ships, personnel, instruments and other resources represents a major investment by India and the United States in monsoon research. The data from the two ships, as well as moored and drifting instruments, are beginning to reveal how the upper ocean interacts with the atmosphere. Monsoon winds and ocean currents stir the fresh water over large distances, and 200-kilometer wide ocean eddies draw it into thin filaments. Yet the mixing between river water and sea water is very slow. The thin, fresh layer responds quickly to changes on the surface caused by winds and sunlight. At the same time, it helps to trap some of the sun's heat at subsurface depths, to be released into the atmosphere days and weeks later.

Realistic model simulation of monsoon clouds is a notoriously hard problem in atmospheric science. Given these complex interactions between ocean and atmosphere, even the most sophisticated computer models struggle to provide accurate monsoon forecasts several days to weeks ahead. Errors in monsoon simulation can spread rapidly, potentially degrading global weather and climate forecasts. Therefore, a deeper understanding of monsoon air-sea interaction, the key objective of our joint endeavour, is a prerequisite for improved forecasts.

## **Training scientists**

An important part of our cooperative effort is training young scientists to use and build upon modern techniques by working alongside teachers and scientists from both countries. The *Sagar Nidhi* hosted senior U.S. scientists, and the *Roger Revelle* hosted six young Indian scientists. We worked with special observation tools including an autonomous robotic boat and glider, underway conductivity-temperature-depth profilers, and acoustic Doppler current profilers, to map several thousand kilometers of upper ocean structure with high resolution. In addition, an air-sea flux mooring, built by U.S. scientists and deployed from the *Sagar Nidhi*, is making accurate measurements of momentum, heat and moisture exchange across the ocean surface.

As partners in education and science, we are proud of the achievements of this India-United States effort, which has been five years in the planning. Our joint work is part of the active global effort to enhance predictability of weather and climate through deeper understanding.

This field study is one component of the broad India-United States collaboration — The Ocean Mixing and Monsoons and Air Sea Interactions in the Northern Indian Ocean-Regional Initiative (OMM-ASIRI). We thank the Indian Ministry of Earth Sciences' Monsoon Mission programme and the U.S. Office of Naval Research for their support and leadership of the partnership, and the 17 Indian and U.S. institutions that have made it possible.

*(Professor Amit Tandon is at the College of Engineering, University of Massachusetts Dartmouth, and Professor Debasis Sengupta is at the Centre for Atmospheric and Oceanic Sciences, Indian Institute of Science, Bengaluru.)*

***A deeper understanding of monsoon air-sea interaction, the key objective of our joint endeavour, is a prerequisite for improved forecasts***



## **Kudumbasree goat market turns successful**



Puthuppady grama panchayat president Ayishakkutty Sulthan handing over the first goat sold at the goat market organised by the Kudumbasree District Mission in Kozhikode on Tuesday.

The Kudumbasree District Mission has collected more than Rs. 3 lakh from the first ever ‘Goat market’ held under the ‘Aadu Gramam project’ in Puthuppady grama panchayat on September 19.

The Kudumbasree goat farmers could sell all the 100 goats that had been arranged for sale as part of the programme, Kudumbasree District coordinator T.P. Muhammed Basheer said.

The Aadu Gramam project of the Kudumbasree State Mission involves supplying goats to women’s self help groups at a subsidised rate. The members rear these goats for milking or for slaughter.

Some even use the goats for breeding purposes. The dung and urine of the goats are in demand for production of organic manure.

In Kozhikode district, the project was started in Puthuppady grama panchayat CDS six months ago. Now there are 16 panchayats in the district implementing the project, while two more panchayats are getting ready to join.

As per the project, 25 goats are distributed to groups of five women at a cost of around Rs. 2 lakh including insurance. The groups get a subsidy of Rs. 50,000 while some panchayats offer an additional subsidy of Rs.20,000.

The goat market was a first of its kind endeavour, the success of which owes much to the forthcoming Id-ul-Azha in which goat slaughter is a prominent custom. Inspired by the success of the first attempt, Kudumbasree is planning to organise similar markets in other panchayats as well on suitable occasions, Mr. Basheer said.

### **Getting veterinary research to move from ‘lab to land’**

*Seminar addressed issues faced by livestock farmers*



Participants discussed research conducted in different States at the national seminar, which was held in Puducherry recently.

Acknowledging the gaps between veterinary research and using its findings for the benefit of livestock farmers on the one hand, and gaps between teaching in veterinary institutes and realities of conditions facing the livestock farmers on the other hand, the Indian Veterinary Extension Forum held its national seminar on Teaching, Research and Extension gaps in Livestock development in Puducherry recently.

The seminar was co-hosted by the Rajiv Gandhi Institute of Veterinary Education and Research, (RIVER) Puducherry.

The Indian Veterinary Extension Forum, with 120 members from 15 States in India, is a formal body of Veterinary Extension researchers and practitioners who are veterinary graduates.

They include academicians, scientists, practicing veterinarians and policy makers. 'Extension' refers to the transfer of technology to the field.

Dr. K. Natchimuthu of the Department of Veterinary and Animal Husbandry Extension Education, RIVER, and organising secretary of the seminar, said, "Many veterinary research findings lie with institutes or laboratories. We wanted to address the issue of how to get the benefits of research to the farmers, or in other words, from 'lab to land.' We also identified gaps between teaching in veterinary institutes and issues faced by farmers. Veterinary Extension is an applied science. There must be effective linkage between teaching, research and extension education in veterinary science. The seminar is aimed at measures to reduce the gaps between the three areas."

The seminar addressed issues faced by livestock farmers like getting the right kind of scientific feeding, improving productivity and healthcare of their animals, and ensuring a remunerative market.

Participants discussed researches conducted in different States. Forty research papers under the topics of ICTs and development, Transitions in Farming Systems, Transfer of technology, Extension Approaches, Gender and livestock development, and Research methodology were presented. This ensured cross learning among participants, said organisers.

### **Bird monitoring programme missing**

European Spoonbills, photographed by Basil Peter, a bird enthusiast at Ezhupunna in Alappuzha.

*Kerala culled around two-lakh poultry last year following avian flu*

Two months into the migratory bird season, a migratory bird surveillance programme promised after the last year's avian flu outbreak, is missing in the State.

Around 2 lakh poultry in Kottayam and Alappuzha districts had to be culled to contain the disease. The Forest department had announced surveillance programmes for domestic and long distant migrant birds following the incidents. It proposed the monitoring scheme in January this year fearing that "there is every possibility of the resurgence of the disease in future."

Bird watchers and ornithologists associated with the important wetlands in the State where the migratory birds congregate in large numbers confirmed the absence of "routine surveillance plan against avian influenza" in birding sites. The bird enthusiasts have also reported the arrival of early migratory birds in almost all the wetlands of the state this year.

E. S. Praveen, the Thrissur district coordinator of the Bird Atlas programme, said no tracking of the birds is being carried out in Kole Wetlands though Painted Storks and Sand Plovers have started arriving in large numbers.

Basil Peter, a bird watcher from Ernakulam, who visited the birding sites of Ezhupunna, Puthu Vypeen and Kandakadavu in the district this season, said confirmed the absence of the observation system.

Dr. B. Sreekumar, president of the Kottayam Nature Society, attested to the absence of the supervisory programme mechanism in the wetlands of Kottayam district including Kuttanad and Kumarakom areas. Migratory species have started arriving in the district from August. Other than the bird watching programme being implemented under the Green Partnership programme of the department, no serious efforts have gone into the tracking of the birds for the disease, he said.

C. Sasikumar, renowned ornithologist associated with the Malabar Nature History Society, said no official steps for keeping a tab of the visiting birds were in place in the northern Kerala. Instances of migrant and domestic

ducks intermingling and feeding could be seen in wetlands of Alappuzha and Kottayam districts.

The pathogens of diseases, which would remain dormant in wild animals, would establish themselves in favourable conditions. Hence, strict vigil and close monitoring of the situation is warranted, he said.

### **Farmers' hope short-lived**

The hopes of the farmers of delta region of saving the standing Samba crop that got renewed when Mettur Dam recording increased inflow for the past two days has proved to be a short lived one.

The increase in inflow that began from Sunday dropped sharply again on Tuesday morning, presumably due to fall in discharge from the reservoirs in Karnataka.

The depleting water level in the dam for the past few days was a matter of serious concern for the entire farming community of the delta districts and also of the Mettur Dam East-West canal irrigation system.

The water level dipped to 68.91 feet on Monday evening.

Taking into consideration the grim situation prevailing in the delta region, the release of water from the Kabini Dam and Krishnarajasagar Dam was resumed on Saturday, Public Works Department sources said.

Initially 2,250 cusecs of water was released from Kabini Dam and another 3,402 cusecs from the Krishnarajasagar Dam on Saturday.

It was stepped up to 4,000 cusecs and 4,502 cusecs respectively on Tuesday, the sources said. The Mettur Dam started realising the fresh release of water from both the dams. The dam received 5,000 cusecs on Monday evening and it rose to 8,237 cusecs on Tuesday evening.



The water level in Mettur Dam stood at 67.94 feet on Tuesday evening against its full level of 120 feet. While 13,000 cusecs was being released from the dam for the standing Samba crop in delta districts, another 800 cusecs is being released for cultivation activities in about 45,000 acres in the districts of Salem, Erode and Namakkal under the dam's East-West canal scheme. The storage in the dam stood at 30.90 tmcft against its full capacity of 93.470 tmcft.

### **Food safety: CFTRI signs MoU with Kerala govt.**

CSIR-Central Food Technological Research Institute, Mysuru, and the Commissionerate of Food Safety, Government of Kerala, have entered into an agreement for strengthening the food safety initiatives of the State government.

A memorandum of understanding (MoU) was signed at a function held at Thiruvananthapuram recently, in which V.S. Sivakumar, Minister for Health and Family Welfare, was present. The MoU was exchanged between Professor Ram Rajasekharan, Director, CSIR-CFTRI, and K. Illangovan, Secretary, Health and Family Welfare, Government of Kerala. Under the agreement, CSIR-CFTRI will assist Kerala in the upgrade of the existing analytical labs, training the food analysts and carrying out analysis of selected food products as part of the safety surveillance for a period of 18 months.

Prof. Rajasekharan hoped that a similar model can be replicated in other States to ensure safe food to people and catalysing capacity-building efforts.

### 3 simple homemade low-sugar recipes you must try

Got a sweet tooth, and trying to be fit at the same time? Try some homemade recipes which can satiate your taste buds, without causing much damage to your waistline.

Richa Mattu, nutrition and health manager, South Asia, Hindustan Unilever Limited, has shared tips to help satisfy those dessert cravings the healthy way:

“While you go about enjoying your desserts, it’s important to remember that portion control is the key to mindful eating,” she said.

Here is what she has to offer for all those who can’t control their sweet cravings.



**Delightful spiced rice pudding:** Rice pudding is clearly one of the simplest and humble yet yummy desserts. With a dense, luxurious texture and rich, creamy flavour it’s difficult to find anything negative to say about it. Traditionally, containing only milk, rice, sugar and a hint of butter at its most basic, rice pudding is as close to a blank canvas for flavour as you’re likely to get.

Ingredients and Method: Smart ingredient swaps can take this dish to an all new level on the nutrition quotient. Ensure you use skimmed milk instead of whole milk and use non-nutritive sweeteners instead of sugar. Infuse your milk with some whole spices – cinnamon, star anise, cloves and the quintessential cardamom and you'll enter into a whole new dimension of flavour. As a serving suggestion, you can stir in some almonds, apricots and pistachios to make it more interesting and give it that crunch.



**Special Banana and Oatmeal cookies:** There are heaps of recipes for healthier versions of cookies, but this one ups the ante.

Ingredients and Method: The healthy ingredients used in the recipe make it a nutritious dessert. Use rolled oats (whole grain, which makes it a good source of fiber), canola oil and soy milk as substitutions for butter and full-fat milk. Add in some ripe bananas, which adds another dimension of flavour. These cookies are best relished guilt-free as you can savour them with the natural sweetness which is rendered by the ripe banana.



**Fruity Yogurt Parfaits:** Frozen low fat yogurt, fruit, and granola make for a healthy and filling snack and is definitely sweet enough for a smart dessert replacement.

Ingredients and Method: Parfaits are fresh and tasty since you can use frozen yogurt in different flavours and mix and match them with seasonally available fruits such as Kiwi, Pomegranate, Strawberry and Peach. Creamy low-fat yogurt layered with plump and juicy fruits, all topped with crunchy granola will hit all the right spots.

### **Express Recipes: How to make Chena Kheer**

Kheer can have an end number of variations, and chena kheer is one of them. For people who have sweet tooth and swear by desserts made of milk products, this recipe is just perfect. Make it on a special occasion or just to satiate that sugar craving. Check out the recipe of Chena Kheer by Nisha Madhulika.



## **Ingredients**

Full cream milk – ½ liter (for making chena)

Full cream milk – 1 liter (to thicken it up)

Sugar – 1 cup (225 grams)

Powdered sugar – ¼ cup (40 to 50 grams)

Lemon – 1 (big size)

Saffron – 15 to 20 threads

Green cardamom – 4 to 5

Pistachios – 7 to 8

Take two vessels separately for making chena and thickening up the milk. When milk starts simmering, take it off the flame and allow it to cool.

After 3 to 4 minutes, add lemon juice little by little and keep stirring constantly. When milk coagulates completely and chena and water start separating, stop adding lemon juice into it.

Strain the chena over a cloth and pour cold water over it to remove the sourness. Lift up the cloth from all sides and squeeze out the excess water. Chena for making rasgullas is ready.

For kheer, when milk starts simmering, reduce the flame and cook until it thickens. Keep stirring the milk at regular intervals so that it doesn't stick to



the bottom of the pan. When milk thickens up, add cardamom powder, saffron threads and powdered sugar.

Take chena in a plate and knead for up to 5-6 minutes until smooth. Make small lumps from the chena and roll giving them round shape. Place these chena balls on a plate. With this much quantity 60 to 65 chena balls can be prepared.

Take sugar in a pressure cooker, add 2.5 cups of water and cook on flame until sugar dissolves in water.

When syrup starts simmering, place the chena balls into it, close the pressure cooker with lid. After one simmer, reduce the flame and cook for 10 to 12 more minutes on low flame. Turn off the flame now.

When all the steam escapes, take out the balls from pressure cooker and allow them to cool down



Kheer is ready, take it out in a plate and garnish with some pistachios. Place this chena kheer in refrigerator for 1 to 2 hours and allow it to cool. Serve chilled and relish eating.



## From ginger to mint: Add some jazzy twist to your coffee

### **Add some jazz to your daily cuppa with mint or ginger.**

We rely on coffee to kickstart our morning, to get through the day or bear those late night work sessions. But plain coffee can get a bit drab. We won't advise you unhealthy add-ons like ice-cream or chocolate. Here's how to make your cuppa stirring, sans calorie pile-up.

**Maplelicious:** If you want a sweet kick in your coffee, try maple extract. The extract is low on sugar and not as thick as maple syrup. Add two-three drops of the extract in your coffee pot. Rich in flavour, it's not sticky either, unlike the syrup.

**Benefits:** Maple extract prevents diabetes, and is good for your skin as well.

**Cinnamon fun:** Why just limit your love for cinnamon to tea? This spice can make your coffee flavourful, too. Add 2 teaspoon of cinnamon or simply dip a cinnamon stick into your coffee.

**Benefits:** It is an antioxidant that helps bring down the sugar levels in your body. Cinnamon also helps in boosting your immune system.

**Zing in a pod:** Cardamom gives coffee an exotic flavour. Ground cardamom seeds with coffee beans or add whole pods to your brew. One crushed cardamom pod per cup of coffee is enough.

**Benefits:** Adding it not only neutralises the stimulating effect of caffeine, but also improves blood circulation and helps lower cholesterol levels.

**Spicy Ginger:** Ginger adds a bit of spiciness and tanginess, which is perfect to give you the kick you need early in the morning. Add a few slices of ginger root or ground ginger to your early morning coffee.

**Benefits:** Ginger is digestive and treats stomach bloating. It is soothing on the stomach, and calms down a sore throat.

**Hazy nuts:** Want the flavour of nuts without the calories? Add a little hazelnut oil to your cup of coffee. The oil is strong, so go as per your liking.

**Benefits:** Hazelnut oil will give your coffee a smoky flavour. It contains Vitamin E, which is good for skin and hair. The oil is easily absorbed by the body and is a great antioxidant.

**Cooling peppermint:** Peppermint oil is pure fun when added to coffee, as it leaves one refreshed. Add a few drops of peppermint oil to your brew; it can be a bit strong in high doses. After a tiring day, a peppermint coffee is the ideal coffee to help you destress.

**Benefits:** Peppermint oil helps in fighting bad breath, and is rich in iron and magnesium.

**Good old vanilla:** Love that vanilla flavour from your childhood? Add a few drops of vanilla extract to your coffee pot or add vanilla beans to your grounded coffee beans, so the flavour infuses well with your coffee.

**Benefits:** Vanilla extract is a cognitive enhancer. It reduces hunger pangs and helps to relieve stress.

### **Food for thought: Demystifying your dinner**



What would you pick if you had to choose your last meal? Well, most of us would go for a big helping of fries, our favourite pizza, or even a big bowl of ice-cream. Coming back to real life, when it comes to the last meal of the day, many of us are in a fix. Is it imperative to eat dinner early? What can one have for a cheat meal? We asked experts to help us bust certain myths.

### **Is dinner the most important?**

It is as essential as all meals, if not more. “Every meal is important, as eating on time regulates the basal metabolic rate, which helps the body to stay active. Dinner is crucial because it is our last meal of the day, and the body goes into relaxation mode after that. So, keep it easy-to-digest and light,”

says nutritionist Preeti Seth. “Since the next meal will only be seven-eight hours later, dinner becomes important. It should provide essential nutrients for optimal bodily function and metabolic rate. It also keeps your blood sugar and insulin levels stable while you are resting,” says nutritionist Shilpa Mittal.

### **Is it true that dinner should always be early?**

Early dinner rings worrisome for a lot of us thanks to a fast-paced lifestyle. “It’s okay to eat after dark. But if you eat a heavy dinner, you’re not as likely to get rid of those calories before you turn in. Eating too close to bedtime increases blood sugar and insulin, which causes you to have a hard time falling asleep. Therefore, the last meal should be the lightest of the day, and should be eaten at least three hours before going to sleep,” recommends fitness expert Kiran Sawhney. “Post-dinner desserts can send blood sugar soaring right before bed, and can lower levels of the hormone melatonin, which helps you feel relaxed. Waning levels can make it harder to fall asleep. A boost of energy from dinner can act as a short-lived stimulant, making you feel more awake after a meal. So, optimal time is important,” she adds.

### **What kind of nutrition is mandatory for a healthy dinner?**

“A balance of carbs, proteins, healthy fats, vitamins and minerals is vital. Dinner should be rich in fibre and complex carbs. Avoid heavy, oily and fried foods, farsan, desserts and sweets.” says Shilpa Mittal. Preeti Seth adds: “One should consume good quantity of salads. A light digestible high-fibre diet must be had to stay healthy.”

## **What if I get hungry again?**

Midnight hunger pangs are a real thing, especially if you ate an early dinner. So what can one go for? “Popcorn, which is thought to be bad. But one serving is low in calories, has antioxidants, whole grains and fibre to keep you full. Also, yoghurt and almonds are good too,” says Kiran Sawhney. “Have milk at bedtime. One can also have fruits, almonds or walnuts. Cereals like muesli, wheat flakes are okay,” suggests Preeti.

## **To get more from your gym, try beetroot juice to keep going**



Here is another reason why you should look at beetroot more seriously from now. Research suggests that drinking high nitrate beetroot juice improves both sprint performance and decision-making ability of players during team sports such as rugby and football, according to a new study. "This research is a really exciting landmark in the work conducted on nitrate supplementation so far," said lead researcher Chris Thompson from University of Exeter in England.

"These new results suggest that beetroot juice could improve both physical performance and decision-making during team sports," said Andrew Jones,



professor at University of Exeter. In an earlier study, the researchers found that regular beetroot juice drinks can help people to exercise for 16% longer.

In the latest study, 16 male team sport players consumed 140 ml of high nitrate beetroot juice for seven days. The participants carried out the same exercise tests after drinking nitrate-rich beetroot juice and again after drinking a placebo version with the nitrate stripped out.

Researchers found consuming the nitrate-rich version resulted in an improvement in both sprint performance (3.5%) and speed of making decisions (3%) without hindering decision accuracy. "The improvement we found may seem small, but it is likely to provide a meaningful advantage to the athlete on the sports field," Thompson said.

"It could mean that team sport players are able to make those important decisions faster and cover more ground than their opponents in the seconds when it matters most," Thompson said. The research has identified that high dietary nitrate content in beetroot juice interacts with enzymes in saliva to generate nitric oxide in the blood system. Nitric oxide is a vasodilator that increases the flow of blood and oxygen to the muscles, thereby boosting strength and endurance. The study was published in the European Journal of Applied Physiology.



## THE TIMES OF INDIA

### State to encourage horticulture on one lakh hectare land

Maharashtra state revenue and agriculture minister Eknath Khadase said that more than one lakh hectare area in the state will be used for horticulture with help from Mahatma Gandhi National Rural Employment Guarantee scheme.

Khadase said, "The farmers from water scarcity hit areas need to get an alternative source of income. They need to get an option for earning some money and hence horticulture will be of use to them."

He said, "The foodgrain crops are not fetching much to the farmers mainly because of the market forces and various restrictions. If a section of the available land is used for horticulture to grow fruits like guava, pomegranate, mango, chikoo it will help in earning more. The land between the horticulture trees can be used for vegetables cultivation. Thus, a farmer will have some earning through vegetables, some from the horticulture and rest from his routine main crop. It could be either cash or foodgrain crops."

The MNREGS will help to create more jobs for people who will be used for digging and levelling of the land for horticulture. The landless as well as marginal farmers can work on it and earn while major farmers will get labour in their villages through the scheme. The government is also going to fund the farmers participating in the horticulture scheme so that they can bear the early expenses of watering, using pesticides and fertilisers for better growth, he said.

## THE HINDU **BusinessLine**

### **Rabi crop output seen rising to 132.78 million tonnes**

Despite poor monsoon the production of Rabi crops is seen at 132.78 million tonnes in the current crop year, versus 130.75 million tonnes a year ago. Wheat, chana, oilseeds are the major Rabi crops

The Centre on Tuesday said that production of Rabi crops will be about 1.6 per cent higher at 132.78 million tonnes (mt) in 2015-16 compared with 130.75 mt produced last crop year (July-June).

Speaking on the sidelines of the 'Rabi Conference' here on Tuesday, Agriculture Minister Radha Mohan Singh said his Ministry was confident that there will be no shortfall in Rabi output.



### **Soil moisture improves**

The winter cropping season accounts for 51 per cent of total foodgrain production in India.

“The rainfall deficit is currently at 14 per cent, which is worse than last year. However, the overall crop area during the Kharif season is higher than last year. We have also had good rain over the past few days and this will improve soil moisture for Rabi crops,” said Singh.

### **Rainfall deficit**

According to the India Meteorological Department data, the rainfall deficit between June 1 and September 21 stood at 14 per cent due to successive shortfalls in July and August after an excess in June.

Rainfall has been steady in the first three weeks of September, first in the South Peninsula, which had been the most deprived of precipitation through the monsoon, and then Central and North India.

### **Duty on pulses**

“Crop coverage under Kharif cereals as on September is 54.94 million hectares, more than the normal for the corresponding week of 2014-15,” said Singh. He added that the Ministry has proposed an import duty on pulses for Indian farmers to receive remunerative prices.

There is no import duty on pulses at present and officials said that a 10 per cent duty had been suggested.

“We will procure pulses the same way rice and wheat are lifted,” Singh said. The Ministry is targeting 4 per cent growth in agriculture and allied sectors this fiscal, after recording just 0.2 per cent growth in the category last year.

### **US may not give India time to lift ban on poultry imports**

India is finding it difficult to convince the US to grant it a year and a half — the maximum time allowed for implementation of World Trade Organisation (WTO) panel verdicts — to remove restrictions on the import of poultry from the country.

Earlier this month, in a meeting between officials from the two countries in Geneva, agreement over a reasonable duration could not be reached, a Commerce Ministry official told *BusinessLine*. If both the nations fail to reach a consensus, the matter will be referred for arbitration, following which the arbiter will determine the period of implementation.

The US has been insisting that the ruling should be implemented immediately since it required a single notification from the Indian government, the official said.

It is important for India to postpone implementation as long as possible as cheap chicken legs from the US are likely to make a big dent in the business of the local poultry industry.

India’s four lakh-plus poultry farmers, who produce an estimated 3.5 million tonnes every year, could lose up to 40 per cent of their domestic market once US products start flowing in, according to industry estimates.

A delay would also give the Centre time to come up with more valid import restrictions on US poultry, which the local industry has been working on for some time. The Department of Animal Husbandry, Dairying & Fisheries, together with poultry associations, is examining US practices that may not be acceptable in India, such as giving genetically modified feed to chicken or keeping meat frozen for long periods, to see if these could be used for restricting imports on health grounds.

“We have explained to the poultry industry that any restrictions to be imposed on imported chicken on health grounds need to be backed by credible international organisations so that they can’t be challenged easily at the WTO,” the official said.

Last November, a WTO panel had ruled that India’s ban on US poultry product imports flouted global norms. India appealed against the verdict in January. The WTO Appellate Body, however, upheld the panel’s findings that India’s avian influenza measures were neither based on, nor conformed to, the relevant international standards.

### **US to decide**

It is now up to the US to decide how much time India should be given to remove the ban. The WTO allows a maximum of 15 months for implementation of verdicts and up to 18 months in case of ‘exceptional circumstances’. New Delhi had allowed Washington 18 months to implement the verdict against countervailing duties imposed by the US on steel imports from India.

“It is not strictly a case of quid pro quo as all cases differ in their character. But, we hope that as a sign of courtesy and goodwill, we too are allowed the maximum period for implementing the decision on poultry,” the official said.

### **Groundnut, cotton oils slip on absence of bulk buying**

Prospect of higher production of groundnut pulled down the price of groundnut oil on Tuesday. Moreover, weak demand from domestic brands and stockists also supported the oil price to decline.

Cotton oil also traded weak on limited buying.

Groundnut oil declined by Rs. 10 to Rs. 1,075-80 per 10 kg, Jamnagar line telia tin was down Rs. 20 to Rs. 1,650-60 per 15 kg and groundnut oil new tin was flat at Rs. 1,865-70 per 15 kg. Only one tanker of groundnut oil was traded here.

Washed cotton oil lost Rs. 5 to Rs. 590-593 per 10 kg and cotton oil new tin stood at Rs. 1,040-60 per 15 kg. About 10 tankers of cotton oil traded here.

# Business Standard

Noodle makers claw back with new launches



After withdrawing Top Ramen, India's third-largest instant [noodle](#) brand, in June this year, its maker [Indo-Nissin Foods](#) has relaunched the product. This was conveyed by the company in full-page advertisements in Mumbai and Delhi on Tuesday, using the occasion to not only launch new variants such as atta and oats noodles, but also drive home the message of safety. At the same time, Indo-Nissin invited interested distributors to contact the company at the earliest.

The move by Indo-Nissin comes as rival Nestlé India gears up to present the findings of the re-test conducted on [Maggi](#) noodle samples to the Bombay High Court. The latter had given Nestlé six weeks to conduct the re-tests in its order dated August 13. The court is expected to give its verdict on the re-tests next month. Nestlé is internally working on a possible end-of-the-year relaunch of Maggi, implying that rival players have a small window of two months available to them to consolidate their position. "With Maggi not there, most other players are trying to grab as much of the instant noodle pie," said Abneesh Roy, associate director, research, institutional equities, Edelweiss.

A month ago, the country's second-largest instant noodle brand Sunfeast Yippee! from ITC had a 360-degree campaign that attempted to reassure consumers of its safety. This came in the wake of incidents of alleged contamination of Yippee noodle samples in states such as Gujarat and Uttar Pradesh, which ITC vehemently denied. While the two state food regulators were unable to substantiate their claims, negative publicity forced the



company to hit back with an all-round campaign targeting consumers as well as retailers.

“There is an atmosphere of distrust,” ITC's president (FMCG business) [Sanjiv Puri](#) had said earlier. “This trust deficit will have to be bridged,” he said. This point was also endorsed by Nestlé India's managing director [Suresh Narayanan](#) in a recent interaction, indicating the recall and ban of Maggi had not only hit the brand, but also taken a toll on the company. Nestlé India reported its first quarterly loss in 17 years for the three months ended June 2015.

Taking advantage of all this, Baba Ramdev's Patanjali Ayurved recently launched an atta noodle, playing on the health and wellness platform. According to analysts, winning back consumers' trust in instant noodles won't be easy for any player. “It will take time for consumers to gain confidence in the category,” said an executive from a top consumer goods company.

Prior to the Maggi ban, the instant noodle market in India stood at around Rs 3,500 crore, according to industry estimates, growing at a clip of around 15 per cent a year. After the ban, Rs 2,500 crore was straight away wiped out from the market. This was because Maggi noodles, which contributed 25-26 per cent to Nestlé India's Rs 9,800-crore topline was of that size. Banning it meant the category shrunk by that amount, since there were no sales of Maggi.

[Onion prices may fall 20% in two weeks](#)



Onion prices are likely to fall 20 per cent in two weeks when the new crop from Saurashtra begins arriving in markets.

Onion prices have softened 15 per cent this month following raids on hoarders in Nashik, the national hub for production and trade.

To discourage exports, the commerce ministry raised the minimum export price of onion to \$700 a tonne on August 28, over \$300 higher than the prevailing price in importing countries. The government also allowed MMTC to import 10,000 tonnes of onion, which is expected to arrive in October.

“These efforts helped cool onion prices. We see a 15-20 per cent fall in the next couple of weeks as the new crop arrives in south India. The impact will be felt when harvesting of the kharif crop starts in two weeks in Gujarat,” said Ajit Shah, president of the Horticulture Exporters’ Association.

The National Horticulture Research and Development Foundation reported a Rs 500 decline this month in onion prices to Rs 3,900 a quintal in Maharashtra’s Lasalgaon mandi, Asia’s largest onion market. Pre-harvested crops from the surrounding regions of Nashik were selling at Rs 2,000-2,500 a quintal. Large stockists in the state also pushed inventory into trade amid raids.


“There is no possibility of prices rising as the new crop has started coming in. A huge quantity of matured crop is coming into Bengaluru and Hubballi in Karnataka. In the next few weeks supply from Gujarat and Maharashtra will start,” said R P Gupta, director, National Horticulture Research and Development Foundation.

Onion supply to mandis in Karnataka rose as farmers evacuated fields to sow rabi crops. Karnataka supplies nearly 50 per cent of the early kharif onion. The early and late kharif varieties contribute 20 per cent each of India’s annual onion production. The other 60 per cent comes in from the rabi crop. India’s annual onion production is estimated at 19 million tonnes.

According to the National Horticulture Research and Development Foundation (NHRDF), onion supply to the Bengaluru mandi rose to 5,179 tonnes on Monday from 3,424 tonnes on September 1. This pulled down prices to Rs 2,789 a quintal from Rs 2,858.

“The latest spell of rain has raised crop prospects in Maharashtra as onion bulbs are maturing. Onion production will remain up this season in Maharashtra,” said Atul Shah, director, Agriculture Produce Markets Committee (Pimpalgaon).

**A DECLINING TREND**  
Onion prices have softened 15% this month



	Arrivals (tonnes)			Price (₹/quintal)		
	Sep 01	Sep 21	Chg (%)	Sep 01	Sep 21	Chg (%)
Mumbai	738	1,460	97.83	5,000	4,050	-19.00
Lasalgaon	213	187	-12.21	4,400	3,800	-13.64
Hubballi	440	1,331	202.50	1,950	1,800	-7.69
Chennai	550	550	0.00	5,500	5,200	-5.45
Bengaluru	3,424	5,179	51.26	2,858	2,786	-2.52
Delhi	861	768	-10.80	3,892	3,826	-1.70
Kolkata	400	352	-12.00	4,375	4,875	11.43

Source: NHRDF