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THE HINDU

Rs.3,168 crore for new capital of A.P.



Describing the consent of farmers, to part with their land for the new capital project, as a “historical event,” the Andhra Pradesh Budget for 2015-16 has set aside Rs.3,168 crore towards the compensation.

Announcing this in his Budget speech, Finance Minister Yanamala Ramakrishnudu said the government “gratefully acknowledges their contribution.” Funds were being released to the Capital Region Development Authority for making payments to farmers, he added.

He said that the total land required for the new capital is being procured by obtaining consent from the land owners. The requirement is 33,252 acres of which 87 per cent of the owners have given consent for pooling their land.

50% for common infrastructure

As per the plan, 50 per cent of the total land is to be used for common infrastructure for the capital city, he said, adding the standard of infrastructure will be state of the art. About 25 per cent of the land is to be returned to the land owners in the form of developed reconstituted plots.

This would leave about 7,000 acres with the State for constructing the capital complex as well as bringing investments to provide sustainable jobs for the residents of the capital city. “It is planned to return the developed land to [the] land owners, construct the capital complex and

bring the threshold level of jobs which will make the city self-sustaining over the next three years, the Minister said.

Punjab to launch new solar power scheme

The Punjab Government would soon launch a unique 'farm level solar power generation scheme' to offer land-owning farmers solar power projects ranging from 1 MW to 2.5 MW with the multiple purpose of generating clean energy, meeting the challenge of land scarcity as well as developing the entrepreneurial skill among them. To begin with, 500 MW power generation is being targeted under the scheme.

The scheme has been designed to meet the growing challenge of land scarcity, high cost of land, alarming ground water table situation and depleting soil health, Punjab New and Renewable Energy Minister Bikram Singh Majithia said on Sunday.

He said with the agricultural production reaching a saturation point in the State, the scheme would also provide land owners with another avenue to supplement their income.

Under the scheme, he said, any land-owning farmer having at least five acres or small farmers who would join hands to form a group would be able to apply. After allocation, the farmer can also form company/ firm/ society with his share, retaining a minimum of 51 per cent of the project. While Punjab Energy Development Agency would guide the farmers on setting up a company, documentation, power purchase agreement with Punjab State Power Corporation Limited and in getting the necessary technical support, Indian Renewable Energy Development Agency Limited and banks would be roped in to offer finance to the farmers for the projects, he said.

Pointing out that farmers will be given generic tariff as notified by the regulator, the Minister said farmers would also be able to use the power for their domestic or agricultural requirements.

Further, he said, farmers would be free to fix their solar panels in such a way that they are able to use their land for agricultural purposes also – such as for the cultivation of vegetables, flowers, herbal bushes, turmeric, mushroom and other crops suitable for cultivation in shade.

‘Agri leaders’ plough ahead



Krishana Yadav of Bajghera village here recalls how her family used to sell vegetables in a market until a few years ago. This was before she ventured into food processing. Today, she manufactures various kinds of pickles and 153 of her products are sold in several malls in different cities. She not just makes a handsome living, but also gives direct or indirect employment to about 400 women.

And Ms. Yadav is not alone. Several farmers, who have turned their fortunes around, are participating in the three-day Agri Summit at Leisure Valley Ground here. The State government calls them “agri leaders” for daring to experiment in their field and abandon traditional methods of farming. These farmers have adopted modern farming as per the demands of the market and several of them earn lakhs of rupees per annum. A separate farmers’ pavilion at the summit is reserved for these “agri leaders” to showcase their products. This new generation of farmers seems keen to experiment with new techniques to make agriculture profitable. In fact, even the educated are taking to agriculture.

One such farmer is Hisar resident Vikram, who grows strawberries. Manpal and Shakti Rajan of Jhajjar too have experimented with the techniques. Mr. Rajan, a graduate, says he owns three acres of land and has erected a polyhouse on 8,000 sq m. He belongs to Chamanpura, a place from where vegetables like cherry tomato, red cabbage, broccoli and squash are sent to different parts of the country. In his three acres, Mr. Rajan produces 400 tonne of vegetables per year and earns Rs. 1 crore from exporting these. He has also been to Israel and China to study new agricultural techniques. According to him, farming in a polyhouse is cheaper than using traditional methods, and one can produce crops or vegetables as per market demands.

Manpal of Malikpur said he was motivated by his family to start bee-keeping. He began with 28 boxes and 280 colonies a decade ago. Today, he produces 400 quintal of honey, from which he earns Rs. 50 lakh a year. He said many customers approach him for pure honey, which boasts of medicinal value, because the quality of honey available in the market is not reliable.

‘Electricity supply to pumpsets should not be disrupted’

Siddanagowda Policepatil, president of Yadgir Zilla Panchayat, has cautioned the officials of Gulbarga Electricity Supply Company in Yadgir that electricity supply to the pumpsets which are supplying drinking water to the rural areas should not be disrupted during the summer season.

Chairing the monthly meeting of the Karnataka Development Programme (KDP) review committee held at Zilla Panchayat auditorium in Yadgir recently, Mr. Policepatil has suggested to Gescom officials that defunct electrical power transformers, if any identified, be replaced immediately and ensure that electricity supply to the pumpsets was not disrupted due to transformer related issues.

During a discussion with officials of Agriculture Department, Mr. Policepatil said that the Zilla Panchayat will request the State government to release compensation to the farmers whose jowar crop was damaged by unseasonal rains recently. Therefore, officials should submit crop damage reports immediately, he added.

Chetana Patil, Joint Director of Agriculture Department, has said that the average rainfall that has been received by the district was 37.8 mm and according to eyesight survey conducted by the officials, the jowar crop in 578 hectares of the total sown area of 41,800 hectares, has been damaged. A detailed assessment on crop losses report would be submitted at the earliest, she added.

Dr. Patil informed the house that loss by the unseasonal rain was minimal as more than 90 per cent of harvesting had been completed till rain was received.

Mr. Policepatil and P. Sunilkumar, Chief Executive Officer, who was present in the meeting, suggested the Family and Health Department officials to give top priority in providing medical treatment to the patients suffering from swine flu.

KVASU to launch development projects

The Kerala Veterinary and Animal Sciences University (KVASU) is preparing to launch various development projects during 2015-16, including the setting up of three poultry hospitals and doctoral programmes in six disciplines in bio-sciences and B.Tech (Dairy Science and Technology) courses.

Talking to *The Hindu* after presenting the university budget for 2015-16 on Saturday, Vice Chancellor B. Ashok said the total budget allocation of the university for the next fiscal would be Rs.204.05 crore, of which, 38 per cent would be utilised for infrastructure and farm development.

“Twenty-four per cent each of the allocation would be spent on education and research,” Dr. Ashok said adding that the university would launch technology-enabled courses such as poultry entrepreneurship, dairy entrepreneurship, organic farming, dog care and management, toxicologic pathology, food safety and quality assurance and therapeutic management of infectious diseases in pet animals.

Diploma course

The KVASU intends to start a diploma programme in Dairy Science on its Thiruvazhamkunnu and Thumbermuzhi campuses. Five schools of research would be established statutory bodies from the next academic year.

“We are expecting the accreditation of the National Accreditation Board for Testing and Calibration for more than 10 laboratories of the KVASU during this fiscal,” Dr. Ashok said. It would help in conducting various complex tests, including the tests relating to the Kysanur Forest Disease and Bird Flu. The university will establish three poultry hospitals in association with the Kerala State Poultry Development Corporation at Mannarkkad, Perumbavoor and Koothuparamba.

A separate tribal entrepreneurship training centre would be launched at Thiruvazhamkunnu. More number of revolving fund projects would be implemented to strengthen farming sector development in the State, he added.

Twenty-five veterinary service-cum-entrepreneurship centres would be established in the State in collaboration with the Malabar Regional Co-operative Milk Producers’ Union.

‘The KVASU is also exploring innovative technology and options to bring spectacular growth in the livestock sector of the State. More

number of international collaborations will be pursued during the forthcoming financial year.

The KVASU has also joined as one of the global consortium members on 'One Agriculture - One Science' programme to promote new generation agriculture education and research, Dr. Ashok added.

Government aims to turn State green: Pocharam



Minister for Agriculture Pocharam Srinivas Reddy on Sunday launched 'Mission Kakatiya' in Varni mandal by attending the ground breaking ceremony at a local tank.

Speaking on the occasion, he said that the government aims to turn the State green by renovating 45,000 and plus tanks. In the first phase, a total of 9,500 tanks would be restored in the coming financial year, while others would be restored in next four years, he said.

Maintaining that this ambitious project will be executed transparently, the Minister said that corrupt practices and irregularities in its implementation will not be tolerated. In the district, tenders were finalised for about 300 tanks out of the 700 to be undertaken in the first phase, he added.

Meanwhile, on Sunday, 'Mission Kakatiya' was launched in Balkonda constituency by legislator Vemula Prasanth Reddy.

Sangareddy Staff Reporter writes: Deputy Speaker M. Padma

Devender Reddy urged farmers to use the silt removed from tanks and fill them in the farms so that soil is rejuvenated.

Formally commencing 'Mission Kakatiya' at Rayinpally in Medak mandal, Ms Padma said that people should participate in the programme voluntarily. She has also laid foundation for various programmes in the constituency.

Adilabad Special Correspondent writes: Backward Classes and Forest Minister Jogu Ramanna saw in 'Mission Kakatiya' a tremendous scope for all-round development of villages.

He said if farmers begin using nutrient rich silt from local tanks in their fields, there will be no need for them to use chemical fertilizer.

Launching the ambitious programme at Oora cheruvu tank at Paddapet in Dandepalli mandal, the Minister said the government had realised the need for having local water sources for irrigation and hence took up the programme. He said tanks will eventually become the lifeline for the farming community during the launch of desiltation works in Pedda cheruvu tank of Tosham in Gudihatnoor mandal and Chinna cheruvu tank in Tantoli in Adilabad mandal.

Housing and Endowment Minister A. Indrakaran Reddy also launched the programme works at Tummala cheruvu tank in Yellapally of Nirmal mandal, Chathakunta tank at Wanalpahad in Bhainsa, and Rajanna cheruvu tank in Nachan Yellapur of Kadem mandal. He said farmers should come forward to lift the silt cleaned from tank beds.

Karimnagar Special Correspondent writes: Minister for Finance and Civil Supplies Etala Rajender launched the programme works in Mogilipalem village of Thimmapur mandal.

Speaking on the occasion, he said that the State government will bring back the lost glory to the villages by removing silt in the tanks and transform the rural economy. Calling upon farmers to use the silt from the tanks in their fields for better harvest, he said that the government would remove silt from all the tanks in the State within three years.

Zilla Parishad chairperson Tula Uma said that the revival of tanks would bring back lost glory to the villages. Manakondur legislator and State Cultural Council Chairman Rasamayi Balkishan said that they will revive 53 tanks in Manakondur Assembly segment and called upon people to involve themselves in the noble cause.

Collector Neetu Kumari Prasad said that the government had taken up the project as a prestigious one to transform villages on all fronts. She said that they are conducting Sadarem camps at the government headquarters

hospital in Karimnagar town on all Fridays for the benefit of physically challenged persons.

Existing system of paddy procurement will be continued, says Chandy

Seeking to allay the concerns of paddy farmers, Chief Minister Oommen Chandy has assured that the existing system of paddy procurement will not be discontinued.

Launching the harvest of the pancha crop at the Chithira Lake paddy fields in Kainakary on Sunday, Mr. Chandy said that an allocation of Rs. 300 crore has been made in the State budget for paddy procurement that was being undertaken at a rate of Rs. 19 per kg.

“While the Centre provided Rs. 13.60 per kg for paddy procured, the remaining amount was disbursed by the State government as subsidy. The burden borne by the State accounted for Rs. 300 crore annually.

Considering its financial limitations, the government could not afford to extend the subsidy any further. However, the Central government has been requested to hike the price being provided for paddy,” he said.

Mr. Chandy added that the promotion of neera production has worked wonders for the coconut sector of the State. According to him, every coconut tree has been bringing huge returns of up to Rs. 3,000 per month for the farmers. Such initiatives are expected to transform agriculture into viable sources of income for the farming community, he said.

He also called for reviving paddy cultivation in the adjacent Rani Lake fields during the current year. The Chief Minister also directed the district administration to pursue options in introducing a collective model of farming in the Chithira fields. The technique, if found successful, could become a model to emulate for the other parts of the State, he said.

Presiding over the function, Agriculture Minister K.P. Mohanan directed the District Collector to convene a meeting to assess the ongoing harvest activities. Speaking on the occasion,

District Collector N. Padmakumar said that the Supplyco will undertake the procurement of paddy harvested from the Chithira fields. The government agency had refused to procure paddy initially. Around 600-700 metric tonne of paddy was expected from the nearly 100 hectares of cultivated field.

Farmers' grievances meet on March 20

The monthly farmers' grievance redressal meeting will be held on March 20.

The Collector will chair the meeting that will be attended by officials from departments including agriculture, horticulture, agriculture engineering, agriculture marketing, sericulture, fisheries, animal husbandry, cooperative sugar mills, cooperatives, water resources organisation, forest and pollution control board. Farmers will also be informed about the action taken on petitions that were submitted last month. The meeting will commence at 10.30 a.m. at the Collectorate, a release ssaid. — Staff Reporter

The 'golden daughter' of a farming family



All that this poor farming family from Doddaballapur taluk has is one acre of land which fetches them just Rs. 11,000 a year.

But, they have a 'golden daughter'. Geetha N., daughter of Narasimha Murthy and Chikkathayamma, graduated with a record number of 13 gold medals at the convocation of the University of Agricultural Sciences-Bangalore here on Saturday.

"My parents were not in a position to bear my educational expenses when I got a seat for an agricultural course. So I took an educational loan to support my studies," says Geetha, who is now pursuing her post-graduate studies in Agricultural Genetics and Plant Breeding with a fellowship from the Indian Council of Agricultural Research.

Excitedly showing her parents the box of gold medals, Geetha said, "Though my parents did not have money, they did everything for me to excel in studies and I owe my success to them."

Having experienced the difficulties of a marginal farming family, her dream is to become a researcher in the field of genetics and plant breeding in a bid to do something good for farmers in distress. “I am pained to see farmers in distress, especially owing to crash in prices. I want to do something for them,” she said.

Geetha also has plans to set up a non-governmental organisation to help farmers. “Please do not quit farming as that is our backbone,” is her plea to youth who quit agriculture to move to cities in search of menial jobs. Similarly, A.P.-based Kundur Bharath, who graduated with seven gold medals, also hails from a farming family. He too wants to serve the farming community by becoming a researcher.

Andhra apples to hit market by next year



Andhra apples will be in the market by 2016. An experiment of growing apples in the Visakha Agency area where the temperature is low has proved a success.

Sixteen apple saplings were planted on the premises of Regional Agriculture Research Station of Dr. N.G. Ranga AP Agriculture University at Chintapalli and 10 at Lambasingi, 15 km away (which records 0 degree temperature on some days during winter) on January 24 last year to examine if the chilly weather of the Agency, which encompasses tall hill ranges covered with forests, is suitable to grow apples.

Director of CCMB Dr. Ch. Mohana Rao took the initiative in the experiment.

Chief Professor of Centre for Cellular and Molecular Biology, Hyderabad, Ramesh Agarwal and Senior Principal Scientist A. Veerabhadra Rao examined the apples plants at Chintapalli and Lambasingi on Saturday along with Scientist of RARS D. Sekhar and Extension Officer Babu Rao and found that the plants were growing in a healthy way.

“They also started flowering, which means that they will bear fruit. It is a 100 per cent success and by 2016 we can have Andhra apples in the market”, Dr. Ramesh Agarwal said. The climate here is similar to Florida’s conditions and even though the sun is bright during day time, the chilly condition during the night is helping the apple plants grow, he said.

CCMB on its own had started growing apples in a small way and the cultivation could be extended to a large scale like coffee crop, by going for 5,000 plants to 10,000 plants and for this the support of State Government is needed, he said.

Kiwi also a success

Chintapalli and Lambasingi have also been introduced to kiwi fruit cultivation on an experimental basis and these plants are also showing good growth, the CCMB scientists found after an examination of the plants.

Compensation to farmers soon: Khattar

Haryana Chief Minister Manohar Lal Khattar on Sunday said the State is carrying out an extensive survey of losses sustained by farmers due to unseasonal rain and within a month compensation would be paid to all the affected farmers.

Speaking at a Meet the Press programme organised by Chandigarh Press Club, he said for any natural calamity, the compensation is decided by the Centre.

He said while the Centre would be paying Rs 4,800 per acre for 100 per cent loss, Haryana would be paying Rs 5,000 per acre for 25-50 per cent loss; Rs 7,500 per acre for 50-75 per cent; and Rs 10,000 per acre for 75-100 per cent loss.

The former Haryana Chief Minister, Bhupinder Singh Hooda, has criticised the Manohar Lal Khattar government for ‘not doing enough’ for farmers.

Sprinklers to help enhance beauty of Ooty garden lawn

Come Summer, one of the most attractive sections of the 55-acre Government Botanical Garden here will look even more beautiful, thanks to a scheme now under implementation there.

Running along the left flank of the garden just across its threshold the section features the Fern House, also known as the McIvor House, the Glass House and a lawn. The galleries which display on the days of the

Annual Flower Show, about 15,000 pots with a variety of flowers also form part of the section.

With pop-up sprinklers now in the process of being laid in the section, the lawn is expected to wear a green carpet look before the ensuing season in this vacation destination enters its busy period.

Enquiries made by *The Hindu* revealed that a sum of Rs. 3 lakh had been provided by the Hill Area Development Programme to lay the sprinklers. Work is expected to finish in about a week.

Meanwhile, arrangements have been made by the Department of Horticulture for a meeting to finalise the dates of the 2015 Flower Show, Rose Show, Fruit Show etc.

Stating that it will be held here on Monday, The Nilgiris Collector P. Sankar said that the Director of Horticulture and Plantation Crops L. Sitherasanen will preside over the meeting.

Arrangements for the season are in progress, he said and added that they will pick up soon.

When asked about the road and other development works which were now under implementation, he said that they would be completed before April 15.

Farmers demand implementation of projects

Members of the Cauvery Surplus Water Action Committee submitted a petition to Minister for Highways and Minor Ports Edappadi K.

Palaniswami at Chinnappampatti village on Sunday demanding that projects to utilise surplus water from Mettur Dam be implemented.

Led by its coordinator R. Thambaiyah and committee secretary M. Velan, members said that farmers and the general public in the district, for the past 40 years, were demanding diversion of surplus water from 16-vent sluices, Ellis Saddle Bridge, in Stanley Reservoir in Mettur Dam to interlink with River Cauvery — Sarabanga — River Thirumanimutharu. They also demanded implementation of Thanadiyur — Moolakadu water scheme and Thoppaiyar scheme. They said that through the Thoppaiyar scheme, water bodies in Mecheri can be interlinked through the naturally available waterways that would benefit Tharamangalam.

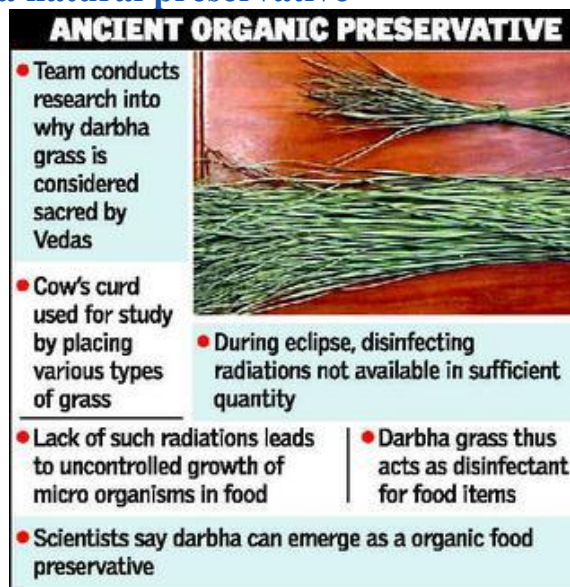
Modification

Members said that the government in 2013 announced that project would be implemented at a cost of Rs. 1,300 crore and sanctioned Rs. 50 lakh to carry out a study. Later it was said that the project was modified to pass through alternative route.

The members also pointed out that people in and around Mettur Dam were migrating to other places in search of jobs and implementation of the scheme would provide job opportunities.

They demanded that the issue be discussed in the Assembly and steps be taken to implement the projects.

‘Darbha’ grass, a natural preservative



Traditional tropical grass, Darbha, has been identified as an eco-friendly food preservative.

This finding was evolved in a research study undertaken jointly by the Centre for Nanotechnology and Advanced Biomaterials (CeNTAB) and the Centre for Advanced Research in Indian System of Medicine (CARISM) of the SASTRA University, Thanjavur, under the supervision of Dr. P. Meera and Dr. P. Brindha respectively.

Darbha (*Desmotachya bipinnata*) is a tropical grass considered a sacred material in Vedic scriptures and is said to purify the offerings during such rituals.

At the time of eclipse, people place that grass in food items that could ferment and once the eclipse ends the grass is removed.

A systematic research was conducted by the SASTRA University researchers, in which cow's curd was chosen as a food item that could ferment easily.

Five other tropical grass species, including lemon grass, Bermuda grass, and bamboo were chosen for comparison based on different levels of antibiotic properties and hydro phobicity.

Electron microscopy of different grasses revealed stunning nano-patterns and hierarchical nano or micro structures in darbha grass while they were. During eclipse, the wavelength and intensity of light radiations available on the earth's surface is altered. Especially, the blue and ultraviolet radiations, which are known for their natural disinfecting property, are not available in sufficient quantities during eclipse.

This leads to uncontrolled growth of micro-organisms in food products during eclipse and the food products are not suitable for consumption. Darbha was thus used as a natural disinfectant on specific occasions, say researchers at SASTRA University.

Further, the scientists say that darbha could be used as a natural food preservative in place of harmful chemical preservatives and the artificial surfaces mimicking the hierarchical nano patterns on the surface of darbha grass could find applications in health care where sterile conditions were required.



[Pusa farm institute headless since August](#)

The *Indian* Agricultural Research Institute (IARI), the cradle of Green Revolution in the country, is without a full-time head for over seven months now. The last director of IARI (*better* known as Pusa institute) H S Gupta retired on August 7.

The Agricultural Scientists Recruitment Board (ASRB) had, prior to Gupta's leaving, advertised for the position on June 14. But the interviews took place only on February 11 after being scheduled and cancelled thrice.

"It's over a month since the interviews were conducted, yet there's no sign of anyone getting appointed. This is unprecedented", said a senior IARI scientist.

Since Gupta's retirement, IARI has had two acting directors — K Vijayaraghavan (former joint director of extension, who superannuated on September 30) and Ravinder Kaur (project director of the institute's Water *Technology* Centre, holding charge from October 1).

“I am concerned as IARI is too important an institution. It requires dynamic leadership and I hope they choose the right person soon. The ASRB is meant to be an autonomous *body* for selection of scientists at *all Indian* Council of Agricultural Research institutes,” eminent agricultural scientist M S Swaminathan said.

Swaminathan was IARI’s director from 1966 to 1972, when the popular Kalyan Sona and Sonalika wheat varieties, selected from semi-dwarf lines developed by legendary breeder Norman Borlaug, launched India’s Green Revolution.

“We need climate-smart agriculture today to improve our farmers’ coping capacity against the vagaries of nature. The PM, too, has talked of More Crop, Per Drop. But this cannot happen without adequate scientific support, which is where IARI has a huge role in terms of research as well as contributing high-level human resources through its post-graduate school”, he added.

ICAR director-general S Ayyappan said the IARI director’s selection “is a regular process of recruitment through ASRB”. He, however, refused to comment on the unusual delay in appointment and stated, “it will happen soon”.

Among those interviewed for the post were K V Prabhu, K C Bansal and N K Singh.

Prabhu, currently IARI’s joint director of research, is chief breeder of HD-2967 (a high-yielding wheat grown in a record-breaking 8 million hectares area this year) and also the recently released HD-3086 wheat variety.]

Bansal heads National Bureau of Plant Genetic Resources, the world’s third largest gene bank with nearly 400,000 germplasm accessions of over 3,000 crops.

Singh, national professor at ICAR’s National Research Centre on Plant Biotechnology (NRCPB), is well-known for his work on sequencing the pigeon-pea genome in 2011—the first-ever such effort for any legume crop.

Others who were interviewed were former NRCPB director P Ananda Kumar, Rajendra Central Agricultural University (Bihar) V-C R K Mittal and ICAR assistant director-general M B Chetti.

Watch your lectin intake

Food has been recognised as a medicine. *Good food* is *medicine* and can help delay, prevent and at *times* treat diseases. Wrong *food* can make us unwell and sick. Several dietary constituents and nutrients are well established with their protective roles in health and disease. A relatively less talked about concept is the role of food as a messenger carrying information and detailed instructions for every gene and cell in the body. It enables them to repair, regenerate, restore, heal, harm or damage, depending on what you eat.

One such component of food is lectins. The word 'lectin' comes from the Latin word *legere*, meaning to pick out or to choose. This is exactly what lectins do. They are a type of proteins that choose and bind to carbohydrates on cell membranes and form complexes (glycol-conjugates) on the membranes. These are present in most plants, especially seeds, nuts, cereals, legumes, beans, potatoes, tubers and dairy. They are also present in small amounts in some fruits, vegetables and seafood. Lectins are also present in the human body to some extent.

Lectins, not to be confused with the endocrine hormone leptin, play a major role in health affecting immune functions, cell growth, cell death and body fat regulation. Human lectins in our bodies act protectively as part of our immune system. However, lectins consumed in food act as chemical messengers that can in fact bind to the carbohydrates (sugars) of cells in the gut and the blood cells, initiating an adverse inflammatory response. Lectins may cause gastro-intestinal problems—cramping, bloating, flatulence, hyperacidity, diarrhoea, nausea and vomiting. They are also implicated in food intolerances, inflammatory and auto-immune conditions such as rheumatoid arthritis. Other common manifestations of lectin induced damage include skin rashes, joint pains and even increased urinary infections. Many food allergies are actually immune system reactions to lectins.

Interestingly, lectins in food protect the seeds from micro-organisms, pests and insects. This is the reason why genetic modification of plants created a fluctuation in lectin content to develop pest-resistant varieties. In our bodies, lectins are not digested and we create antibodies against them.

Scientific literature shows that dietary lectins disrupt intestinal flora by reducing natural killer cells, the important defences against viruses and other invaders, thereby affecting our immune functions. Other mechanism affecting our health is their ability to influence inflammation



THE TIMES OF INDIA

Machines drive 90% of power in farming, humans' share drops to 5%

Silently, agriculture in India has gone through a far-reaching change in the past few decades. The share of human power available for carrying out the myriad operations in farming has shrunk to a mere 5% as has that of draught animals, the iconic oxen pulling the plough. More than 90% of the power is now drawn from mechanical sources: tractors and power tillers provide the bulk, 47%; electric motors 27% and diesel engines 16%.

These are the latest estimates thrown up by a study of farm mechanization done by C R Mehta, principal scientist, and his colleagues at the Central Institute of Agricultural Engineering, Bhopal.

Four decades ago, in 1971-72, 60% of the power was provided by humans and animals - 15% by farm labourers and 45% by animals. In 1991-92, this collective share had dropped to 26% (labour accounted for 9%). Tractors have made the biggest stride, from a mere 7% to 47%.

These shares are calculated using an average value of power that a human or a draught animal or any of the machines generate per unit of land, Mehta explained to TOI. An average human being, for instance, can yield 0.15 kilowatt power per hectare of land worked while a tractor can give 30.21kW. Mehta also pointed out that these are figures for power availability while actual consumption may be less.

‘Neem-coated urea to help soil, cut subsidy burden’

Urea, the Indian farmers' favourite fertilizer, is also the cause of big subsidy burden for the Centre. The fertilizer subsidy of the government has grown up to the tune of Rs 72,000 crore in the current Union budget. But increasing use of urea is known to be harmful for soil health. A solution to check urea use, or rather misuse, is being now seen in the form of Neem-coated urea.

"We have shifted to 45% of urea used to Neem-coated. This is the result of joint research of agriculture department and my ministry," claimed union minister of state for chemicals and fertilizers Hansraj Ahir. "Prime Minister Narendra Modi has now instructed that Neem-coated urea should be increased to 75% this year and 100% by next year," said Ahir, the Chandrapur MP.

"Besides other natural benefits of Neem which is a natural insecticide, the coating reduces evaporation rate of urea in soil. Thus, Neem-coated urea will reduce total usage of urea and bring substantial savings on subsidy. It will also generate employment in villages by way of Neem seeds collection and supply to urea factories," he added.

Another gain will be that Neem-coating will help check heavily subsidized urea's pilferage to chemical industry. With costly imports and ingredients for processing urea, one metric tonne's actual production cost is Rs 20,000, but thanks to subsidy, it is sold to farmers at Rs 5,600 a tonne," said Ahir. This cheaper urea finds way into the chemical industry for other uses or is also illegally shipped out to neighbouring nations for a better price. All this can be controlled by Neem-coating, claimed Ahir.

Ahir said the government is also striving to make available generic medicines at all government hospitals, right from district to PHC level. Besides, a scheme for pharmacy graduates to open generic medicines is also being launched in which one can avail government fund for starting the shop. With all such measures, the number of generic medical shops, that is currently a lowly 178, will be increased to 3,000 in the country in the next two years, said Ahir.

The BJP MP, who has been in news for more than five years for his active role in Parliament in exposing the coal blocks allocation scam (Coalgate) of the previous UPA government, said his stand has already been vindicated as "loot of the nation by giving coal blocks free to private players" has been stopped.

The Supreme Court cancelled all coal blocks allocation on September 24 last year and also imposed a recovery on those who extracted coal from allocated blocks, at the rate of Rs 295 per ton. The government's coffers have seen a revenue to the tune of Rs 3 lakh crore through fresh competitive bidding, Ahir said.

Adani plans 1,000MW solar power plant at Ramanathapuram

Tamil Nadu's solar power sector is set to get a shot in the arm with Adani Group, an infrastructure company with presence in diverse sectors including logistics, agriculture and power, planning to set up a 1,000MW solar plant in Ramanathapuram.

Highly placed sources, while confirming the deliberations between the company officials and the state government, said the preliminary talks

took place a week ago. "The deliberation was about setting up a 1,000MW solar park at Kamuthi in Ramanathapuram," said a source privy to the discussion. Industrial estimate is that production of one megawatt of solar power requires five acres of land, which makes it 5,000 acres for the proposed plant. The capital cost of solar photovoltaic plant is estimated at Rs 7 crore per MW.

Ramanathapuram, one of the backward and dry districts with poor rainfall and sizzling temperatures, along with neighboring Tuticorin and Tirunelveli are considered hot spots for setting up solar plants in the state.

"We are neither confirming nor denying the developments," a senior official in Adani Group told TOI. Terming TN's solar policy as the best, which can be emulated by other states, the official said it was a win-win situation for everyone. In February, Adani Enterprises signed a deal with the Rajasthan government to set up the country's largest solar park with a capacity to generate 10,000MW for a period of ten years, with an investment of Rs 40,000 crore.

Tamil Nadu unveiled its solar policy in 2012 with a view to generate 3,000MW of solar power by 2015, and increase the capacity by 1,000MW every following year. After months of legal hurdles, Tamil Nadu Electricity Regulatory Commission (TNERC) in September announced that TNEB would purchase solar power at Rs 7.01 per unit. "The state has signed up 12 power purchase agreements (PPA) for 145MW till last week. About 60 applications for 1,550MW have been cleared by the power utility. But the parties should pay security deposit and sign PPAs," an official said.

As the TNERC, in its comprehensive tariff order in September, proposed a one-year control period (i.e. tariff is valid till September 2015) due to volatile capital cost of solar modules, industry sources said the applicants were awaiting extension of the control period. "It is impossible to set up a mega photovoltaic project in six months, given the poor land bank with the applicants," said a spokesperson of an American power major. Tangedco has moved the commission for extension of tariff period till March next year, considering the fact that the developers will not be able to inject power before September.

Guide to good and bad foods



Instead of following diet plans at random, opt for a scientific yet natural approach towards foods which are healthy for you to eat. The cue lies in the fact that the closer a food is to its natural state, the better it is for you. For instance, fresh fruits and berries are great and will satisfy a craving for sweets.

Whole vegetables have lots of vitamins and minerals, so eat more green, orange and yellow vegetables. Steam them to retain the most nutritional value and be careful with sauces, they may be high in calories and fats that aren't good for you.

Avoid sugary snacks and pastries as well. An apple is good for you, an apple pie really isn't, at most times.

Stick to water, milk and 100 per cent fruit and vegetable juices as your main beverages and limit sugary soft drinks. Here's how you can get started by sorting out unhealthy and healthy foods.

Avoid unhealthy foods

- Battered and deep fried foods
- Sugary sodas

- Processed lunch meats
- Greasy snack chips
- White bread and refined pasta
- Most canned spaghetti and ravioli
- Sugary breakfast cereals

Go for healthy foods

- Green and brightly coloured vegetables
- Dark leafy greens and lettuce
- Fresh fruits and berries
- Nuts, dried fruits and healthy snacks
- Whole grain and brown breads and pasta
- Healthy cooking oils like canola and olive oils
- Low fat milk or soy beverages
- Nuts, seeds, and legumes.
- Large portions of fresh green foods in your daily meals can go a long way into keeping you fit.

THE HINDU **BusinessLine**

Not all farm incomes escape tax



Things as mundane as travelling, eating out, shopping, watching a movie, investing — everything requires you to shell out a share to the taxman. Yet there's one large slice of the economy which escapes taxes — agriculture. But not all kinds of agricultural income are exempt from tax.

Say, Ram is an agriculturist and derives some income from agriculture. He also owns lands and farm houses in the outskirts of a city as well as in his village.

Ram thinks the income generated from the agricultural land and farm houses is completely exempt from tax. But there are several aspects to be considered.

What is agri income?

The Income Tax Act defines agricultural income as any rent or revenue received from the land which is situated in India and used for agricultural purposes; any income generated from agricultural land by performing agricultural activities and income from a farm house.

To qualify for exemption, agricultural land must be situated within India. Ram's land meets this requirement.

Ram's income, if derived from agricultural activities, would be completely exempt from tax, regardless of the land being situated within the city limits or in a village. However, to claim tax exemption, his income must originate from agricultural activities, which are defined as basic operations such as sowing, planting and subsequent operations such as weeding, cutting and so on.

Merely performing weeding or cutting, without sowing or actually growing crops, may not constitute farm operations.

However, the term agriculture is sweeping enough to include all sorts of crops or products. Therefore, raising vegetables, fruits, grass, coffee, tea, tobacco and commercial crops such as cotton, jute, hemp all would fall within the ambit of 'agriculture'.

In some situations, where a person derives income from both agricultural as well as business activities, only the market value of the agricultural produce would be considered as agricultural income.

For instance, if Ram were to use his land to grow fruits and manufacture fruit jam from the produce, the market value of the fruits used to make the jam would be considered as agricultural income, but not the income from actually selling jam.

However, caution needs to be exercised about applying this provision, as products such as tea, coffee and rubber have special provisions in tax laws.

Income from farm houses would be exempt, provided the building is situated within the immediate vicinity of the land which is used for agricultural purposes.

Farm houses

The building is used as a dwelling house or store house and such land should either be assessed to land revenue or situated outside urban area.

Here, urban area means any area situated within the jurisdiction of a municipality or cantonment board having a population of not less than

10,000 or any area situated within certain specified distances (mentioned in the Act) from the local limits of any municipality or cantonment board. The urban area concept is relevant only in the case of income from farm house and not for other categories of agricultural income. In the case of other categories, the income would be exempt even if the land is situated in urban area.

Hence, it is important to evaluate the above criteria every year to determine whether the land would qualify as urban land or not. If the location of Ram's farm house falls within the above indicated limits or is not assessed to land revenue, the income generated out of the farm house would be taxable.

Calculation

Although farm income which meets these conditions is exempt from tax, income tax is first calculated on the total taxable income, including net agricultural income.

Income tax is then calculated on the basic exemption amount increased by the net agricultural income. The difference between the two is the tax payable on non-agricultural income.

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Fertiliser Ministry allows swapping of KG gas supplied to RCF units with R-LNG

The Fertiliser Ministry has allowed swapping of natural gas from the KG-D6 reserve being supplied to Rashtriya Chemicals and Fertilizers (RCF) units located in Maharashtra with regasified liquefied natural gas (R-LNG), thereby facilitating an additional supply of 2.2 mscmd to Andhra Pradesh and Telangana, according to an official release.

With the approval, around 450 MW can be generated by gas — independent power producers (IPPs) in Telangana getting 242 MW and Andhra Pradesh 208 MW, the release said.

The IPPs located in the two States have pipeline connectivity with RGTIL's East-West pipelines.

Currently, operational R-LNG terminals are located on the western coast.

East-West pipeline

“Even though East-West pipeline of RGTIL provides physical connectivity to eastern part but as communicated by RGTIL, it is not possible for R-LNG to flow from western parts of India to AP.

“Therefore, direct R-LNG supply to customers in AP and Telangana is not possible and can only be achieved through swapping of gas,” said the statement.

GAIL (India) will enter into contractual arrangements with RCF, RGTEL and IPPs located in the two States for the supply of R-LNG which “will help in mitigating the power shortage in Telangana which would benefit the farmers having 18.62 lakh pump sets in saving rabi crops” and unscheduled power cuts in both States could also be minimised.

Demand rises, so does the plight of mustard farmers



Economic theory holds that when supply is limited, prices tend to move up. But for 45-year-old Puran Singh of Mausampur village in Rajasthan’s Alwar district, his mustard crop gives him returns that do not fit into neat economic theory.

Demand for [mustard oil](#) is growing at almost 20 per cent a year, but seed prices rarely keep pace. At the best of times, [farmers](#) like Singh hope for a price of Rs 3,000-3,500 per quintal from mustard, with an off-season premium of Rs 400-500.

[Prices of mustard oil](#) moved up by around Rs 20-30 per litre since March 2014, according to government data. Mustard oil prices have been steadily climbing over the last few years but seed rates remain inelastic because of unabated adulteration.

"If the crop is wet, it fetches Rs 100-120 per quintal more than the market rate, but if it dries then we stand to lose that much as dry mustard is

lighter," Singh says. His field is divided equally between mustard and wheat, the two main crops grown during the winter rabi season.

"Wheat has more assured returns, but it requires more labour than mustard and also needs at least six bouts of watering. Mustard just needs one normal rain during winter," says Singh's wife, explaining why farmers in almost half of Rajasthan plant mustard during the rabi season.

In 2014-15, according to official data, India's mustard production is expected to be around 7.36 million tonnes, 1-1.2 million tonnes less than the previous year. The recent bout of rain is expected to lower the output further.

"The reason for the low correlation between mustard seed and oil prices is adulteration, which keeps oil supplies intact despite a drop in seed output," says Aswani Kumar of Agarwal Traders in Alwar's new market yard.

The real oil content in mustard is around 42 per cent, which means if the seed production is 7.36 million tonnes, the availability of pure mustard oil should be around 3-3.1 million tonnes. But, as Agarwal says, the actual oil available in the market is never less than 6 million tonnes a year. The difference is made up by mixing mustard oil with rice bran and palmolein in quantities far higher than specified by law. Rice bran and palmolein are the most common oil varieties mixed with mustard.

A Food Safety and Standards Authority of India (FSSAI) guideline from 1998 allows blending of rice bran and palmolein with mustard up to 25 per cent to make refined vegetable oil, but traders allege the blend is higher in most locally manufactured brands. "The local players do most of this mixing, which is why one finds mustard oil brands with every

possible name," Agarwal says.

Agarwal supplies mustard seed to oilseed processors like Adani Wilmar and P Mark. He says of the three or four railway wagons of mustard oil that leave Alwar every week for Assam, almost 60 per cent is adulterated. A railway wagon normally carries 40 boxes, each holding 4,000 tins of 15 litres of mustard oil. "We have complained several times to the authorities," Agarwal says. "Have any local brand tested in a recognised laboratory and I am sure none will pass," he adds.

Vivek Puri, managing director of Puri Oil Mills, says the health concern in mustard oil is from adulteration. "Even if loose edible oil sellers comply with food regulations and standards, there is no guarantee that the oil will remain unadulterated as it passes through several hands," Puri points out.

But this poor man's oil sells at over Rs 100 a litre and it is difficult to convince the man on the street to shift to packaged mustard oil. Puri suggests the creation of a mustard promotion board on the lines of the coconut and other development boards to promote the crop.

Ajeet Singh, another farmer in Alwar, has a simpler solution. "Mustard cannot always be the secondary rabi crop. If we get continuous power we can ensure good yield from both wheat and mustard," he says.

Wheat and mustard are the two main crops grown during the rabi season, sowing for which starts in November and the crop is harvested from February. Grown after the monsoon season, rabi crops are dependent on irrigation. In Singh's village, barely 300 km from Delhi, power is supplied for six hours either in the day or at night. "If we get at least 8-12

hours uninterrupted power, we can ensure good yields and better returns from mustard," Singh says.