

08.02.2016

THE HINDU

Reviving rural India

The issue of farmers and slow-paced agricultural growth poses a serious challenge to the state (“Going against the grain”, Feb.5). Several factors have caused unsatisfactory agricultural growth. As a result, a farmer is often trapped in a vicious circle of declining productivity and with no other avenues of employment. In the plan for a revival, cooperative farming can help. ICAR can also step in with cropping patterns and techniques suitable for specific climate patterns and soils. The Water and Land Management Institute can also provide effective watershed management techniques and training to farmers.

Ashutosh Dalal, *Aurangabad, Maharashtra*

As a son of a farmer and an agriculture graduate from rural India, I would like to say that droughts are not the sole reason for a decline in productivity. It has largely to do with mismanagement by farmers and their so-called governing bodies. The problem also lies in the structure of agribusiness which involves production, distribution and marketing. In all these three stages, little is controlled by a farmer. Cold storages and warehouses are also a dream.

Suraj Ashok Shirsath, *Ahmednagar, Maharashtra*

Crop diversification, organic farming and rain-fed agriculture must be brought into the mainstream. For this, there must be a strengthening of innovations and an understanding of how the agriculture sector is in crisis because of multiple actors working at cross purposes. Unfortunately, a number of government initiatives are knee-jerk reactions, with weak planning and monitoring. The ambitious solar pump set programme is one such example. All States are promoting it, without realising that this technology makes sense only when water is available at low depth and grid coverage is poor. Promoting it in the Deccan plateau or Rajasthan may not work since the farmer has to bear high upfront costs and handle maintenance issues.

Sreekumar N., Hyderabad

Indian policy lacks proper implementation resulting in less desired outcomes. For example, when it is known that chemical fertilizers gradually reduce soil fertility, one wonders why this is not made known to farmers. Meaningful skill-based jobs must be introduced at the village level.

Nikhil Sudhir Kothawade, Jalgaon, Maharashtra

Farmers' opposition may disrupt Handri Neeva works

They decline to part with 500 acres for the project



The farmers demand that the branch canal first feed the tanks under Palamaner limits before water goes to Kuppam. – File Photo

Work on the 143.9 km long Handri Neeva Kuppam Branch Canal (HNKBC) passing through eight mandals in tail-end Chittoor district has got a setback with the farmers in Palamaner Assembly constituency expressing objections to give their lands to the tune of over 500 acres for the project.

Their prime demand was that the branch canal should feed the tanks under Palamaner limits, before carrying water to Kuppam.

The canal works were officially grounded in the constituency on January 24, with a target to complete the project by August with an objective to provide drinking water to over 4 lakh population, and to feed 110 tanks in both Kuppam and Palamaner constituencies thereby, supporting agriculture in 6,300 acres.

As the branch canal work happens to be the promise of Chief Minister N. Chandrababu Naidu to the people of Kuppam (which he has been representing in the Assembly since 1989), the administrative sanctions were cleared for the project with an initial outlay of Rs. 468.53 crore.

However, the farmers in Palamaner have opposed thus raising doubts about completion of the project by August, as the process of land acquisition has not been completed and no talks were initiated with them.

Though, the officials said that the canal would feed 40 tanks in Palamaner, there is no governmental assurance on this.

The canal which commences at Appinapalle village of Peddapanjani mandal will be linked to Paramasamudram tank in Kuppam mandal, passing through a distance of 143.9 km. To carry the waters along the upland areas, the HNSS engineers had planned three lift schemes at Pasupattur, Krishnapuram and Adhinapalle.

HNSS Executive Engineer P.V. Rami Reddy speaking to *The Hindu* said that Joint Collector Bharath Narayan Gupta had initiated talks with the farmers with regard to land deals through mutual consent.

He said that instructions were issued to commence work at vital points coming under the government lands. “We have clearly mentioned in our Detailed Project Report that 40 tanks in Palamaner would be fed through the canal, and the farmers need not worry.”

The official further said that as against the total requirement of over 1500 acres, as for the immediate use, a proposal was submitted to the revenue authorities for 740 acres under land particulars of schedules (LPS). “At any cost, the canal works will be completed by August,” Mr Rami Reddy said.

Prices of essentials

State constitutes market intelligence panel

The State government has constituted a market intelligence committee to analyse prices of essential commodities and suggest market intervention measures to make them available at affordable rates.

The eight-member committee, headed by Special Chief Secretary to Government, Agriculture Department, will develop forecasting model, suggest robust strategies and logistics for procurement of commodities.

The other members include Director of Civil Supplies, VC and Managing Director, AP State Civil Supplies Corporation Limited, General Manager, FCI, AP, Commissioner of Marketing, Advisor to Government (Agriculture and Marketing), and Vice-Chairman, State Planning Board.

Cereals making slow comeback

Both production and consumption have gone up in Tamil Nadu



With more farmers in the State opting for coarse cereals and the resultant increase in production, Tamil Nadu has been chosen for the Centre’s Krishi Karman award this year.

In 2014-15, the State produced a record 40.75 lakh tonnes of coarse cereals that include ragi, maize and the minor millets.

In 2010-11, the production was only 15.58 lakh tonnes, said an official in the Agriculture Department.

“Several factors, including an increase in area under production, introduction of high-yield varieties, integrated pest management and agronomic planting practices, have led to increase in production,” he noted.

Coarse cereals are short-duration crops which do not require much water for irrigation. Though activists and farmers are happy about the increase in production, they say much more needs to be done to take them to a larger population.

The M.S.Swaminathan Research Foundation has been working with the tribal people in Kolli Hills in the area of climate smart nutri-cereals. “Millets are not only nutrition rich, but also climate resilient,” M.S.Swaminathan.

“In the past, our food basket was very wide, consisting not only wheat or rice but also a wide variety of millets - what is normally described as coarse cereals. Later, public procurement and distribution tended to be confined to rice and wheat. The noon-meal programme in schools also did not include the nutri-millets, he said.

“I got millets included in the National Food Security Act of 2013, so that there will be both the minimum support price and public procurement. This will help to widen the food basket and insulate farmers from a failure of crops under conditions of low rainfall and moisture stress,” Mr. Swaminathan said.

“With more and more people becoming health conscious, consumption of millets is on the rise. Compared to five years ago, consumption of cereals is far better despite the fact that millets are costly,” says Ananthoo of the Safe Food Alliance that has been campaigning for organic foods.

However, since the government is yet to implement any programme for propagation of millets, it is not reaching a larger section of the population. The neighbouring Karnataka government has introduced ragi and jowar through the public distribution system and Telengana and Orissa too have come out with plans, he points out.

Supply through PDS

Millet farmer and organics promoter Pamayan of Madurai suggested that the government consider supplying coarse cereals through the PDS in cities where awareness levels are higher.

“If more farmers have to take up coarse cereals, the government must extend the incentive of Rs. 2500 per acre to all districts. It should also ensure procurement from farmers at reasonable prices. Harvesting equipment is also needed for millets. Interesting recipes need to be developed to create a taste for such cereals,” he said.

The PDS focus in the State is on supply of rice, and the government is neither procuring nor supplying coarse cereals through the system. Official

sources said that cooperative stores are already selling such cereals procured from tribal areas.

Farm machineries and implements distributed

Farm machineries and implements estimated at Rs. 66.6 lakh were distributed among 107 beneficiaries by T.P. Poonachi, Minister for Khadi and Village Industries, here on Saturday.

Mr. Poonachi said the State government accorded priority for increasing farm productivity and the supply of machines at subsidised cost to farmers would help them overcome the problems caused by shortage of farm hands. He distributed power tillers and other implements under the National Agriculture Development Programme and other schemes.

Mr. Poonachi distributed assistive devices to 100 differently abled children who were identified through medical camps conducted under the Education for All Scheme. About 208 differently abled children have been identified, through medical camps held in all 16 unions, for supply of assistive devices estimated at Rs. 8.01 lakh in the district, he said.

R. Manoharan, Chief Whip, P. Kumar, MP, and K.S. Palanisamy, Collector, were present.

Soil health card mission makes steady progress

Soil Health Card Mission, which is aimed at assessing the soil health of landholdings of all farmers, is making a steady progress in Karur district.

As per the programme, soil health cards will be given to 1,46,051 farmers in the district in two years. It is planned to collect soil samples at 21,256 locations in all blocks.

Details such as nature of soil, level of nutrients, salinity, alkalinity, acidity, calcium, chances of soil health reclamation, potential crops and recommendation on the levels of macro, micro nutrients and biofertilizer will be analysed and printed in the cards.

Agriculture Department, which is the nodal agency for implementing the scheme, has so far distributed 17,059 soil health cards as against the target of 59,226 farmers in the first phase of scheme implementation.

Similarly, it has collected 10,346 soil samples as against the target of 8,284 soil samples for the current year.

Collector, T.P. Rajesh, who reviewed the progress of the scheme, told *The Hindu* that officials had been told to expedite the scheme to cover as many farmers as possible.

Soil samples would be collected in 83 villages so as to analyse the soil pattern and condition.

A total of 59,226 soil health cards would be given before the second week of March. Remaining cards would be distributed in 2016-17.

He said soil health card would educate the farmers about the kind of soil they have and the suitable crops. It would avoid excessive use of applying fertilizers.

Farmers upbeat about progress of farm producers' company

Kovilpatti-based company has established direct market link with NAFED, Chennai

Now, farmers are upbeat about the progress made by the Farm Producers' Company in Kovilpatti, which is catering to their needs with the key objective of eliminating middlemen and getting them a direct market link.

A total of 400 farmers were shareholders of the company, and crops such as millets and pulses were being procured directly from farmers at reasonable prices, P. Murugesan, chairman of the company and general secretary of Southern Dry Land Farmers' Association, Pudur, told *The Hindu* on Sunday. The company had got a dehusker machine sponsored by Krishi Vigyan Kendra, and dhal processor equipment provided with government subsidy.

Since there was a growing demand for 'kuthiraivali' (barnyard millet) among people now, five tonnes of kuthiraivali had been procured directly from the farmers. Hundred kg of the grain cost Rs. 2, 000. Currently,

harvesting of this crop was under way and the company had planned to procure 150 more tonnes.

This millet crop fetched a market price of Rs. 1, 800 per 100 kg of raw grain in January, 2015 and Rs. 2,500 in September, 2015. After dehusking, the company could get 50 kg of fine grain from 100 kg of raw grain. Hundred kg of the fine grain would be marketed at Rs. 4,000, including transportation cost, he said.

Kuthiraivali could grow on arid tracts, and the yield would be 6-8 quintals per acre. People who were health-conscious had started consuming minor millets in the form of value-added food items or drinks. Kuthiraivali had found a prominent place in most of departmental stores, he added.

Mr. Murugesan said that this farm producers' company had established a direct market link with National Agricultural Cooperative Marketing Federation of India (NAFED), Chennai, which had come forward to procure 200 tonnes of black gram.

NAFED representatives recently collected the crop samples at 20 villages in Ottapidaram, Kovilpatti and Vilathikulam areas, he added.

Workshop on native fish species at KUFOS

A two-day national workshop on conservation of native fishes will begin at the Kerala University of Fisheries and Ocean Studies on Monday.

The workshop, which is being organised by the Prof. Alikunhi Chair for Sustainable Aquaculture System functioning at KUFOS, is aimed at familiarising farmers with artificial breeding and seed production techniques.

The workshop is part of the project under the aegis of the Chair to popularise diversified aquaculture practices of native species such as snake heads, climbing perch, cat fishes, large barbs and ornamental varieties, said a press release here. Vice-Chancellor of the Fisheries university B. Madhusoodana Kurup will inaugurate the workshop at 10 a.m.

Eminent environmental scientist Ricardo Haroun from Spain, Kerala Agriculture University Vice-Chancellor P. Rajendran and Veterinary

University former Vice-Chancellor B. Ashok will be the chief guests at the inaugural function.

Experts from the Central Institute of Freshwater Aquaculture (CIFA), Bhubaneswar, College of Fisheries Mangalore, Madras University, Kerala University, Fisheries Department will speak at the workshop, which targets fish farmers, researchers and students.

Policy curb likely on juvenile fishing



A fisherman casts his net for a good catch at Kumbalangi .

The proposed National Policy on Marine Fisheries 2016 is likely to put the breaks on the destructive practice of juvenile fishing across the country.

“Use of low-value fish in fish feed industry is a matter of concern as it can lead to overfishing of low value fish and bycatch, and this could ultimately undermine the entire marine eco system”, says the first draft of the Marine Fisheries Policy.

The draft was prepared for the stakeholder consultations held in Kochi on February 4 and is expected to undergo changes as stakeholder consultations continue in the coastal States.

Juvenile fishing has been banned by Kerala when it notified minimum legal size for a dozen commercially important species early last year. However, there have been reports of large-scale landings of juveniles in Kerala harbours.

There are also allegations that fishermen from neighbouring States are engaged in juvenile fishing in waters off the Kerala coast and landing the catch in their own States as other States have not banned the practice.

The draft also expressed concern at the spread of fish meal factories.

“The spread of fish meal plants in some parts of the country and their overwhelming demand for small pelagics has already driven the valuable oil sardines stock to very low levels in some parts of the country,” says the draft. It goes on to say that the government must take steps to control and regulate the proliferation of fish meal plants. The policy-makers, comprising a committee headed by the Director General of Indian Council for Agricultural Research S. Ayyappan, has emphasised the need to strengthen cooperatives in the fisheries sector. While the cooperatives have taken roots in some States, it is not so in other States, says the policy draft.

“The cooperatives in fisheries sector can best serve the community if they adopt good business models, which would include both harvest and post-harvest functions.”

NBFC sector's bad loans to rise to 7.8 per cent

The overall non-performing loans of the NBFC sector is likely to increase to 7.8 per cent in financial year 2016-17 from an estimated 6.7 per cent in the current fiscal, says a report.

“The overall gross NPA ratio of NBFCs across asset classes is likely to rise to 7.8 per cent by March 2017, from 6 per cent at end-September 2015 and an estimated 6.7 per cent in FY16,” India Ratings and Research said in a report.

Of the 7.8 per cent gross NPL, 1.5-1.7 per cent of the increase will be due to the shift to 120-day NPL recognition norm in financial year 2016-17 from 150 days at financial year 2015-16. The norm says NBFCs will have to classify an asset as NPA if it stays overdue for 120 days.

By financial year 2017-18, NBFCs will have to shift to 90-day NPL recognition norm, which will bring them at par with the banks.

Cheaper funding

NBFCs' access to cheaper funding sources and improving operating efficiencies could help them maintain adequate pre-provisioning operating profit buffers to cushion rising credit costs.

The report said moderation in incremental delinquencies in the sector will continue through financial year 2016-17, led by strengthening of risk management systems of lenders, an economic recovery and a portfolio mix shift to less volatile asset classes.

The revival in heavy and medium commercial vehicles led by fleet operators to trickle down to small road transport operators and driver-turned-owner segments, and boost the used vehicle market, it said.

“However, the small commercial vehicle market is likely to be under continued pressure, due to persistent overcapacity in the system,” the report said.

Rural economy

NBFCs with a higher exposure to the rural economy are also likely to see increased stress, until the agricultural economy revives.

The rating agency said NBFCs will continue to gain credit market share at the expense of banks, as banks struggle to raise capital for a successful transition to the Basel—III regime, which is forcing them to reduce credit growth. The retail-focussed NBFCs will gradually reduce their single product concentration by diversifying into other asset classes, primarily secured in nature.

Large NBFCs are likely to grow at 14 per cent in financial year 2016-17, with SME/MSME growing faster than commercial vehicles. — PTI

A profitable enterprise

Progressive farmers in Mustikuntla prove floriculture can fetch good money



An agricultural labourer plucking kanakambralu flowers at Mustikuntala village in Khammam district.– Photo: G.N. Rao

In their quest for sustainable income, a group of progressive farmers of Mustikuntla village in Bonakal mandal have not only earned a niche for themselves in floriculture but also proved the efficacy of flower cultivation as a profitable enterprise.

Once known as a hub of tobacco cultivation, the village has now transformed itself into a major centre of flower and vegetable cultivation in the district.

Thanks to the sustained efforts by a group of enterprising farmers, the village has earned a wide reputation for cultivation of kanakambralu (*crossandra infundibuliformis*) and Banthi (Marigold), besides vegetable cultivation in pandal mode.

“I have switched over to cultivation of kanakambralu as it offers assured income almost throughout the year,” says B. Nagachandrudu, a progressive farmer of Mustikuntla.

The demand for kanakambralu peaks during the festival seasons like Karthikamasam, Ganesh Navaratri and Bathukamma, he notes, adding that a kilogramme of kanakambralu fetches a whopping Rs. 1,000 during the peak festive season.

“The subsidy and the field exposure provided by the Horticulture Department helped me take up flower and vegetable cultivation successfully,” says Nagachandrudu, winner of the district-level best farmer award in the past. “Our visit to the Indian Institute of Horticultural Research

in Bangalore and flower farms in Karnataka was highly enriching,” he recalls.

“Notwithstanding the initial hiccups, we had successfully surpassed them with the support of the Horticultural Department. The drip irrigation method came in handy for us in overcoming the dry spell last year,” he maintains. Over a dozen farmers in the village have taken up cultivation of floriculture and horticulture crops in more than 40 acres in pursuit of sustainable income, says Mallikarjun, another farmer.

Several students of the Aswaraopeta-based Agricultural College have visited our village as part of their field study trips to observe scientific farming practices and water conservation methods in the past, he says, underlining the need for institutionalised marketing arrangement for the sale of their farm products.

The pragmatic approach and optimum utilisation of the subsidies as well as adoption of water conservation technologies by a group of farmers has brought laurels to Mustikuntla village, notes G. Marianna, Assistant Director-I, Horticulture Department, Khammam.

KVK organises pre-rabi awareness programme

About 400 ryots informed of various research activities

Krishi Vigyan Kendra (KVK), Virinjipuram organised a pre-rabi awareness programme for farmers in Nagavedu village, Nemili block recently.

Farmers were informed of the various research activities being undertaken by KVK based on the need of farmers of the district. About 400 farmers from across the district took part, a press release said.

M. Pandiyan, professor and head, KVK and Agricultural Research Station urged farmers to follow the recommendations of the Agriculture Department or scientists of Tamil Nadu Agricultural University for control of pests and diseases.

G. Ramakrishnan, PA to Collector (Agriculture), said mechanisation of farming was the need of the day to minimise labour problems. He also said that rainwater should be conserved by establishing farm ponds.

The importance of drip irrigation and sprinkler irrigation was also highlighted during the programme. Farmers were also advised to cultivate sugarcane varieties that suited Vellore district to avoid pest and disease problems. The Sugarcane Research Station, Melalathur was conducting research of new sugarcane variety that is tolerant to root grubs and white grubs.

Eight booklets related to rabi crops cultivation technologies were released on the occasion.

Exhibition

An exhibition consisting of seven stalls imparted information on technologies in subjects such as agriculture, horticulture, animal husbandry and drip irrigation methods to farmers.

Technical sessions and interaction between farmers and scientists was also part of the programme. S. Ravi, Member of Legislative Assembly, Arakkonam, took part in the programme, the release said.

Importance of drip irrigation, sprinkler irrigation was highlighted during the programme

Tenant farmers vie for land in capital region



Sudden change in demographics in the capital area has turned out to be a big boon for farmers who preferred to hang on to their lands. This is primarily because the amount of land available for cultivation in the region is less and the number of farmers who lease out land for agriculture is comparatively huge. Lands in this region are sought after by tenant farmers because of their high fertility and good returns without much investment.

Land owners of the area have handed over nearly 21,000 acres of land to the Capital Region Development Authority (CRDA) under the Land Pooling System (LPS). While owners of 6,000 to 7,000 acres rejected LPS outright, land owners of another 6,000 acres gave their consent for land pooling, but kept on backing out by not taking instalments of the annual lease amount promised to them by the government.

The CRDA has made it clear that farmers who handed over their land to the authority under LPS should not take up any cultivation. There is however no such restriction for landowners who rejected the LPS. The courts too have intervened on behalf of the landowners and said that the farmers who have rejected LPS be allowed to cultivate their lands.

With the State government failing to fulfil many of the promises, the farmers in the area have become restive realising that it was going to be a while before promises like one job per household, free education and medicare and Rs 25 lakh interest free loan for various projects to materialise. The Polambadi and Polampilustondi programmes have also been discontinued unofficially in several villages in the Mangalagiri Assembly Constituency.

Banks and cooperative societies too are not extending crop loans to farmers in villages where most of the landowners have given consent to LPS.

No restriction

There is no restriction for cultivation of most of the lands in the limits of Undavalli, Penumaka, Yerrabalem, Nidamaru, Nowluru and Betapudi because landowners here rejected LPS.

Mangalagiri MLA Alla Ramakrishna Reddy said the annual lease amount for land that ranged from Rs. 25,000 to Rs 30,000 an acre had skyrocketed to an amount between Rs. 60,000 and Rs. 80,000 acre. Agriculture was feasible in these villages even at such high lease because crops like flowers and vegetables give income 365 days in a year.

Innovative techniques lead to better yield



S. Chinnasamy of Gudimangalam in Tirupur, a farmer, taking a look at the paddy raised on his field using innovative water and seed management techniques.

S. Chinnasamy (64), a retired headmaster of a government-aided school who has turned a farmer, is elated as the improvised water and seed management technique he adopted on his own has paid rich dividends.

He raised paddy over 10 acres using drip irrigation against the conventional method of water logging the fields and used an inventive seed application technique. The paddy is ready for harvesting and Mr. Chinnasamy is happy that more efficient rice tillers are available now.

Water management

“I experimented with drip irrigation, instead of the usual practice of water logging. This way only the root zones of the crop were watered. And the amount of water normally required to irrigate one acre of paddy now irrigated three acres,” said Mr. Chinnasamy. Efficient seed management also added up to his net profit margins.

“Seeds were put directly in the field adopting a typical space pattern. Only two kilograms of seeds were used per acre instead of the 25 kilograms required in the traditional method of scattering the seeds ”, he pointed out.

Assistant Director of Agriculture M. Mahalingam, who was all praise for the innovative practice tried out by Mr. Chinnasamy, said that the space provided between the plants allowed enough sunlight and ventilation and enabled the farmer to control pests more efficiently. “Moreover, the drip

irrigation providing alternate wetting and drying cycles is mainly responsible for the healthy grains that have come up”, he said.

Fertiliser Industry is best candidate for direct benefit transfer

With regard to the Fertiliser Industry, I have the following suggestions:

* There is a need to increase the urea price by at least 15 per cent. The current selling price of urea which is highly subsidised is almost one-fourth the world price. There is a potential over the next four years to increase urea price every year gradually so that the subsidy levels are reduced. Further due to the product being very cheap, there is excessive use of urea and this affects the soil. By increasing the price this can lead to more balanced fertilization and lower subsidy outgo.

* The Fertiliser industry is the best candidate for direct benefit transfer (DBT). Currently, the subsidy is paid through the fertiliser companies. This is totally unnecessary. If the farmers are given subsidy directly, this will not only stop leakage but will also avoid unnecessary paper work and red-tapism.

* Currently in the phosphatic sector, there is a cumbersome procedure to reclaim subsidy and freight. It is desirable to have freight merged into the subsidy so that there is only one stage of disbursement. A weighted average freight can be used for this purpose. Currently, freight bills have to be submitted separately and verified and then paid. All these results in a lot of paper work delay.

* The current move of the Government to grant support to organic compost is a welcome move as this ensures replacement of carbon into the soil thereby making it more conducive for farming.

* The major challenge in the farm sector relates to irrigation as the percentage of land under irrigation is still less than 20-25per cent and majority of Indian farmland is rain-fed or monsoon dependent. Investment in linking of rivers and building of canals to systematically increase irrigated area every year should be part of the budget.

* Single Super Phosphate (SSP) is the appropriate fertiliser for the small and marginal farmers. The current system of subsidy is not conducive to

promotion of SSP usage. Countries like Brazil have used this cheaper alternative with some support rather than depend on imported di-ammonium phosphate (DAP). The whole policy towards SSP needs to be relooked. At least 3 million tons of SSP can be used in addition to the current usage. This will bring down imports of DAP by at least 2 million tons annually.

The author is the Executive Chairman of the Murugappa Corporate Board and the Chairman of EID Parry (India) Ltd.

Japanese team studies water resources



Japanese delegation at Sangam barrage on Sunday.—PHOTO: K. RAVIKUMAR

A three-member expert team of the Japanese International Cooperation Agency (JAICA) on Sunday visited irrigation canals and Sangam barrage to get a first-hand understanding of the water resources available in the district for the sake of providing funding for future irrigation and canal modernisation schemes here.

The JAICA team made a field study of the proposals submitted by the government and the Irrigation Department for carrying out canal works and ayacut improvement works at a cost of nearly Rs. 200 crore.

The JAICA team comprised group leader Shibutha, adviser Kamyia Nijuma, and design engineer Mujuma.

Retired engineer-in-chief Abdul Basheer also accompanied him.

From the Irrigation Department in Nellore district, Somasila Superintending Engineer Subba Rao, Telugu Ganga Project officials, and others explained the visiting team about the plans made to increase the irrigation area under the present schemes by over 3 lakh acres.

During the day-long tour, the JAICA visited Sangam barrage, Kaligiri reservoir, Dagadarthi-Racherlapadu canal, Dagadarthi-Mungamuru canal, KTS, and MTS channels.

Mr. Subba Rao said that the team members had asked for details about the proposed works to improve the canal systems and also to increase the ayacut area to benefit the local farmers.

“If they are satisfied, the funding will start for these works. This will further increase the prospects for the farmers,” he added.

It is for the first time that the JAICA is examining the prospects for funding the irrigation schemes in Nellore district.

Similar funding had been taken for the Gandipadu reservoir in the past.

Subsidy-linked loan for marginal farmers sought

The United Farmers’ Association – Tamil Nadu has urged the State Government to come forward to provide subsidy-linked loan to the marginal farmers for the purchase of bullocks for farm activities.

Mechanisation of farm activities has led to the drastic reduction in the population of farm animals in the country. More than 65 per cent of the farming community in the State are marginal farmers and they cannot afford mechanised farming activities using costly equipment, C. Vaiyapuri, president of the United Farmers’ Association – Tamil Nadu, said in a statement issued here on Tuesday.

These marginal farmers have to depend on the farm animals for ploughing etc. The government should come forward to provide subsidy-linked loans to the marginal farmers for purchasing farm animals on the lines of the financial assistance extended for the purchase of tractors, he said.

Mr. Vaiyapuri complained that the major roads and streets in the villages have become narrow due to encroachments by anti-social elements. In some of the panchayats, the car festivals of the local temples could not be held due to the narrow roads. The authorities should take steps to retrieve the encroached land and widen the roads.

Engagements

SALEM

District administration: Farmers grievances day meeting, V. Sampath, Collector, presides, collectorate hall, 10 a.m.

V.M.K.V. Engineering College: Inauguration of Chemistry virtual lab training, Sarabangar lab, 9 a.m.

Salem College of Engineering and Technology: Department of Training and Placement, career guidance programme by de'arc HRD, Chennai, 9.30 a.m.

Salem Bazme Rabbaniya: Jashne Meeladunnabi, Peerzada Syed Kaleem Afzar Rabbani Qadiri of Banda, Uttar Pradesh, delivers bayan on 'life and achievement of Prophet', Fort meltheru Mosque, 10 p.m.

District Employment Exchange: Free coaching camp for the candidates appearing for TNPSC VAO examinations, 10 a.m.

Tamil Nadu Handicrafts Development Corporation Limited: Exhibition of ornaments and spiritual products, Anna Pattu Malagai complex, 10 a.m.

Handicrafts Expo: Exhibition of wooden handicrafts of western Uttar Pradesh, National Hotel, 9 a.m. to 9 p.m.

NAMAKKAL

District administration: Grievances day meeting, V. Dakshinamoorthy, Collector, presides, collectorate hall, 10 a.m.

Mahendra Engineering College: Anna University, Chennai – Tamil Nadu State level placement programme, mega employment drive by Cognizant Technologies Solutions (CTS), 7.30 a.m.

Gnanamani College of Engineering: Department of ECE, guest lecture programme on ‘image processing and its real time applications’, T. Aranganal, chairman, presides, Ramanujan hall, 10 a.m.
Kulakarai, 9.30 a.m.

ERODE

EBET Group of Institutions: Guest lecture on 'Social Responsibility' for first-year students by Ashok, Clinical Psychiatrist, 10 a.m.

Scientists develop chickpea harvestable by machine

The taller variety crop also has greater tolerance to diseases and drought

Imagine 2.25 tonnes of chickpea variety being harvested in just 75 minutes! The process — including cutting and threshing — would normally take three days, but has been made possible due to the breeding of a taller variety chickpea that can be harvested by standard machinery.

The chickpea variety, NBeG 47, is the first machine harvestable variety released in Andhra Pradesh suitable for the State’s variable climate. This development was demonstrated recently in Anantapur district of Andhra Pradesh, showing how time and money can be saved, according to a release here on Thursday by International Crops Research Institute for the Semi-Arid-Tropics (ICRISAT).

The chickpea variety planted in farmer B. Rameswar Reddy’s field was developed by Veera Jayalakshmi, Principal Scientist (Chickpea Breeding) at Acharya NG Ranga Agricultural University in Nandyal, with support from the ICRISAT.

“Currently chickpea farming in Andhra Pradesh is partially mechanised – the crop is cut manually and then fed into a threshing machine. The total mechanisation of harvesting is cost-effective and quicker, reducing the risk

of the ripened crop's exposure to untimely rain or other extreme weather conditions," says Pooran M. Gaur, Principal Scientist, Chickpea Breeding at ICRISAT.

Dr. Jayalakshmi says the farmer will keep a portion of seeds for his next crop and make available this new variety to other interested farmers in the region. She adds that machine harvesting is better for the health of the labourers, especially women, as handling the crop causes painful dermatitis due to its high acid content. This innovative variety was developed to address the issue of labour shortage on farms and reduce drudgery, especially for women labourers. The yield of this new variety, 2.25 tonnes per hectare, is on par and in some conditions better than the existing variety JG 11 (1.75 to 2.5 tonnes per hectare), provided the prescribed plant spacing is followed. Other traits such as disease and drought tolerance are also on a par with the JG 11 variety.

Y. Padmalatha, Associate Director of Research, Regional Agricultural Research Station, Nandyal, says that while scientists come up with innovations for better farming practices, policy makers need to provide much needed support to price pulses like chickpea so farmers get consistent market value for their crops. The demonstration of the variety was recently held at Vennapusapalli village of Andhra Pradesh, where local community leaders and farmers from other villages learned about the new variety. More research efforts are underway to develop machine harvestable chickpea varieties suited for other parts of India like Uttar Pradesh, Punjab, Madhya Pradesh and Karnataka.



GM row again, with mustard topping

On Friday, the country's biotechnology regulator deferred a decision on allowing commercial cultivation of Mustard DMH-11, a transgenic crop developed by Centre for Genetic Manipulation of Crop Plants at Delhi University.



A mustard field in Kashmir. With edible oil production stuck at 7.5 mn tonnes, India depends hugely on exports.

On Friday, the country's biotechnology regulator deferred a decision on allowing commercial cultivation of Mustard DMH-11, a transgenic crop developed by Centre for Genetic Manipulation of Crop Plants at Delhi University. It revive memories of Bt brinjal, whose commercial approval is on hold since 2009. Harish Damodaran and Amitabh Sinha explain why Mustard DMH-11 has met the same fate.

What really is GM mustard?

A team of scientists at Delhi University led by former vice-chancellor Deepak Pental has bred DMH-11, a genetically modified (GM) mustard hybrid. Hybrids are normally obtained by crossing two genetically diverse plants from the same species. The first-generation offspring resulting from it has higher yields than what either of the parents is individually capable of giving. But there is no natural hybridisation system in mustard, unlike in, say, cotton, maize or tomato. This is because its flowers contain both the female (pistil) and male (stamen) reproductive organs, making the plant naturally self-pollinating. To the extent that the egg cells of one plant cannot be fertilised by the pollen discharged from the stamen of another, it restricts the scope for developing hybrids.

What Pental's team has done is create a viable hybridisation system in mustard using GM technology. The resulting GM mustard hybrid, it is claimed, gives 25-30 per cent more yield than the best varieties such as 'Varuna' currently grown in the country.

Is there a need, in the first place, for developing a mustard hybrid?

In 2014-15, India imported 14.5 million tonnes of edible oils valued at \$10.5 billion. That included nearly 0.4 million tonnes of imported rapeseed oil, which many processors and traders are blending with indigenous mustard oil. With the country's own annual edible oil production stuck at below 7.5 million tonnes, of which mustard's share is roughly a quarter, the need to raise domestic crop yields and cut dependence on imports cannot be doubted. Hybrid technology is a potential technique to boost yields, as has been successfully demonstrated in a host of crops.

Why, then, this fuss about hybrid mustard? The only reason is that it has been created using GM technology, involving incorporation of alien genes. Pental's team has used a "Barnase" gene isolated from a soil bacterium called *Bacillus amyloliquefaciens*. It codes for a protein that impairs pollen production and renders the plant into which it has been introduced male-sterile. This male-sterile plant is crossed with a fertile parental line, containing, in turn, another gene, "Barstar", from the same bacterium that blocks the action of the "Barnase" gene. The resultant progeny, having both the foreign genes, is a hybrid mustard plant that is not only high-yielding, but also fertile and capable of producing seed/grain (thanks to the "Barstar" gene in the second fertile line). Is the objection to GM justified? GM technology has already been commercialised in India through Bt cotton, which is also based on incorporation of foreign genes derived from a soil bacterium, *Bacillus thuringiensis*. While there are fierce opponents of it, it is also a fact that the country's cotton production has gone up more than 2½ times since Bt hybrids were first planted in 2002. Nor has any evidence emerged really of Bt cotton causing any adverse human or animal health effects. The opponents of GM mustard point out that cotton is not a food crop, while mustard is India's largest edible oil-yielding crop. However, there are many inconsistencies in this argument too. First, cotton-seed yields not only fibre (lint), but also oil and oilcake (meal) fed to animals. Cotton-seed oil is, in fact, the second largest produced edible oil in the country (1.4 million tonnes) after mustard (2 million tonnes). That makes cotton no less of a food crop. And since 95 per cent of India's cotton production is today Bt, its allegedly harmful toxins would already have been consumed directly or indirectly during the last decade and more. Secondly, India annually imports 3 million tonnes of soyabean oil and another 0.4 million tonnes of rapeseed oil, which are predominantly GM. Also, in this case, the developer is a government-funded institution, as opposed to Bt cotton which was the

proprietary technology of a multinational, namely Monsanto. Is the opposition, therefore, only ideological? Most of it is. There was similar opposition to Bt brinjal, another GM crop approved by the GEAC in 2009. Following protests, the approval was put on indefinite hold by then environment minister Jairam Ramesh. Those opposing Bt brinjal then or DMH-11 mustard now have admitted being against the genetic modification technology itself, at least when it comes to its use in agriculture. At the same time, their complaints against a less-than-robust regulatory environment for genetically modified organisms in the country are genuine. There is lack of transparency as well as conflict of interest in the system. The Genetic Engineering Approval Committee, which is responsible for approving large-scale releases and commercialisation of GMOs, functions under the Ministry of Environment and Forests and is not entirely independent. The case of the Review Committee on Genetic Manipulation that supervises and clears research activities and also small-scale field trials is even more stark. It is part of the Department of Biotechnology, whose primary task is to promote biotechnology. DBT therefore is the promoter as well as the regulator. On several occasions, developers of transgenic crops have also been members of regulatory committees. Why is the regulatory environment not being reformed? For several years now, especially since the controversy around Bt brinjal in 2009, the government has been trying to create an independent biotechnology regulatory authority, a single organisation that will replace the multiple committees — at least six — that are part of the current regulatory structure. This authority would deal with the use of all GMOs in agriculture, pharmaceutical and biodiversity sector. The proposed structure and governance of the authority has been revised several times and at least three Bills have been introduced in Parliament, the last one in 2013. But the Bills have not received enough support in Parliament or have lapsed. By the end of last year, the DBT had finalised the latest version of the Bill proposing a regulator and a new biotechnology policy. It is still to be introduced in Parliament.

MP bid to get GI tag for basmati hits roadblock

Over three lakh farmers in Madhya Pradesh cultivate basmati in over four lakh hectares. They were hoping for a favourable order which would help them in exports.



More than three lakh farmers in Madhya Pradesh cultivate basmati on over four lakh hectares of land and were hoping for a favourable order, which would have earned them more in exports. (Source: File | Reuters)

Madhya Pradesh's battle to get the Geographical Indication (GI) tag for basmati rice grown by its farmers in several districts has hit a hurdle, with the Intellectual Property Appellate Board (IPAB) ruling against it.

The assistant registrar of the Geographical Indications Registry had ruled in favour of Madhya Pradesh on December 31, 2013. But the Delhi-based Agricultural and Processed Food Products Export Development Authority (APEDA) challenged the order. The Chennai-based IPAB has now sided with the APEDA, which had argued against allowing GI tag for basmati rice grown by MP farmers.

More than three lakh farmers in Madhya Pradesh cultivate basmati on over four lakh hectares of land and were hoping for a favourable order, which would have earned them more in exports.

“We will move the Chennai high court. We will eventually succeed,” Madhya Pradesh Agriculture Minister Gaurishankar Bisen told The Sunday Express, a day after Justice K N Basha and technical member Sanjeev Kumar Chaswal gave their ruling.

Principal Secretary (Agriculture) Rajesh Rajora said the state and other applicants had submitted detailed documentary evidence, such as the gazetteers during the British rule, to shore up the state's case. He said the appeal will be filed in the next few days.

Though there are hundreds of varieties of long grain and scented rice grown all over the world, basmati is the best known due to its unique properties attributable to agro-climatic conditions prevailing in a geographical area.

The assistant registrar had asked APEDA to include some districts in Madhya Pradesh that grow basmati before giving GI tag to the rice grown in parts of seven states, including Punjab, Jammu & [Kashmir](#), Himachal Pradesh and Uttar Pradesh.

The APEDA, which functions under the Union Ministry of Commerce and Industry, had challenged the “erroneous” order on several grounds. While arguing against MP’s inclusion, APEDA claimed to have legally challenged in 40 countries third party attempted registrations in the name of basmati or any deceptive variations.

Saying MP’s evidence was based on improper verification and illegible and unreadable documents, it was argued that the state does not fall in the Indo Gangetic Plain. In the 235 goods granted GI tag by the registry, only two have been challenged so far.

The invisible drought

We have turned our back to the intense food and drinking water distress across states

India has transformed spectacularly in innumerable ways in the last two decades. One of the least noted changes is in the way the country — governments, the press and people — respond to drought and food scarcities. Back in the late-1980s, many states across India were reeling under back-to-back droughts for three consecutive years, not much different from the circumstances of India in 2015-16. I was district collector in districts of MP and Chhattisgarh during those years. At that time, for Central and state governments, as for the media and public opinion, there was little that was weightier than responding, or being seen to respond, to the ongoing drought. Collectors had extraordinary rights to draw on the state exchequer without prior sanctions. Our mandate was paramount and unambiguous — to do all we could to save lives, and mitigate food, fodder, drinking-water and migration distress. We organised feeding centres for the destitute, fodder stalls for cattle, and transported drinking water over long distances. At the

peak, we were creating one lakh person days of work in relief works every day in my district.

During the long, dusty, hot summers, officers like me would be out in our Jeeps from 5am until late at night, inspecting relief works, and ensuring that people and livestock had food and water to survive those hard months. Administrations did slip and falter: Runaway corruption in particular was not uncommon. But there was no doubt what the preeminent duty of the state was when its people were assaulted by drought. To do all it takes to ensure food, water and work for all. To save lives.

It is a lesson completely forgotten in the India of today. Farmers and landless workers in 11 states are crushed by drought, often for three years in a row, but if you scan newspapers or television screens, debates in Parliament and meetings in state secretariats, it would appear that this is a figment of some imaginations. This, indeed, is what some senior journalists and officials said to me, or implied — that we are inventing the story of drought hunger. I decided to travel to the rural backwaters of Bundelkhand in UP to see for myself.

In villages that I visited in district Banda, followed by a public hearing attended by 500 people, I encountered desperate people eating just one meal a day, and that too coarse ground grain mixed with wild leaves. I bit into one such roti, and found it bitter and foul. Villagers said it was difficult to persuade children to eat this but they had no option as there was nothing else for them to eat. They explained the virtue of these wild leaves: Once you eat them, you don't feel hungry for a full day. A rapid survey by some activists and lawyers found that already 86 per cent of families reported cutting down their dal intake, 79 per cent were eating roti and rice with salt or chutney, and 84 per cent had cut down milk for their children. In an estimated seven out of 10 households, not just men but often entire families had migrated to places as far as Punjab, Hyderabad, Surat and Delhi. Schools, therefore, were rapidly emptying out.

I found evidence of widespread intense food and drinking-water distress — and this when the summer months are not even upon us yet. There were also alarming reports of farmer suicides. The current drought was preceded, ironically, by a hailstorm that destroyed all standing crops. Many farmers, unable to pay off mounting crop debts, killed themselves after these recurring crop losses. But unlike in many other regions of endemic farmer

suicides, we heard of landless labourers and marginal farmers also ending their lives. Their debts were not to banks but to usurious moneylenders who loaned at compound interest rates of 5 per cent per month. Shakuntala of Oran village, for instance, owns just two bighas of land. After sowing, her husband went to Punjab to find wage work but came back empty-handed even from there. He found that hail had destroyed their crops. Interest on loans by moneylenders of Rs 50,000 was mounting relentlessly. He needed to get his 18-year-old daughter married. Crushed, one day he hanged himself.

The response of the state administration to looming drought is disgracefully dismal and listless, lacking entirely in both urgency and compassion. People showed us empty job cards; public works under the MGNREGA, the most effective instrument to prevent distress migration, were nowhere to be found. Wages from earlier work had not been paid for over a year. Even more gravely, neither the Central nor the state government is serious about rolling out the National Food Security Act that should lawfully have commenced a year and a quarter ago. It would have ensured the availability of half of each household's monthly cereal requirements almost for free for more than 80 per cent of households.

In addition, I found no plans underway for feeding the destitute, especially old persons left behind when families migrate, the disabled, and single woman-headed households. ICDS centres were in a shambles, otherwise they could have been upgraded to also supply emergency feeding to the destitute during the drought. Schools only occasionally supplied khichdi to a small number of children. There were no arrangements for augmenting drinking-water supply, including ensuring that Dalit and Muslim hamlets had functioning tubewells, or for transporting water where necessary. I found no attempt to create fodder banks and cattle camps.

All of these are fundamental elements of sound district administration, for which every young civil servant of earlier generations was trained and held strongly accountable. But no longer. Even British colonialists developed elaborate protocols for such times codified in famine codes. In *Ash in the Belly: India's Unfinished Battle against Hunger*, I reviewed these colonial codes and demonstrated how they did attempt to save lives but at minimal cost to the exchequer, disrespectful of human dignity and the equal worth of subjects. However, in contemporary neo-liberal times, attempts to avoid "burdens" of high public spending on people coping with acute drought and

hunger have revived. There seems even less preoccupation with saving lives of dispensable, invisible rural poor populations. In today's times of rapid economic growth and overflowing grain warehouses, what can be more culpable?

hindustantimes

Futuristic farmers: Flowering mini-Holland in Punjab



Gurwinder Singh walking through his gladiolus field at Nanowal village in Fatehgarh Sahib district, thanking God for the day a light bulb went on his head. (Keshav Singh/HT Photo)

Driving through the mustard fields widely used as a motif for Punjab, the gladiolus and marigold farm of 35-year-old Gurwinder Singh Sohi at Nanowal village in Fatehgarh Sahib appears like mini-Holland nestled in Punjab. The burst of colours not only breaks the monotony of a landscape dotted with the lush-green fields of wheat and orange kinnow stalls on the roadside, but also breaks through the traditional crop cycle of wheat and paddy.

It is the busy time of the year for Gurwinder as the 'glad', as he fondly calls his gladiolus plants, have to be cut before they flower as florists want ones with shelf life of at least 15 days. The flower is as good as its seed, literally.

While the gladiolus sticks have to be marketed at the right time, the seed bulbs have a shelf life of up to eight years. These bulbs sell at Rs 2 each, meaning a profit of Rs 1.6 lakh a year an acre! Add to this, Rs 2 lakh from the sticks — each sells at an average price of Rs 3, with prices touching Rs 7 in the wedding and festive seasons. So, one acre of only gladiolus fetches him a neat profit of Rs 3.5 lakh an acre each year, about 10 times of what he would have made from wheat and paddy.

His start-up is now a flourishing firm, RTS Flowers, which transports flowers to nearby Chandigarh, Ludhiana and Patiala. And, though Gurwinder did not study beyond school, he is a pro at marketing his produce through Facebook and trade websites.

Round-the-year income cycle

From the eight acres on which he grew wheat and paddy, Gurwinder now has 18 acres — nine of his own and nine on lease. He grows gladiolus on over 10 of these acres. Since gladiolus is grown in September-October and harvested in January-March for flowers and April for the bulbs, unlike the two-crop cycle of wheat and paddy, the same land gives him income round the year since two more crops can be grown in the remaining time.

First, he reaps a fortune from every acre of gladiolus he grows. “The seeds of Holland variety are a one-time investment of Rs 1.6 lakh an acre — Rs 2 per bulb — and can be prepared from the next year from the plant itself. But floriculture is labour-intensive and we have three permanent workers and hire 20 more for sowing and seed extraction from February to April. The labour cost is up to Rs 40,000 an acre,” he says.

After gladiolus, he grows pulses and then paddy too, mainly basmati. “Marigold can be grown both in summer and winter, and we grow it at times on an acre of the same land. On the remaining land on lease, we grow wheat, maize and cattle fodder. This way, we have no fear of our income drying up any time of the year.”

The marigold on one acre brings in an additional Rs 1.25 lakh to Rs 1.3 lakh each season. Pulses grow fast and fetch Rs 22,000 per acre. Basmati prices fluctuate and last year gave him “no profit, no loss”.

“The returns are far more rewarding than just wheat and paddy that usually bring just Rs 30,000 and Rs 40,000 an acre, respectively. After deducting all input costs, that leaves one with just half of this amount as profit,” he says.

Start-up after many failures

Success has not come easy to Gurwinder who tried his hands at many trades. After completing school, he could not clear the joint entrance test (JET) for engineering but refused to join the family business of wheat-paddy cultivation. He started growing mushrooms but soon found them not worth the effort and set up a sweets shop in the neighbouring town of Khamano.

He gave that up too, and took to horsebreeding and, later, to customising jeeps. In 2008, he learnt that the Punjab horticulture department was giving subsidy on Holland gladiolus seeds and was game for it. He started with growing it on two kanals and found it profitable. He kept adding acres under the Holland gladiolus that gives better quality flowers and bulbs and sells at a higher price than the local variety, Sylvia.

Farm to fork, the organic way

Gurwinder has now learnt the art and science of agri-marketing and wants to make his dream of farm-to-fork a reality. With little help from government departments on installing drip irrigation, solar pumps and purchasing agriculture equipment, his 12 friends and he have set up a Farmers' Welfare Club with membership fee of Rs 5,000 each to buy machinery such as rotavator, power spray and seed drill. To cash in on the organic food boom, the club members are growing organic turmeric, pulses, maize and basmati.

But since the profits in the organic food industry are pocketed by big food stores, the club has started marketing the produce directly to customers by creating WhatsApp groups!

“We are directly selling organic pulses and vegetables to over 30 homes in Mohali via WhatsApp. To take farmfresh food to many more homes, we would soon start our own web portal. A kilogram of organic dal we sell at Rs 100 is sold at stores in the city at double the price. Worse, it may not even be organic. Direct marketing would ensure both the farmer and consumer get a fair deal,” Gurwinder sums up. For this young entrepreneur who has returned to his fields, sky is now the limit.

Via WhatsApp

Besides gladiolas, Gurwinder Singh grows organic pulses and other crops, which he and his group of friends sell directly to customers by creating WhatsApp groups! “We are directly selling organic pulses and vegetables to over 30 homes in Mohali via WhatsApp. To take farm-fresh food to many

more homes, we would soon start our own web portal. A kilogram of organic dal we sell at Rs 100 is sold in city stores at double the price,” says Gurwinder.

Futuristic farmers: Spicing it up with chilli farming



Sitting on a fortune, Nek Singh will tell you that chilli farming involves a lot of sweat but no tears. (Keshav Singh/HT)

Nek Singh’s fields here stand out in a Punjab where agriculture is waiting to be spiced up. Driving from the state capital of Chandigarh in February, when after 90 minutes, the constant view of lush wheat fields and mustard in bloom changes to acres of neat rows of ready-to-be-transplanted chilli saplings, it’s a different state.

Far from the depressed average Punjabi tiller whose profession is becoming unviable, the 70-year-old from Khokh village has a profitable agriculture business and supportive sons to help him take it further. When agriculture is in crisis all over the state, he is among its select successful farmers who even pay income tax. From a normal farmer struggling to survive and being a ticket checker in Pepsu Road Transport Corporation for about 15 days, he has changed his luck by hard work, enterprise, and finding a hot crop.

Enterprising

About 50 years ago, unable to continue his education beyond Class X, Nek Singh joined his three brothers in tilling his family’s 13 acres. By 1965, when Green Revolution was catching up in the state, then 20-something Nek Singh decided to install a tube-well on his farm. With Rs 3,500 loan, he bought a Kirloskar engine, which he assembled on his own. “It was a huge investment in those days,” said the progressive farmer. One of his elder brothers, who stays with him, was not as enterprising. While they got a

similar share of ancestral land in the 1960s, only Nek Singh was able to make it count.

Going by the government mandate, he started cultivating wheat and paddy. The minimum support price (MSP) assured him steady income for the family. “But I was not satisfied. I wanted to earn more. By 1980s, I had started meeting scientists and agricultural experts,” said the man who still wears a woollen jacket over white kurta-pyjama, a sign that he has not forgotten his old days. Being in touch with scientists allowed Nek Singh to help Punjab Agricultural University (PAU) with cotton-and-tomato testing. Growing tomato gave him good income from 1988 to 2000. “Chilli came into picture in 1991, and since then there is no looking back,” he told HT, adding: “My business is growing each year.”

This year, he has raised chilli saplings over 3.5 acres towards the plan to cover 10 acres. Earning a couple of lakh rupees from each acre under chilli every kharif season, Nek Singh has expanded his inherited 4-acre farm to 65 acres to be among the most prosperous farmers of the state. He doesn't grow wheat, only high-income potato and sunflower in the rabi season and chilli and basmati in kharif.

Credit to experts

Carrying out trials on behalf of the PAU and Indian Agricultural Research Institute (IARI) in 1991, Nek Singh discovered the magic of chilli and scientists from the Indian Institute of Horticultural Research (IIHR), Bengaluru, helped him understand it.

“I knew scientists from across the country, which gave me to opportunity to participate in trials on the CH-1 variety of chilli. Year after year, I kept improving the variety, using the skills gained from experts. Most of the other chilli farmers don't know how to prepare nursery,” said the entrepreneur from Nabha.

Lately, he has developed a poly-house to create favourable conditions for his saplings, famous in the chilli belt of Rajasthan, Uttar Pradesh, Haryana, and Punjab. It has taken him years to master the techniques of maintaining a hybrid chilli variety. “In creating a cross breed, wind direction is the most important factor. The hybrid sapling should be placed between two rows of other crop, at right angle to the wind direction,” said Nek Singh, revealing the trick that the IARI scientists passed on to him.

The bigger secret to his success, however, is “hard work” that he put in testing several crops and developing own variety. He is optimistic of good results.

For sons, Nabha is US

For Nek Singh’s two sons, working on their farm is like being employed in a foreign dream destination. “Our business is so lucrative and modern that we don’t have the urge to settle abroad,” said Jaswant Singh (43), farmer’s elder son and a graduate in arts. Hwe manages labour and the farm’s day-to-day affairs.

His younger brother, Kulwant Singh (40), a graduate in computer applications from Thapar University, Patiala, looks after the logistics of supplying the saplings to Rajasthan, Uttar Pradesh, Haryana and Punjab. Ready to deliver his first consignment of the season in Moradabad, he said while counting the saplings in the trays that he enjoys his work. “I earn more than many of my friends in foreign countries. Most important is being with my brother and learning something new every day from our father,” said Kulwant, who drives a Mahindra Bolero jeep, which is also his delivery vehicle.

“It’s going to be very busy month ahead, as chilly transplantation has started,” adds Kulwant, who after finishing his studies in computers wanted to go to the US. “Then I worked for a week with Papaji and changed my decision. Hun saadda Amrika ethey hee hai (now our America is here),” said a beaming farmer.

Huge job scope

Nek Singh hires women of poor families from the area and pays them Rs 40 an hour to do labour on his farm. He employs nearly 100 women in a year to look after the nursery, picking chilli, and help with other activities. “These poor women make about Rs 10,000 a month, and it gives me immense satisfaction to see them able to earn,” said the employer.

The work environment is home-like. He sells his October harvest at the Sanour chilli market of Punjab in Patiala district, about 20 kilometres from home. His farm is strikingly neatly kept. A one-room structure on it serves as his kitchen, bathroom, and work area. Even though his village house is only at a walking distance, he likes being hands-on. The undisputed chilli king of the state avoids spicy food. He served the HT team tea and biscuits.

Asked why he grows chilli then, he said: “Why not, it’s hot. Its demand will never go down.”

Chillinomics

1-acre nursery grows saplings for 285 acres

Returns from saplings Rs 4,500 to 6,000 per acre

Net earnings from saplings Rs 26 to Rs 50 lakh a year

· Income per acre from saplings Rs 7.5 to 14 lakh

Growing season 5 months (November to March)

Input cost (labour, logistics, infrastructure, seeds for saplings) 2.5 lakh per acre

Labour charges Rs 40 per hour

1 acre grows 180 to 220 quintal green chilli, 200-quintal red chilli, subsequently

Green chilli price Rs 12 to 25 a kilogram

Gross income Rs 6 lakh per acre

Net income (after deducting input cost) Rs 5 lakh per acre

Cost of land lease Rs 20,000 to 40,000 per acre (excluded from net income)

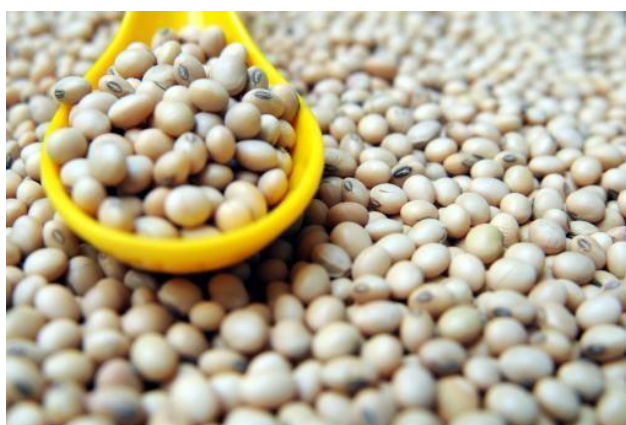
BusinessLine

Soyameal exports dip 92% to touch all time low of 7,707 tonnes

NEW DELHI, FEB 6:

Soymeal exports touched an all time low of 7,707 tonnes in January this year, due to higher bean prices in the domestic market.

The export during April-January period of the current fiscal declined by 87 per cent to 69,266 tonnes compared to 5.35 lakh tonnes in the same period of previous year.



“The monthly soymeal exports have touched an all time low of 7,707 tonnes in January due to higher bean prices in the domestic market,” Soybean

Processors Association of India (SOPA) Chairman Davish Jain told PTI. According to SOPA data, soybean meal export declined by 92 per cent last month compared to 1.03 lakh tonnes in the year-ago period.

During current Oil year (October-September), total exports during October 2015 to January 2016 stood at 26,520 tonnes as against 4.38 lakh tonnes last year, a fall of 94 per cent.

Soymeal is mainly used as feed for poultry, cattle and also as aqua feed. The annual production in India is about 6 million tonnes.

(This article was published on February 6, 2016)

Business Standard

Budget 2016: Agri Min seeks animal health card scheme

Ministry seeks Rs 140 cr to cover 85 mn milk producing animals under scheme, to control diseases, enhance output and improve livestock quality



Aiming to control animal diseases and boost milk output, the Agriculture Ministry has sought measures like a new scheme on animal health card, e-market platform for bovine germplasm and increase in allocation for Rashtriya Gokul Mission in Budget 2016.

In its pre-Budget recommendations, the Agriculture Ministry has proposed launching of a 'Pashu Sanjeevani scheme' with components of health cards, emergency helpline and health services at door step, according to sources in the Finance Ministry. Read our full coverage on Union Budget 2016

The ministry has sought funds worth Rs 140 crore to cover 85 million milk producing animals under the scheme which would aim to control spread of animal diseases, enhance productivity and improve quality of livestock, the sources said.

The proposed animal welfare scheme will identify and trace animal with unique identification number, upgrade information network on animal productivity and health to national data base and create a dedicated helpline and doorstep delivery of health services, they added.

In the absence of an authentic market for quality and disease free bovine germplasm, the ministry has proposed creation of 'e-Pashu Haat' connecting breeders state agencies with stakeholders on an online platform, thereby maintaining identification and traceability of germplasm sold.

The ministry has said that the proposed e-market will enhance availability of disease-free germplasm with known genetic merit, provide a one stop portal for bovine breeders, no involvement of middlemen in sale and purchase of

animals, allow sale of animals tagged with animal wellness card besides propagating indigenous bovine breeds and raise milk output.

That apart, the sources said the ministry has suggested a scheme to promote sex sorted semen to increase female population to make milk production more remunerative to farmers.

The new scheme has been proposed as at present out of 300 million bovines, only 85 million are milk producing, leaving large number of unproductive animals.

The ministry has also proposed the [Finance Ministry](#) to make Rashtriya Gokul Mission (RGM) -- which works towards development, preservation and conservation of indigenous breeds -- a separate scheme with higher fund allocation, sources added.

The RGM is a focussed project under National Programme for Bovine Breeding and Dairy Development with an outlay of Rs 500 crore during the 12th Five Year Plan.

Milk production in India, the world's largest producer and consumer, is estimated to produce over 160 million tonnes in 2015-16, as against 146.31 million tonnes last year.

Unified insurance package for farmers to cover life

The components in the united package include the Fasal Bima Yojana, fire insurance, agriculture pump-set insurance and life insurance



or a premium of Rs 5,145 a year, farmers will be able to avail of minimum [insurance](#) cover for their crop, tractors, pump-sets, self and accidents under a package being readied along with the Pradhan Mantri [Fasal Bima Yojana](#)(Prime Minister's Crop Insurance Scheme).

This package of seven products will be first tried in 45 districts. Expansion will be decided after the response. The Fasal Bima Yojana has officially already been launched for the entire country.

"Under the united package, any farmer who wants to avail the huge subsidy given under the new crop insurance scheme has to compulsorily go for any three components out of a total package of seven products. This would guarantee his full financial security," said a senior government official.

The Centre and state governments plan to subsidise up to 90 per cent of the total premium a farmer has to pay under the new crop insurance scheme.

The seven insurance components apart from Fasal Bima Yojana in the united package are fire insurance; a personal accident coverage of Rs 2 lakh under the Pradhan Mantri Suraksha Bima Yojana; agriculture pump-set insurance; agriculture tractor insurance provided by a third party; life insurance through the Pradhan Mantri Jeevan Jyoti Bima Yojana, and student safety insurance.

The entire package will be offered by the state-run Agriculture Insurance Company or any other general insurance company.

Officials said a minimum annual insurance premium of Rs 5,145 has been calculated, presuming an average holding of 1.5 hectares and a tentative insurance cover of Rs 20,000 a hectare.

The accident coverage and the life coverage will be as provided by the already existing Pradhan Mantri Suraksha Bima Yojana and Jeevan Jyoti Bima Yojana. That apart, officials said the existing weather-based crop insurance scheme (WBCIS) launched by the earlier government would also be in circulation and is not being withdrawn. The only difference is that the premium under WBCIS would have to be at par with the Fasal Bima Yojana, which is 1.5 per cent for all rabi crops and a flat two per cent for all kharif crops.

"It is up to the state governments whether they want WBCIS or opt for the new Fasal Bima Yojana," the official explained.

Centre's finger on pulses cartel

Seeks help of probe agencies



As pulses sowing in the ongoing rabi season shows signs of faltering, the ministry of consumer affairs is planning to tighten the noose around those it suspects would artificially raise prices.

It has sought the help of Delhi Police's economic offences wing, the Competition Commission of India, the Enforcement Directorate and the Central Bureau of Investigation to keep an eye on importers and hoarders indulging in cartelisation.

Pulses production in 2014-15 (July to June) dropped to 17.2 million tonnes (mt) from 19.3 mt the previous year. Output is not expected to rise much in 2015-16, fuelling speculation of another spike in retail prices.

India's annual consumption is 22-23 mt and the difference is met through import, which fluctuates between three to five mt annually.

The Centre cleared a proposal a few months earlier to import around 10,000 tonnes over the next few months.

Prices in the retail markets had crossed Rs 200 per kilo in October due to fall in domestic output by two mt to 17.2 mt in the 2014-15 crop year.

Although the Centre is planning a crackdown on hoarders and importers by using the Essential Commodities Act, a discussion paper floated by [NITI Aayog](#) had warned injudicious use of the Act could make private investments in agriculture marketing and storage infrastructure unattractive. Commodity picks- 8 February 2016

Barley

Barley prices in Jaipur [markets](#) are at Rs 1,493 a quintal. Prices are expected to trade lower towards Rs 1,460 a quintal in the next couple of weeks, following higher stocks and improved weather along with likely lower export demand.



Chana

Chana prices are likely to correct further on dull demand and improved supplies. Domestic harvesting, coupled with arrival of imports, has improved the domestic supply considerably. The drop in temperatures and rainfall during the past week will improve the soil moisture and thereby improve yield prospects in Madhya Pradesh and Rajasthan. Hence, we opine chana prices are likely to edge lower in the short term. Potential target for spot Chana is Rs 4,250-4,200 a quintal.



Prerana Desai,

Vice-president, research, agri value chain, Edelweiss Integrated Commodity Management


THE TIMES OF INDIA

IARI releases 7 new varieties of crops



New Delhi: In a sign of the strength of India's public research institutions, Indian Agricultural Research Institute (IARI) released seven new varieties of field crops including wheat, rice, chickpea, pigeon pea and mustard and identified 11 varieties of high-yielding agricultural and horticultural produce during 2015.

All these varieties are not just resilient to several biotic (living organism like pests and insects) and abiotic (nonliving factors like light, temperature and water) stresses but also have enhanced nutritional quality.

IARI, the flagship institute of Indian Council of Agricultural Research (ICAR), announced the release and identification of these varieties during its 54th convocation in the presence of President Pranab Mukherjee on Friday.

These varieties include the newly-developed pigeon pea (arhar dal) and mustard which have early maturity and high yielding properties.

Both are considered quite important as they can help in reducing India's

import bills of pulses and edible oils in the long run.

Since India's current annual import bills on pulses and edible oils are Rs 10,000 crore and Rs 56,000 crore respectively, the focus of public research institutions has been on developing varieties which can fill the huge demand-supply gap.

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HORTICULTURAL VARIETIES

Key horticultural varieties identified by India's public research institutions (ICAR-IARI) in 2015

<p>1 Cauliflower Pusa Betakesari</p> <ul style="list-style-type: none"> > This is the first-ever indigenously bred bio-fortified beta carotene rich variety > It'll tackle beta carotene deficiency related malnutrition problem in India 	 <p>> It can be stored for 15 to 20 days</p>	<p>3 Cucumber Pusa Seedless Cucumber-6</p>  <ul style="list-style-type: none"> > Improved variety of seedless cucumber which can be cultivated in protected condition > Extra early harvest is possible > Can be cultivated off-season (November-March) 	<p>yield and increased shelf life</p> <ul style="list-style-type: none"> > Fruits get ready for harvest in about 80 days (early harvest)
<p>2 Sarda melon Pusa Sarda</p> <ul style="list-style-type: none"> > This is the first variety of Sarda melon which can be grown under net-house in north Indian plains > Fruits get ready for harvest in about 85-90 days 		<p>4 Musk Melon Pusa Madhurima</p> <ul style="list-style-type: none"> > Unique-shaped musk melon with high 	<p>5 Round melon Pusa Raunak</p>  <ul style="list-style-type: none"> > First early maturing variety of round melon for spring and summer season for north Indian plains > Flesh is white, tender, less-seeded and has good cooking quality

(ICAR-IARI identified these varieties, done their field trials and zeroed in on the suitable climatic zone for cultivation. These varieties will be ready for commercial release this year)

Compared to normal mustard varieties which possess more than 40% of erucic acid, PM-30 possesses less than 2% of erucic acid using conventional breeding method.

Seven of the 11 varieties, identified by the institute last year, are of different horticultural products. They include Pusa Betakesari (cauliflower), Pusa Sarda (Sarda melon), Pusa Madhurima (musk melon) and Pusa Bahar (Marigold)

These varieties have been around as wild growth in different parts of the country. The institute identified them and put them on trial in different climatic zones for cultivation.

U'khand to develop 550 native crop clusters to help stem migration from hill villages

Dehradun: In a bid to stem migration from villages in the Uttarakhand hills, the agriculture department in a first of its kind initiative, has decided to develop 550 native crop clusters wherein crops exclusive to Uttarakhand would be sown.

As part of the initiative, priority would be given to the cultivation of grains like mandua, sawan, ramdana, bhatt, buckwheat and horse gram. In order to ensure that the tradition of cultivating local crops gets a boost, the state government will start producing certified seeds of grains like mandua and

jhangora. Agriculture department sources said that around 1100 kwintal seeds of mandua had been purchased by the department of which 300 kwintal had been bought from Andhra Pradesh. They added that in order to ensure the success of the scheme, they will ensure water availability through various irrigation projects in those areas where water-scarcity has hit farming severely.

Elaborating on the need to cultivate these crops, Gauri Shankar, director of Uttarakhand agriculture department, said, "Local crops such as mandua and jhangora are in high demand at not just the national but also the international level. In a recent national fest, farmers from Uttarakhand had sold mandua at Rs 60 per kg which in local market is sold at Rs 18 per kg. It is essentially due to the rising awareness in people about mandua's high fibrous, protein and medicinal value (it is consumed by diabetic patients) that its demand has escalated. Through this initiative, we are trying to bring locals back to their farms by encouraging them to grow these high value native crops."

Of the 550 clusters of native crops, 200 clusters would be purely organic and managed by Uttarakhand Organic Commodity Board whereas the remaining would be directly handled by the agriculture department.

Uttarkashi will have maximum 72 clusters followed by Almora (55) and Tehri (45). These districts are registering rampant migration as per agriculture experts.

In 2014-15, Uttarakhand had produced around 1.5 lakh metric ton mandua and 77,000 metric ton sawan (barnyard millet) respectively. Both the crops have registered maximum production in Garhwal region as per the data.

Uttarakhand has started offering Rs 200 per kwintal on production of mandua and also ensured a fixed price of Rs 18 per kg to give fillip to the production of the grain.

More sops in store for youth, old, farmer, poor

Lucknow: To consolidate his 'vikas purush' image, in budget for year 2016-17, chief minister Akhilesh Yadav's focus is on social safety schemes, doling out cash benefits to the youth, farmers, poor and pensioners.

Claiming to have launched nation's largest pension plan in Samajwadi Pension Yojana, giving away Rs 500 to everyone irrespective of caste creed and religion and 45 lakh persons having availed the scheme, more funds may be allocated for it in the budget.

Another direct benefit scheme is aimed at covering lakhs of farmers by compensating them with Rs 5 lakh in case of death and Rs 2.50 lakh in case of serious injury or disability. This scheme has been approved by the cabinet and the budget would earmark funds for the farming community. This scheme will be applicable to any farmer who is owner of land .The government has already given huge relief to farmers and rural population by deciding to implement the new land reforms in the state for the first time since 1951.

To provide economic activity to them the government is likely to provide them subsidy and start up funds for their self-employment. Unlike the past, when the Samajwadi Party government gave them unemployment allowance, the government is planning this time to provide funds to start their own business. This is after facing criticism from for not providing jobs to youth. SP is likely to increase the amount for 38 lakh old age pensioners, 16 lakh widow pensioners and 8 lakh disabled.

Winter showers bring cheer to western UP wheat farmers

Meerut/Bijnor: Winter showers in western UP have brought cheer to the region's wheat farmers, who faced a crisis last year due to unseasonal hailstorms in March. The rain, experts said, will bring down temperature and will improve the yield from wheat.

Ashok Kumar, professor at Sardar Vallabhai Patel University of Agriculture's department of soil science, said, "Light rain at this time of the year is very good for the wheat crop. It brings temperatures down. Since wheat is a winter crop, cold temperature is necessary for it to grow. There are certain biochemical reactions that only take place when the temperatures are low. If there is no winter, those reactions don't take place and the crop ends up being really thin and long. A thin wheat crop means the yield will be poor. If the weather stays cold, the crop gets thick and the yield is much better."

He added saying, "Last year, rain had wreaked havoc in March because it was accompanied by a hailstorm. Rain at this time is beneficial for farmers." The city recorded 0.4 mm rainfall on Sunday as the minimum temperature was 11.8 degrees Celsius and maximum temperature was 20.2 degrees Celsius. The diurnal range of temperature (difference between maximum and minimum temperatures) was 8.4.

Bijnor, too, saw substantial rainfall on Sunday. The minimum temperature in Bijnor was 9.2 degrees Celsius and maximum was 17 degrees Celsius. The diurnal range was 7.8. Bijnor district agriculture officer Pramod Sirohi said, "A total of 1.35 lakh hectare of land is used to cultivate wheat in the district. This year, the temperatures were not as low as they should be so the wheat crop was suffering. However, with rainfall on Sunday, things are expected to improve."

He added saying, "Last year, the recovery of wheat was made at a rate of 36 quintal per hectare. As long as warm winds don't start blowing early and the temperature remains conducive to the growth of wheat, we may have a better output of wheat this year."

DECCAN Chronicle

Virus spread killing honeybees human-made: study

The finding suggests that the pandemic is human-made rather than naturally occurring.



The findings were published in the journal *Science*.

London: The spread of a disease that is decimating global honeybee population is human-made and driven by European bee populations, a new study has claimed.

The study found that the European honeybee *Apis mellifera* is overwhelmingly the source of cases of the Deformed Wing Virus infecting hives worldwide.

occurring, with human trade and transportation of bees for crop pollination driving the spread.

Although separately they are not major threats to bee populations, when the Varroa mite carries the disease, the combination is deadly, and has wiped out millions of honeybees over recent decades, researchers said.

Varroa feed on bee larvae while the Deformed Wing Virus kills off bees, a devastating double blow to colonies.

The situation is adding to fears over the future of global bee populations, with major implications for biodiversity, agricultural biosecurity, global economies, and human health, researchers said.

"This is the first study to conclude that Europe is the backbone of the global spread of the bee killing combination of Deformed Wing Virus and Varro," said Lena Wilfert from the University of Exeter in UK.

"This demonstrates that the spread of this combination is largely human-made - if the spread was naturally occurring, we would expect to see transmission between countries that are close to each other, but we found that, for example, the New Zealand virus population originated in Europe," Wilfert added.

This significantly strengthens the theory that human transportation of bees is responsible for the spread of this devastating disease, researchers said.

"We must now maintain strict limits on the movement of bees, whether they are known to carry Varroa or not. It is also really important that beekeepers

at all levels take steps to control Varroa in their hives, as this viral disease can also affect wild pollinators," Wilfert said.

Researchers analysed sequence data of Deformed Wing Virus samples across the globe from honeybees and Varroa mites, as well as the occurrence of Varroa.

They used the information to reconstruct the spread of Deformed Wing Virus and found that the epidemic largely spread from Europe to North America, Australia and New Zealand.

They found some two-way movement between Europe and Asia, but none between Asia and Australasia, despite their closer proximity.

Researchers also looked at samples from other species suspected of transmitting the disease, including different species of honeybee, mite and bumblebees, but concluded that the European honeybee was the key transmitter.

"Our study has found that the Deformed Wing Virus is a major threat to honeybee populations across the world and this epidemic has been driven by the trade and movement of honeybee colonies," said Roger Butlin from the University of Sheffield in UK.

The findings were published in the journal Science.

THE ECONOMIC TIMES

Budget 2016: Agriculture Ministry seeks animal health card scheme

The new scheme has been proposed as at present out of 300 million bovines, only 85 million are milk producing, leaving large number of unproductive animals.

NEW DELHI: Aiming to control animal diseases and boost milk output, the Agriculture Ministry has sought measures like a new scheme on animal health card, e-market platform for bovine germplasm and increase in allocation for Rashtriya Gokul Mission in Budget 2016.



In its pre-Budget recommendations, the Agriculture Ministry has proposed launching of a 'Pashu Sanjeevani scheme' with components of health cards, emergency helpline and health services at door step, according to sources in the Finance Ministry.

The ministry has sought funds worth Rs 140 crore to cover 85 million milk producing animals under the scheme which would aim to control spread of animal diseases, enhance productivity and improve quality of livestock, the sources said.

The proposed animal welfare scheme will identify and trace animal with unique identification number, upgrade information network on animal productivity and health to national data base and create a dedicated helpline and doorstep delivery of health services, they added.

In the absence of an authentic market for quality and disease free bovine germplasm, the ministry has proposed creation of 'e-Pashu Haat' connecting breeders state agencies with stakeholders on an online platform, thereby maintaining identification and traceability of germplasm sold.

The ministry has said that the proposed e-market will enhance availability of disease-free germplasm with known genetic merit, provide a one stop portal for bovine breeders, no involvement of middlemen in sale and purchase of animals, allow sale of animals tagged with animal wellness card besides propagating indigenous bovine breeds and raise milk output.

That apart, the sources said the ministry has suggested a scheme to promote sex sorted semen to increase female population to make milk production more remunerative to farmers.

The new scheme has been proposed as at present out of 300 million bovines, only 85 million are milk producing, leaving large number of unproductive animals.

The ministry has also proposed the Finance Ministry to make Rashtriya Gokul Mission (RGM) -- which works towards development, preservation and conservation of indigenous breeds -- a separate scheme with higher fund allocation, sources added.

The RGM is a focussed project under National Programme for Bovine Breeding and Dairy Development with an outlay of Rs 500 crore during the 12th Five Year Plan.

Milk production in India, the world's largest producer and consumer, is estimated to produce over 160 million tonnes in 2015-16, as against 146.31 million tonnes last year.

How Sikkim could offer lessons to other states in organic farming



Sikkim could offer lessons to other states in encouraging farmers to take up organic farming, but getting them to stick to it is the real challenge.

It's 8:00 am on a Sunday and outside Denzong Cinema in Gangtok's Lal Bazar, the otherwise languid atmosphere is punctured by grocers of two kinds. On one side of the cinema are those who sell vegetables, fruits and spices sourced from outside Sikkim, mostly from Siliguri, 115 km south in

West Bengal. On the other side of the cinema, almost completing a triangle, are farmers from the state who have come to sell their own produce.

Both groups are in the process of unloading their wares off trucks and chaos reigns supreme with decisions to be made regarding who should climb atop the vehicles to get the gunny sacks down and how much the drivers need to be paid. The distance separating them is not more than 200 metres and, while the traditional grocers are soon set for business, the farmers are nowhere close.

The latter are taking their produce from the trucks to a refurbished space on the top floor of a shopping complex. Called the 'Sikkim Organic Market', it is only a couple of weeks old. While earlier the farmers did not have a dedicated area in the market, now they do. It is part of the state government's plan to push organic farming.

Naturally Pricey Two hours later, all the stalls in the market, represented by farmers' groups from different parts of the state, are occupied. They are selling everything from pulses to greens to oranges to pickles made from the local dalle chillies, all of which are organic — meaning they were grown without the use of chemicals. The organic alternatives to chemical fertilisers are cow manure and compost from plant residues, among others, and the alternatives to pesticides include clay and extracts from neem, garlic and mushroom.



As we approach Lalita Tiwari's stall, a customer picks up a bundle of greens and asks her how much they cost. When she says Rs 20, he raises his

eyebrows and mutters something and walks away. If Tiwari is disappointed she doesn't let on. She just smiles and says there will be enough customers who will react differently. She represents the Parijat Self Help Group of Lower Sadam, a village in south Sikkim district, about 75 km from Gangtok.

While the price difference between the organic and conventional varieties of some vegetables may not be so stark, with the organic variety 20-25% pricier, among spices like turmeric the difference could be three to four times. "When people ask us why it's so expensive, we tell them it's organic and it's a lot of work. Most people understand," says Tiwari, who does business worth between Rs 2,000 and Rs 3,000 a day.

Raju Chhetri, another farmer from near Gangtok, says the gulf in prices does not worry him, since any delays in transporting vegetables from Siliguri could bring their prices up to a par with the local varieties. Sikkim, a small state in east India that borders China, Nepal and Bhutan, had a population of just 0.61 million in 2011, but had tourist arrivals of 0.56 million in 2014. The tourists combined with the floating population necessitate the sourcing of foods from neighbouring states like West Bengal. The farmers in the market, including Tiwari and Chhetri, say they have never used chemicals in their fields. S Anbalagan, executive director, Sikkim Organic Mission (SOM), says the state's use of chemical-based fertilisers was 8-10 kg per hectare per year in the early 2000s compared to 200 kg in some large states.

That could be one of the reasons why it was not hard for the Sikkim government to convince around 66,000 farmers dependent on agriculture to switch to organic farming. The government in 2003, led by chief minister Pawan Chamling, made a declaration in the assembly to make the state entirely organic. "We initially targeted five crops — buckwheat, ginger, turmeric, large cardamom and orchid — and then we expanded to other crops," says Anbalagan.

After pilot projects covering about 8,150 hectares, SOM was established in 2010 and now about 99% of the state's cultivable area of 77,000 hectares is under organic management.

Government Intervention Prime minister Narendra Modi was in Gangtok on January 18 to inaugurate the Sikkim Organic Festival. He referred to Sikkim's strides in organic farming on his radio address, Mann ki Baat, on

January 31, and spoke about two young entrepreneurs who had started up an organic farming venture.

Crucial to Sikkim's transformation was the government's decision to bear the cost of the project, paying Rs 8,400 per hectare to have the land certified organic for the first three years. The government has spent Rs 66 crore on SOM since its inception. The certification of the land has been done by six of twodozen accredited agencies who follow the standards laid down in the National Programme for Organic Production, which has been in place since 2001.

Aiding the farmers with the requisite knowhow and paperwork are 14 service providers, including government entities and private companies. Under a state law, anybody found using or storing chemical fertilisers or pesticides can be penalised Rs 1 lakh and/or imprisoned for up to three months.

According to the standards, it takes three years for a piece of farmland to be certified organic; the certifying agency assesses the land once a year during the period.



The farmer will have to let the agency know what she plans to grow in that soil and the inputs she is going to use. The produce from that soil will naturally be organic, unless they are processed, which has a different procedure.

During the three years, the soil will cleanse itself of the chemicals and no particular treatment is required. After the first three years, the land has to be certified every year. In case of serious violations, the land is sanctioned and can be declared organic only after another three years. Sandeep Bhargava, chief executive of Jaipur-based OneCert Asia Agri Certification, which has certified around 40,000 hectares in Sikkim organic, says it is important that farmers have access to the market.

"In Rajasthan, once the government stopped funding the certification, some farmers went back (to conventional farming). Only those farmers who have been provided a link to the market have continued organic farming."

One of the reasons why market linkage is essential is the drop in yield of 20-50% in the initial years of conversion. While the value of the produce may increase, there have to be takers for it. The organic food market in India in 2014 was estimated to be \$0.36 billion, which is expected to nearly treble to \$1.36 billion. The total area in India where organic farming is practised dropped to 4.72 million hectares in 2013-14, the last year for which data is available, from 5.21 hectares the previous year. Even the quantity of India's organic produce dropped 7.5% in the same period to 1.24 million tonnes.

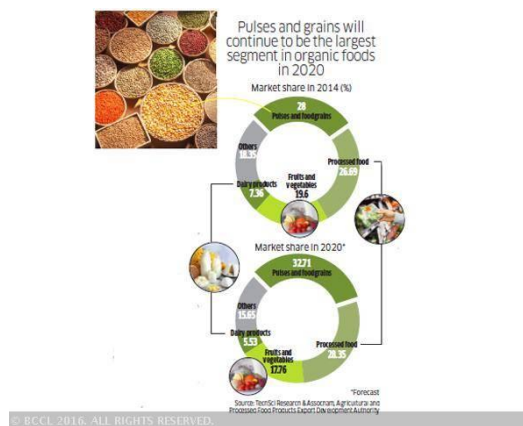
Since about three-fourths of India's organic food produce is exported — oilseeds account for 70% of the exports and North America and the European Union are the biggest importers of Indian organic food — food companies gripe that the supply is not meeting the local demand.

Sanjeev Azad, executive director of operations at Conscious Food, one of India's largest processed organic food makers, says for a farmer selling most of his produce to an exporter is better than selling to 500 retail outlets in India. "The domestic market gets what is left after exports."

Efforts for Awareness Renzino Lepcha, chief operating officer of Mevedir, an agri company that is one of the service providers to farmers in SOM, believes organic farmers will have to do more than just grow crops. "They have to value-add, as in case of dried chillies and ginger, and sell them to organic food companies." Value addition comes in handy for certain crops in

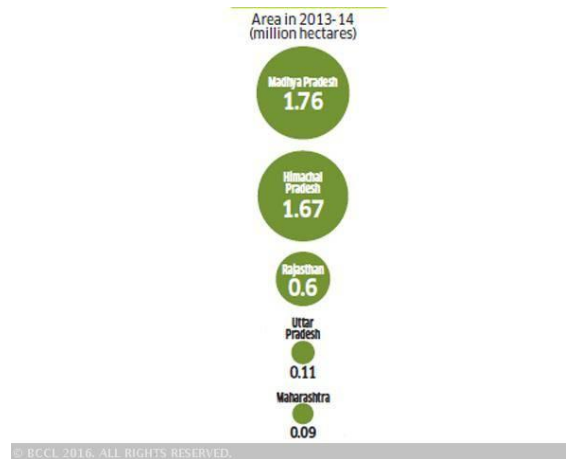
remote, landlocked states like Sikkim, from where transporting perishable goods is both laborious and expensive.

The demand for organic food products is for now largely restricted to a small section of the country's urban population. According to TechSci Research, organic food accounted for just 2.5% of organised retail stores' total food sales in 2012-13. Awareness about organic food is growing thanks to increasing evidence about the detrimental effects of inorganic food on our health and of chemicals on our land.



Umendra Dutt, executive director of Kheti Virasat Mission, a non-governmental organisation, says organic farming is not mere agriculture. "It's about man's relationship with food. Even the poorest of the poor should be able to eat organic food." For that to happen, he says, organic farming, or ecological agriculture as he terms it, should be mainstreamed. "The syllabus in agricultural universities should change. Agri education is stifling sensitivity to land and food."

Besides Sikkim, the states that are active in organic farming are Madhya Pradesh, Himachal Pradesh and Rajasthan, which are the top three in India in terms of absolute area under organic farming (See Madhya Pradesh has more area...). Other states that have also been active in promoting organic farming include Kerala and Mizoram, the latter passing a legislation in the assembly for the same in 2004, the first state to do so.



While these states' efforts are certainly commendable, they are only the first step in the long-term sustainability of organic agriculture, which requires an active market for its produce, both here and abroad, which in itself is a result of understanding the centrality of food to our well-being.

Decision on genetically modified Mustard after 'due deliberations': Government



While the minister said public health will not be compromised, he did not rule out the use of science for increasing agricultural productivity.

NEW DELHI: Taking a cautious stand on approving commercial farming of genetically modified Mustard, government today said a decision will be taken after "due deliberations" amidst strong opposition by activists and farmers against the commercialisation.

After a meeting of Genetic Engineering Appraisal Committee (GEAC), the apex body that clears GM field trials in India, to deliberate on the feasibility of commercial farming of GM mustard, Environment Minister Prakash Javadekar said government will not rush through the decision on the issue.

"Today, the application for commercialisation of GM Mustard was there for consideration. We have sought some more information on certain aspects of the data. We will take due deliberations before reaching any decision and will not rush through the decision," the minister said.

His remarks came even as protesters staged dharna outside the ministry under the banner 'Sarson Satyagrah' and submitted a petition to him demanding that the government should not go ahead with commercialisation of GM mustard. Delhi Minister Kapil Mishra also joined the protesters.

RSS-affiliated Swadeshi Jagran Manch is also opposing any move for commercialisation of GM mustard and has raised several technical issues including fears of cross-pollination between GM and non-GM crops.

Javadekar also clarified that today's meeting of GEAC did not intend to give permission to GM Mustard. "It was a rumour that we were giving permission today. There was no such agenda in the meeting," he added.

While the minister said public health will not be compromised, he did not rule out the use of science for increasing agricultural productivity.

"We cannot stop science from progressing. We cannot starve our population. There are other good alternatives of increasing our productivity like organic farming and using biotechnology for farming but at the same time the scientific methods are also important," he said.

Earlier this week, the Supreme Court had also sought explanation from the government on its proposed move to introduce GM Mustard.

"Court has asked us information on the issue and we will submit it in 15 days," the minister said.

Reacting to the allegation by activists and farmers that GEAC is going ahead on the issue in a secretive manner, Javadekar said the details that are legally important are duly provided.

"It is not a cricket match where regular commentary is required. Whatever is legally required is provided through our website," he said.