

Blow to soya farmers

Soya bean crop, cultivated extensively in various parts of Karimnagar district, withers due to prevailing dry weather conditions causing huge loss to the farmers

Soya bean crop, which is cultivated extensively in various parts of Karimnagar district, withered due to the prevailing dry weather conditions and partly due to unseasonal rains in the first half of September, causing huge loss to the farmers.

Following a bumper harvest in the last kharif season and good minimum support price of more than Rs 3,000 per quintal , farmers cultivated soyabean crop this kharif too expecting to reap riches. Unfortunately, the bad weather conditions shattered their hopes. In the last kharif season, soyabean was cultivated in 5,225 hectares but in this season, farmers cultivated soya bean in 45, 758 hectares due to good demand.

Before the start of kharif, the farmers had formed serpentine queues for the collection of soyabean seeds provided on subsidy by the government. The crop was cultivated in June and July. However, following the prevailing dry weather conditions in the month of August and unseasonal rains in the first week of September had caused extensive damage to the soyabean crop and started withering away.

Usually, the soyabean crop production would be around 6 to 14 quintals per acre. But, the farmers are worried lot over the decline of production to less than three quintals per acre. The farmers had invested more than Rs 12,000 per acre for cultivation of soya bean but are unlikely to

get even Rs 5,000 per acre due to poor yield.

Several farmers complain that the crop failed due to supply of poor quality of seeds, the Agriculture Department authorities say that the crop withered due to change in the climatic conditions and pest attack. The crop was sown in June and there were no rains till September first week. Besides, the dry weather conditions had affected the growth of the crop, they argued.

Study to be taken up to tackle white stem borer menace

Union Minister of State (Independent Charge) for Commerce and Industry Nirmala Sitharaman, who chaired a meeting of stakeholders of the coffee industry here on Monday, said a study is to be undertaken soon for a solution to white stem borer menace plaguing the Arabica crop.

As a first step, a small group of members belonging to coffee-growing areas will be formed to get a better understanding of the issue affecting crop productivity. With the help of Indian Council of Agricultural Research (ICAR), the group will identify people with domain expertise to conduct the study. A timeframe will be set for the study report on "what is prevailing as knowledge in this area. Before the next crop season, we hope to come up with some specific suggestions", she said. Some participants at the meeting said it was a 100-year-old problem.

Meeting to be held

Ms. Sitharaman, who briefed presspersons after the meeting attended by MPs representing coffee-growing areas in south India and Home Minister K.J. George, said another decision was to convene a meeting with insurance companies. The meet, to be convened by Ministry of Commerce and the Coffee Board, is necessitated as coffee growers complained that they gain little by being insured.

She said against a huge premium paid by growers to insure crops, they seemed to get little or no benefits when there was a crisis.

Other decisions at the meeting included inter-ministerial discussions to facilitate technology transfer towards indigenous manufacture of machines used in the plantations. Large growers were importing such machines to tide over the labour shortage.

Other issues discussed

Manufacture of such machines in the country would make them affordable for small growers. Quality production of seeds, promotion of exports and drinking coffee in the country were some of the issues discussed at the meeting. On the State government's proposal to take over deemed forest areas where coffee was being grown and some growers receiving notices, Mr. George said that those having up to 10 acres of such land would be not evicted. Written orders to this effect, however, could not be issued in view of a court order.

The State government was taking steps to get the order vacated and had also formed a committee to look into such land of over 10 acres.

Both Mr. George and Shobha Karandlaje, MP, said steps should be taken to modify the orders of the Kasturirangan committee report on Western Ghats for the benefit of the coffee industry.

Bhoo Chetana Plus not being given the push, says Agriculture Minister

Aim is to help farmers get better yield by adopting technology

Minister of State for Agriculture Krishna Byre Gowda on Monday expressed displeasure over the implementation of Bhoo Chetana Plus programme in Chikmagalur.

The Minister said the objective of providing benefits of advanced technology to farmers had not been given due attention.

He was speaking after visiting a maize farm at Emmedoddi village near here.

Mr. Gowda said the department had involved noted companies to help farmers get better yield by adopting advanced technology under the Bhoo Chetana Plus programme. The programme was being implemented on a pilot basis in Chikmagalur, Tumkur, Bijapur and Raichur districts.

A maize farm in Emmedoddi was chosen for experimental cultivation.

"The programme includes choosing the right variety of seeds, suitable for local soil and weather conditions. The crop is in harvest stage and the farmer is happy with the yield. But the officers have not given attention to spread awareness about the technology and the experiment done among other farmers," the Minister said.

The objective of the programme was to provide technology for farmers from pre-sowing stage to harvest. Representatives of various companies and officers of the department guide farmers at all stages about advanced farming.

The Minister said he had instructed the officers to bring other farmers to the field where experiments were done and explain about the positive impact of technology.

Employees' strength

Mr. Gowda said the employees' strength in the Agriculture Department had increased, after the department merged with the Watershed Development Department. This will help officers spend more time in fields and with farmers, he said.

Election results

On the election results in Maharashtra and Haryana, he said the Congress had been in power for 15 years in Maharashtra and 10 years in Haryana.

"People have voted for change and the Congress accepts the verdict," he said.

Coimbatore gets 61.9 mm of rain

North East Monsoon for Coimbatore has begun on a very positive note. Or, so it appears from the data available from the Tamil Nadu Agricultural University.

The Agro Climate Research Centre has said that in the last 15 days, the district had recorded 61.9 mm rainfall, which was nearly 20 per cent of the average rainfall received for the North East Monsoon period – 328.9 mm.

With more than two months to go for the monsoon to end, the district could get its entire quota, it predicts. The average rainfall for the district was 20 mm between January and February), 150.3 mm between March, and May), 189.8 between July, and September, and 328.9 between October, and December.

During the South West Monsoon 764 mm, almost three times the average rainfall, was recorded.

But the rainfall does not reflect the reality, says T.N. Balasubramanian,

former Head, Agro Climate Research Centre.

The rainfall figure shot up to 764 mm because of heavy showers in Valparai, and areas near the Western Ghats. There are also areas in the district that received scanty rainfall – for instance, Sultanpet.

Therefore, the spread of the rainfall should also be taken into account before declaring if the rainfall is below average, normal or above average.

More or less supporting Mr. Balasubramanian's explanation, farmer leader P. Kandasamy says that for Coimbatore farmers South West Monsoon was a failure. But he hastens to add that the North East Monsoon appears to be good. The rain will help sugarcane, banana, maize, and vegetable farmers.

The monsoon will help recharge ground water. Farmers will be able to save on power by not operating pump sets, and they can grow fodder crops, says K. Velayudham, Director, Crop Management, Tamil Nadu Agricultural University.

Good monsoon also means good cultivation of country vegetables, and that translates to good price for consumers.

MONSOON

Drizzle soaks Thanjavur

With the northeast monsoon gathering momentum, Thanjavur district received steady drizzle on Monday. The District Collector said stern action will be taken against those trying to divert agricultural inputs meant for the district.

Rain continues to lash delta region

Moderate yet steady drizzle continued to wet Thanjavur district on Monday as the northeast monsoon advanced further threatening to bring more rains in the days ahead. When there was respite from rain, the sky remained dark and cloudy all through the day. The drizzle did not escalate into a heavy downpour in many places in the district. Overall, the district recorded a total of 672.10 mm in the 24 hours ending 8.30 a.m. on Monday. With the rains spurring agricultural activity, District Collector N.Subbaiyan reviewed the availability of farm inputs and assureds farmers that stocks of fertilizers and other inputs were at hand with the cooperative outlets and private dealers.

Farmers cautioned on excessive use of urea

With farm activities gaining momentum thanks to intermittent rains after the onset of northeast monsoon, the Agriculture department has cautioned farmers against excessive use of urea, the nitrogenous fertilizer widely used as a top dressing for paddy crops.

Excessive application of urea would help the crops grow quickly and turn greenish in colour, but it would also bring pest and diseases to the crops and affect the yield, S.S Shaiek Abdullah, Assistant Director of Agriculture (Quality Control), has said in a press release here on Monday. Instead of applying urea alone, the farmers could apply other nitrogenous fertilizers such as Ammonium Chloride and Ammonium Phosphate. They could also apply DAP, Potash and NPK complex as a combined fertilizer, he said adding balanced application of nutrients would ensure healthy growth of crops.

As per the recommendations, farmers could use 44 kg of urea per acre in rain-fed areas and 64 kg in semi rain-fed areas, he said adding instead of applying the required quantity at one go, the farmers could split the same in two or three doses and apply them by mixing with neem cake at a ratio of 5:1.

He said paddy crops in 1.05 hectares in the district were in good condition thanks to the recent rains. The district received 535 mm of rainfall so far since January this year, exceeding the normal rainfall level of 508 mm.

Mr. Abdullah said that during this season, the farmers had so far procured 2,446 tonnes of urea, 445 tonnes of DAP, 205 tonnes of Potash and 628 tonnes of NPK complex from private dealers and from Primary Agriculture Cooperative Credit Societies (PACCS). As on Monday, the stock position stood at 1,711 tonnes of urea, 1,399 tonnes of DAP, 175 tonnes of Potash and 1,236 tonnes of NPK complex, he said.

Joint Director N.V. Krishnamurthy said the district administration was taking steps to ensure free availability of fertilizers at prices fixed by the government. He warned action against dealers if they failed to display the price list and stock position, he said. Surprise inspections were conducted in the last three days and show cause notices issued against those who violated provisions of Fertilisers Control Order, 1985, he said.

Workshop on horticulture

The State government will be organising a one-day workshop on the latest trends in fruit crops at Fruit Research Centre (FRS) in the district headquarters, on Tuesday.

Minister for Agriculture Pocharam Srinivas Reddy will formally inaugurate the workshop.

During the technical sessions, senior scientist A. Bhagawan will explain

the recent trends of canopy management in mango and guava.

Paper presentations

K. Jyothirmayi Madhavi and K. Prabhavathi will also present papers on nutrient management in mango and guava, and recent advances in post-harvest management in mango for the domestic and international market.

Food and Agri-Aqua Expo at KUFOS

: The sixth edition of India International Food and Agri Expo will get under way here from October 30.

The five-day exhibition will be organised jointly by Kerala University of Fisheries and Ocean Studies, Panangad, and Foundation for Organic Agriculture and Rural Development, in association with Nabard, Department of Fisheries, Department of Agriculture and Animal Husbandry, MPEDA, Directorate of Cashew and Arecanut, Coconut Development Board, Kerala Agricultural University and Veterinary University.

The event will have exhibitions on agro machinery, India organic fair, processed food, animal husbandry; organic coconut based farming systems and farm mechanisation among various other items.

The expo will have on display various equipments employed for farming, irrigation, plant protection and harvesting and will conclude on November 3.

Agro-industrial fete from January 16

The Agro-Industrial festival of the district panchayat, to be held under its 'Vision-20' project from January 16, will have 100 stalls of various

private and public sector enterprises.

The 10-day exhibition would be a curtain-raiser to the upcoming development programmes of the district panchayat in the agricultural and industrial sectors, a press release issued here on Monday said.

India's total rice output unlikely to fall below 100 mn tonnes

The country's overall rice production is unlikely to slip below the level of 100 million tonnes this year despite some impact on the kharif crop in few states due to rains following 'Hudhud' cyclone, a top government official said.

Rice production stood at a record 106.54 million tonnes in the 2013-14 crop year (July-June). The government is aiming to achieve 106 million tonnes this year. Currently, the kharif (summer) rice is ready for harvest.

"Overall rice production will definitely be below last year's level but it should not fall below 100 million tonnes," Agriculture Secretary Ashish Bahuguna said.

The kharif rice contributes more than 80 per cent of the total rice production. The government has projected lower kharif output of 88.02 million tonnes for this year taking into account the deficient monsoon rains.

Now that the kharif crop is ready for harvest, the recent cyclone 'Hudhud' has affected the crop not only in Andhra Pradesh but also in other states, resulting in possible further drop in overall rice production.

Asked about impact of cyclone on kharif rice crop, Mr. Bahuguna said: "There will be some damage not only in Andhra Pradesh, but in others states like Odisha, Chattigarh and Jharkhand as well."

Rainfall due to cyclone in some places will boost prospects of late sown crop, while in some places it will damage the crop. "However, we are yet to make the assessment. We expect we will make up from improved yields," he said.

The US Department of Agriculture (USDA) has also pegged India's rice production this year to be at 100 million tonnes, which includes 87 million tonnes of kharif rice and 13 million tonnes of rabi rice.

"Continued deficient rains and 'normal' cyclones in eastern coast during October/November could further affect the harvest of kharif rice and planting prospects for the upcoming rabi rice," the USDA had said in its latest report.

Innovative farmer among five award winners

Farmer Gabrial Stany Veigus of Perar, a retired forest official who turned a 37-acre land into a model farm with innovative practices, is among the five persons who will receive the Rachana awards, instituted by Rachana, the Catholic Chamber of Commerce and Industry for 2014.

Mr. Veigas planted 3,400 coconut saplings, mango, rambutan, cashew, grafted variety of jackfruit and breadfruit in the last 10 years and converted his land into a high-yielding agricultural plot, said a press release. It said Mr. Veigas has been recognised as Rachana Agriculturist of the Year for introducing sustainable farming practices.

The others to receive the awards are: Jenette Pinto, social activist from Mumbai, a professor of history who co-authored the book "Slavery in Portuguese India" (outstanding woman of the year); Raphael Sequera, CMD of Mumbai-based Reliable Group (entrepreneur of the year); Anil Keith D'Cruz, another Mumbai-based Oncology surgeon who has been instrumental in initiating a super specialty training course in head neck oncology for the first time in India (professional of the year); and Ligoury D'mello, Chairman D'Mello Group of companies, Oman (NRI entrepreneur of the year).

A vegetable garden in the middle of city

Organic farmers' initiative under Haritholsavam project

There is something seemingly aberrant about a sizeable vegetable garden in the middle of a city. But that is exactly what Green View, a collective of organic farmers from Kozhikode is promising for the city folks. The collective, led by its president M.P. Rajul Kumar, has started the groundwork for the project after the district administration agreed to grant a piece of unused revenue land on contract for the purpose.

Right behind the Food Safety Commissioner's office, opposite the Government Women and Children's Hospital Kottapparamba in the city, around 50 cents of land under the hospital was lying unoccupied with wild undergrowth for the last several years. The spot is just a stone-throw away from Muthalakkulam, an important landmark of the city.

"When we identified the land and sought permission, District collector C.A. Latha straight away gave us the nod," said members of the collective.

Ms. Latha inaugurated the project Monday morning along with the farmers and members of the hospital staff. The land was offered to the collective as part of the *Haritholsavam* project, being undertaken by the district administration to spread vegetable cultivation among people.

A five-member team of the farmers' forum promptly began the ground preparation works at the site immediately after the inaugural ceremony. The entire area was covered with wild bushes, garbage and numerous other throwaways, including empty liquor bottles. "It will take at least a few days to clean the entire area and prepare it for farming," said Mr. Rajul Kumar, who is planning to grow spinach, ash gourd and cowpea as the initial crops. An unused well with ample water in the compound is expected to provide for irrigation.

In addition to farming, Green View has plans to set up an outlet to market the organic vegetable they produce in indifferent parts of the district at the entrance of the vegetable garden. "Its accessibility is a big plus," says T. Sasidharan, a member of the collective.

Paddy crops submerged in Cuddalore

Standing paddy crops on about 1,000 acres in the tail-end delta region of Cuddalore district, including Chidambaram, Kattumannarkoil, Keerapalayam and Bhuvanagiri, remain submerged following incessant rain in the past four days.

Farmers are worried that once the depression in the Bay of Bengal moves away, the north east monsoon would set in and the crops might suffer further.

The level of submergence of the standing crops is substantial at Poolamedu, Sivayam, Kaattukoodalur, Old Kollidam, Radha Vilagam and South Pichavaramn.

The farmers complain that rainwater stagnates in the fields owing to the lack of proper drainage facility.

The Tamil Nadu Vivasaya Sangam leaders, including MLA K.Balakrishnan and Chidambaram block president Jahir Hussain, inspected the fields on Monday.

Mr Balakrishnan told *The Hindu* that the Sangam had been urging the authorities for the past three years to put in place a proper drainage mechanism, but in vain.

Water level at the Veeranam tank rose to 46 ft as on Monday against the full capacity of 47.5 ft. Water level in tanks, lakes and wells in Cuddalore and Villupuram districts is fast rising. The low-lying areas and habitations located close to the water sources have been inundated.

The salt pans in Marakkanam are also submerged. Fishermen of both the districts kept off the sea for the fourth day in a row.

Farmers/early disbursement

The Federation of Tamil Nadu Agriculturists' Association has urged the State Government to ensure that sugar mills paid sugarcane farmers according to the State Advisory Price – Rs. 2,650 a tonne – and also the arrears.

A release from the Association's Secretary C. Nallasami said that the Union Government had recommended payment of Rs. 2,250 a tonne to farmers under the Fair and Remunerative Price system. The State Government had added Rs. 300 and another Rs. 100 towards transportation charges to arrive at the State Advisory Price. But the sugar mills preferred to pay the Union Government price.

The 16 cooperative sugar mills in the State, two public sector sugar mills and a private sugar mill alone paid the State Advisory Price. The remaining 27 private mills stuck to the Union Government's recommendation in deciding on paying farmers.

Early climate change warriors

It is generally believed that global warming is a concern that is of fairly recent origin. Indeed, the issue has become embedded in the public consciousness only in the past two decades. But actually there were early warning signals that were ignored and the world is paying a huge price for it. The worst culprit in this regard is the United States which cannot take the excuse "we didn't know."

Daniel Patrick Moynihan, essentially a social scientist, was unarguably one of the outstanding public intellectuals of the 20th century. He held many pivotal positions in the American academic and political establishment including a stint in India as U.S. Ambassador in the mid-1970s when our bilateral relations were, to put it mildly, very prickly on account of suspicious mindsets on both sides.

Now Moynihan can veritably lay claim to being perhaps the first person to alert an American President directly on global warming. Way back on September 17, 1969, he wrote a memorandum which has been published in Steve Weisman's *Daniel Patrick Moynihan: A Portrait in Letters of an American Visionary*, a book that contains hugely interesting material on his turbulent India stint as well. The memorandum has not got the public attention it demands. It deserves to be quoted in full given the current global debates on the subject, particularly in the U.S. itself.

The memorandum

The White House

Washington

September 17, 1969

FOR JOHN EHRLICHMAN

"As with so many of the more interesting environmental questions, we really don't have very satisfactory measurements of the carbon dioxide problem. On the other hand, this very clearly is a problem, and, perhaps most particularly, is one that can seize the imagination of persons normally indifferent to projects of apocalyptic change.

"The process is a simple one. Carbon dioxide in the atmosphere has the effect of a pane of glass in a greenhouse. The CO_2 content is normally in a stable cycle, but recently man has begun to introduce instability through the burning of fossil fuels. At the turn of the century, several persons raised the question whether this would change the temperature of the atmosphere. Over the years the hypothesis has been refined, and more evidence has come along to support it. It is now pretty clearly agreed that the CO_2 content will rise 25 per cent by 2000. This could increase the average temperature near the earth's surface by 7 degrees Fahrenheit. This in turn could raise the level of the sea by 10 feet. Goodbye New York. Goodbye Washington, for that matter. We have no data on Seattle.

"It is entirely possible that there will be countervailing effects. For example, an increase of dust in the atmosphere would tend to lower temperatures, and might offset the CO₂ effect. Similarly, it is possible to conceive fairly mammoth man-made efforts to countervail the CO₂ rise. (E.g., stop burning fossil fuels.)

"In any event, I would think this is a subject that the administration ought to get involved with. It is a natural for NATO. Perhaps the first order of business is to begin a worldwide monitoring system. At present, I believe only the United States is doing any serious monitoring, and we have only one or two stations.

"Hugh Heffner knows a great deal about this, as does the estimable Bob White, head of the U.S. Weather Bureau (Teddy White's brother).

"The Environmental Pollution Panel of the President's Science Advisory Committee reported at length on the subject in 1965. I attach their conclusions."

This is an absolutely fascinating document and how Moynihan came to write it can only be speculated since he left no clues. The very first technical paper drawing the world's attention to the impact of emissions of CO₂ on global climate was by the scientist Roger Revelle (and Hans Suess) in 1957 in the publication *Tellus*. It was this paper and Revelle's persistence that led to the establishment of the world's first and nowiconic CO₂ measuring station at Mauna Loa in Hawaii. Revelle was then Director of the Scripps Institution of Oceanography in California. He moved to Harvard in September 1964. Apart from other things, Revelle was to later work on issues relating to water resources in Pakistan and India. One of his teaching assistants in the 1970s was an Indian doctoral student in physics who later became an eminent environmental thinker himself, Ashok Khosla. Revelle and Mr. Khosla were, incidentally, tutors to a young Al Gore at Harvard. Mr. Khosla thinks that the close friendship that Revelle and Moynihan had could well have influenced the latter to write the memorandum on global warming. Mr. Weisman himself feels that the clue could lie in the last two lines of the memorandum since Moynihan was a close friend of the journalist and chronicler of Presidential election campaigns Teddy White, the brother of Robert White

The Moynihan Memorandum refers to a 1965 report of the President's

Science Advisory Committee that was chaired by Revelle himself and that included C.D. Keeling, the scientist who ran the CO₂ monitoring station at Mauna Loa. Actually, even before Moynihan, the famous biologist-author Rachel Carson had, in her books published in the 1950s, drawn attention to the growing pattern of warmer temperatures and rising sea levels and their impacts on biodiversity. And in early 1963, the Conservation Foundation has issued a report which said that "a continuing rise in the amount of atmospheric carbon dioxide is likely to be accompanied by a significant warming of the surface of the earth...The effects of a rise in atmospheric carbon dioxide are worldwide... The consumption of fossil fuel has increased to such a pitch within the last half century that the total atmospheric consequences are matters of concern for the planet as a whole."

Nixon's environmental legacyRichard Nixon is a controversial figure but other than his epochal China trip of February 1972, his greatest legacy is on environmental issues. It was during his tenure, for instance, that the Environment Protection Agency (EPA), a favourite target of Republicans these days, was established. Why he chose to remain silent on Moynihan's note remains a mystery. It is also puzzling why the very first U.N. Conference on the Human Environment held in June 1972 at Stockholm did not discuss climate change at all. That may well be because the conference never received political traction at the highest levels as such conclaves do these days. In fact, the only head of state to address the conference (other than the host Premier) was Indira Gandhi. Her speech changed the international environmental discourse completely by incorporating into it the hitherto missing dimension of economic development and growth. "Poverty is the worst pollutant," she is very often quoted as having said there. What she really said was a little more nuanced though: "Are not poverty and need

the greatest polluters?" She went to add: "The inherent conflict is not between conservation and development but between environment and the reckless exploitation of man and earth in the name of efficiency." That message has great contemporary relevance both in India and elsewhere.

INDIAN EXPRESS

Krishi Vigyan Kendra Let us Down: Farmers

PUDUCHERRY : The Puducherry Certified Seed Producers Welfare Association has petitioned the Chief Secretary Chetan B Sanghi, seeking his intervention in the functioning of the Perunthalaivar Kamarajar Krishi Vigyan Kendra (PKKVK), a centre to serve farmers, at Iyankuttipalayam.

In a memorandum to the Chief Secretary on Saturday a copy of which was released to the media on Monday, the association president A Ramamurthy said the farmers have been suffering for three years for want of seeds, fertilisers, farm implements and technical support from the PKKVK He charged the Kendra with neglecting the farmers, which has resulted in the agricultural activity coming to a standstill.

The 47-acre-land, where the PKKVK produced quality paddy seeds like white ponni, ADT 43, CR1009 and Bapatla for distribution among farmers, was kept idle, Ramamurthy said.On inquiry, it has been informed that for want of funds to purchase diesel, the field is not being cultivated. PKKVK is not involved in research work to provide quality paddy seeds, though some 15 years ago, several varieties of paddy like PY-1, PY-2, PY-3, PY-4, PY-5 and PY-6 were developed. Also, the association head alleged that the KPKVK, without concentrating on programmes for the benefit of farmers, was concentrating on opening retail outlets to sell ornamental plants, which were not produced by PKKVK, but produced in far-off Karnataka, Andhra Pradesh, Maharashtra and sold in the Union Territory on commission.

Further, he said tractors, water pumps, paddy harvesters were kept idle, without distribution to farmers. The funds, under the Centrallysponsored schemes, given to PKKVK were also not reaching the KVK as it had not furnished the utilisation certificates for the amount released earlier, Ramamurthy added. Under the Rashtriya Krishi Vikas Yojana (RKVY), the government of India (GoI) releases funds for setting up greenhouse, shade-net house, but the work was incomplete even after a delay of two years. As a result, no further funds have been released for want of utilisation certificate, he further said.

Similarly under the National Horticulture Mission, `170 lakh was released for bio-control community and tissue control laboratory, but due to utilisation issues, no more funds have been released said Ramamurthy.

The precision-farming too has taken a beating, despite 100 per cent subsidy being provided for setting up drip irrigation facility, he said.

The GoI funds have been diverted to non-agricultural purposes including payment of wages to workers engaged through backdoor employment.

Agri-clinics in Kuttanad

ALAPPUZHA: The state government will soon set up agri-clinics which will include Common Service Centres (CSC) and Village Knowledge Centres (VKC) in Kuttanad to provide integrated information, technology and service package topadasekharams. These clinics will facilitate the panchayats and the padasekhara samities in operating the communityowned machinery at the rates jointly determined by the panchayat, padasekhara samiti, and agri-clinics.

At present, the farmers face acute shortage of combine harvester machines.

The setting up of the agri-clinics is expected to sort out the shortage. The projects will be executed under Kuttanad package and Rs 1 crore has been set aside for the project. State Agriculture Department will be the implementing agency of this project.

"The project has been fashioned by the State Government in tune with the recommendations of the M S Swaminathan Research Foundation study report. Though there are some agri-clinics of Agriculture Department in Kuttanad, they do not have state-of-the-art facilities.

So the new clinics will have all the modern facilities," sources told Express. It is proposed to establish an apex agri-clinic at Kerala Centre for Pest Management (KCPM) in Monkombu with six satellite clinics in six agro-ecological zones. The block-level office of agriculture assistant director will function as satellite units.

These agri-clinics function exclusively for extension activities like coordination of field visits by extension staff, multidisciplinary teams etc.

The central agri-clinic will function as a custom hiring service centrecum-training institute. This central clinic will act as a coordinating agency to streamline the activities of the satellite agri-clinics. The service of the mobile agri-clinics functioning under Kerala Agriculture University will be extended to the block-level agri-clinics through this institute.

"Agriculture assistant directors of the concerned blocks will be the coordinators and team leaders for the satellite agri-clinic centres.

"They will be assisted by a team of experts who will visit fields according to a regular schedule, take stock of the crop condition, conduct necessary analyses as required, and recommend requisite advice to farmers based on the on field evaluation and diagnosis made," sources said.

The team will be called a diagnostic team and will be responsible for coordinating measures for disaster management .The team members, apart from assistant director of agriculture, will include scientists from Kerala Agricultural University (KAU) and other research institutions from relevant disciplines.The agri-clinics will be equipped with a vehicle, laptop, LCD projector, digital camera, and other accessories.

TS Government to Buy Power from Grid for Supply to Farmers

HYDERABAD: The Telangana government is making all-out efforts to provide uninterrupted power supply for agricultural operations by purchasing power daily from grid.

As the State was facing around 30 to 40 million units power deficit daily, the State government has been purchasing power on a daily basis. The power to be purchased on Oct 21 will be 1.43 million units at a cost of Rs 7.262 per unit taking the total cost for 1.43 million units to Rs 1.98 cr.

According to official sources, the power purchased by the Telangana government from October 1 to 21 is 147.37 million units at an average price of Rs 7.982 per unit. The total amount spent on power purchase in the month so far is Rs 117.64 cr. The government purchased 6.723 million units at a rate of Rs 7.269 per unit on October 19 spending Rs 5.07 cr on October 19 alone for purchasing power.On October 18, the government purchased 3.088 million units at a cost of Rs .52 per unit.

The government was able to supply 139.554 million units on October 19 against the demand of 161.529 m u.

Plan to Improve Pisciculture

HYDERABAD: The Telangana government is exploring ways to improve pisciculture in the state and thereby empower the fishermen communities. For this purpose, agriculture and fisheries minister Pocharam Srinivas Reddy visited Jharkhand along with Finance Minster Etela Rajender, Yellareddy MLA Enugu Ravinder Reddy and director of fisheries Saibaba to study 'Cage Fish Culture'. Pocharam and others toured Chandil Reserviour, where Cage Fish Culture is in vogue. They said viability of replicating the model in the state will be looked into.

INDIAN EXPRESS

Cane farmers, not banks, have first right over due recovery sum, says SC –

Regretting suicides by farmers owing to financial distress, the Supreme Court on Monday held that the farmers in Uttar Pradesh will have precedence over the banks for recovery of their dues after the state government auctions the sugar stocks. A bench led by Chief Justice of India H L Dattu rejected the appeals by state-owned State Bank of India and Punjab National Bank, which sought priority over the farmers as sugar mills in UP get ready to repay the dues.

Upholding the Allahabad High Court order, the bench said that it could not put farmers' lives at risk and that they must have the first right over the proceeds of selling sugar by the mills for the recovery of their dues. "Let the farmers also live on this planet...in this country.

This is why farmers in this country are committing suicide. Farmers cannot be put at risk," said the bench, while turning down banks' appeals. The Allahbad HC had directed mills to pay dues to farmers on priority by October 31.

It had asked the Akhilesh Yadav-government to auction sugar seized from mills and distribute the entire sale consideration towards clearing cane dues to farmers through the respective District Magistrates. Banks, however, expressed concerns over loans to private sugar millers in the state turning into Non-Performing Assets and argued that they should get back the money they loaned to the mills on priority basis. Seeking the first right on the liquidation proceeds, the banks have told the apex court that such HC order would erode their collateral value and further discourage lending to the cash-starved sugar industry in UP. The banks in their appeals further said the HC order would result in the entire sale proceeds of mills going towards cane payments, thus nothing would be left for millers to pay loan installments and this would affect the banks.

hindustantimes

Mumbai: Organic is the way to grow for these urban farmers



With space constraints, creating a garden in Mumbai to grow pesticidefree vegetables and fruits may seem like a far-fetched idea. But one group of organic farming enthusiasts has shown how growing an organic kitchen garden in the city is quite an achievable feat.

For the past five years, Urban Leaves India – a group of amateur organic farmers – has been spreading awareness about urban farming in Mumbai. The group conducts workshops every Sunday to teach people how to prepare organically rich soil and become 'urban farmers'.

These gardening enthusiasts do not need a plot of land to exercise their green thumbs; the terrace on their buildings serves as their backyard garden.

In 2000, we developed a terrace farm at Ghadiyal Godi (Victoria Dock) of MbPT. The farm has around 100 varieties including spinach, tomatoes and other fruits and vegetables," said Preeti Patil, founder, Urban Leaves India, who has been a catering officer with Mumbai Port Trust (MbPT) since 1992.

"Over the years, as the soil improved and the garden grew, urban farming enthusiasts and others began to visit the site. With security restrictions increasing at MBPT, I felt the need to share the knowledge and experience to a wider forum," said Patil.

Patil and her group of 500 volunteers decided to replicate the idea in other parts of the city as well. In 2009, the volunteers decided to name the project 'Urban Leaves India'. The group started their second project in 2010 with the establishment of a garden at Nana Nani Park, Girgaum Chowpatty.

Volunteers also have created their own terrace gardens besides initiating garden projects at schools and colleges such as Don Bosco School, Matunga and Sardar Patel Institute of Technology, Andheri, among others.

Every day, for many years, as Patil oversaw the catering for thousands of employees at MbPT, she thought about the impact of the waste generated and decided to do something useful with it – make soil. "Soil created using organic waste is not inert. It is full of microbial life, which can be used to grow organic food without having to use synthetic fertilisers. The concept is, food should be grown where waste is generated and being decomposed; this cycle should continue," said Patil.

Avinash Kubal, deputy director, Maharashtra Nature Park, Mahim,

which partnered with Urban Leaves India, realised the potential of community farms and offered the group space within the park. "The group is spreading the idea of utilising biodegradable kitchen waste instead of sending it to landfills. Of the total garbage sent to landfills – around 8,000 metric tonnes – in Mumbai, 40% is organic and can be used as manure. Terrace farming has set up a model for young citizens for developing environment friendly technology," said Kubal. "The process is cost-effective and low-maintenance. The only requirements are a lot of patience and perseverance."

Sessions on growing greens Urban Leaves India organises workshops on urban community gardens for students, housing societies, businessmen, professionals and housewives. It teaches:

* Building and using Amrut Mitti (a nutrient-rich soil)* Seed sowing and transplanting of seedlings* Pruning for fruits and vegetable plants to create a better canopy and make them more productive* Building trellises for creepers* Designing principles for your urban farm like techniques to harvest maximum light and maintain high biodiversity in farms

Urban children get a taste of organic foodsIn May 2014, Urban Leaves India organised terrace farming workshops for children from around 100 schools across the city at the Maharashtra Nature Park. At the workshop, children were served breakfast that included seasonal organic food.

"Children need to be educated about 'whatever mother earth gives us, it should be returned to her'. Working in kitchen gardens also provides them with recreation. It will help them understand the importance of organic food in our life. Being able to smell fresh fruits and vegetables is an added incentive for children."

THE ECONOMIC TIMES

India's total rice output unlikely to fall below 100 million tons he country's overall rice production is unlikely to slip below the level of 100 million tonnes this year despite some impact on the kharif crop in few states due to rains following 'Hudhud' cyclone, a top government official said.

Rice production stood at a record 106.54 million tonnes in the 2013-14 crop year (July-June). The government is aiming to achieve 106 million tonnes this year. Currently, the kharif (summer) rice is ready for harvest.

"Overall rice production will definitely be below last year's level but it should not fall below 100 million tonnes," Agriculture Secretary Ashish Bahuguna told PTI.

The kharif rice contributes more than 80 per cent of the total rice production. The government has projected lower kharif output of 88.02 million tonnes for this year taking into account the deficient monsoon rains.

Now that the kharif crop is ready for harvest, the recent cyclone 'Hudhud' has affected the crop not only in Andhra Pradesh but also in other states, resulting in possible further drop in overall rice production.

Asked about impact of cyclone on kharif rice crop, Bahuguna said: "There will be some damage not only in Andhra Pradesh, but in others states like Odisha, Chattigarh and Jharkhand as well."

Rainfall due to cyclone in some places will boost prospects of late sown crop, while in some places it will damage the crop. "However, we are yet to make the assessment. We expect we will make up from improved yields," he said.

The US Department of Agriculture (USDA) has also pegged India's rice production this year to be at 100 million tonnes, which includes 87 million tonnes of kharif rice and 13 million tonnes of rabi rice.

"Continued deficient rains and 'normal' cyclones in eastern coast during October/November could further affect the harvest of kharif rice and planting prospects for the upcoming rabi rice," the USDA had said in its latest report.

The times of India.

PUNE: Action for Agricultural Renewal in Maharashtra (AFARM) in association with like minded civil society organisations hosted a state level conference on the issues of 'rain-fed' farming in the state of Maharashtra.

The conference was held in the backdrop of Maharashtra assembly elections. The representatives of non governmental organizations (NGOs), farmers and community leaders working to address the issues of rain-fed farmers participated in this conference. AFARM has drafted a manifesto listing the demands and expectations of rain-fed farmers of Maharashtra. Discussion on this manifesto was held at the conference.

"The manifesto was given to farmers, political workers to widely circulate among the various political parties and their candidates for the election. The manifesto urges the candidates to declare their support for rain-fed or drought affected farmers," a statement issued by the organisation said.

AFARM is an institution that co-ordinates NGOs, which work to provide drinking water and agricultural extension services to villages in drought affected Maharashtra. AFARM has network of more than 300 organisations. Out those organisation 86 organizations are institutional members and 244 as associates. These organsiation work in the field of rural livelihood initiatives including community based natural resource management, sustainable agriculture, women empowerment, skill development, health, education, human rights, drinking water and sanitation.

Agri dept to train coconut farmers in Koz

KOZHIKODE : Agriculture department in association with Nalikera Karshaka Samithi will be organizing classes on how to make coconut farming financially viable for farmers. Classes on Neera production and other topics will be discussed by agriculture experts.

Apart from coconut farmers, persons engaging in other works related to coconut farming, copra production will also be attending the classes. Coconut tree climbers, toddy tappers, and those engage in producing value added products from coconut are expected to benefit from the training class.

The focus of the training programme will be to make farmers and others aware of the government schemes for coconut farmers, said Kollamkandi Vijayan, president of Nalikera Karshaka Samithi. The need for the use of modern technology for improving cultivation will also be discussed, he added.

Those interested to attend the sessions can register their names by dialling 9048627810 or 9745148451 said, Mujeeb Komath district secretary of the Samithi. The programme will be held at Perambra on Monday, he added.

The focus of the training programme is to make farmers aware of the government schemes for them.

Agri sector may suffer damages

BHUBANESWAR: The agriculture sector might be severely affected in the state even if cyclone Hudhud spares Odisha. The anticipated wind and resultant heavy rain would damage standing paddy crop, experts said.

"Currently, the standing paddy is in flowering stage. Wind speed touching 50 km per hour can inflict severe damage on the crop," said Chandramani Khanda, an agriculture scientist with Bhubaneswar centre of International Rice Research Institute, Philippines. He visited the paddy fields on Thursday.

"Paddy will face problems of grain-filling and go waste," he said, adding, some crops in the highland are nearing harvest. They would fall.

Similar was the opinion of Gopal Panda, a professor of geography at Utkal University. "The crop will rot in the rain," he said. The India Meteorological Department (IMD) has predicted wind speed reaching up to 70 kmph along and off south Odisha coasts from October 11 morning. It would increase to 80-90 kmph from October 12.

It also said heavy rainfall at some places over coastal Odisha. Ganjam, Gajapati, Puri and Khurda may experience heavy rain, said an IMD officer. Farmers in western Odisha are a worried lot. "We suffer crop loss but since the area does not come under cyclone-affected areas, the government does not compensate us," said Umesh Mishra, a Sambalpur-based farmer leader.

Government authorities have kept their fingers crossed. "It is too early to predict damage. But all losses will be fairly assessed for compensation," said director (agriculture) R S Gopalan over phone from Maharashtra where he is on election duty.

Business standard



UP sugar crisis defuses as mills ready to go for cane crushing

Signalling a coming resolution of the standoff between the government and private sugar millers in Uttar Pradesh, the latter decided on Monday to start maintenance work in their units from the morrow, for subsequent cane crushing. There was a cordial meeting in the evening with the government's cane commissioner, who gave assurances of a response on some demands. "We are confident about the resolution of the matter to the satisfaction of all stakeholders," UP Sugar Mills Association secretary Deepak Guptara told Business Standard here. There are 95 private mills in UP and two-thirds had earlier notified the state government about suspension of crushing in the coming season unless there was clarity on pricing. The government had also hardened its stand and directed mills to start crushing operations by November 10 and 15 in the western and eastern regions, respectively. The mills had petitioned the Allahabad High Court for a direction to the government on the recommendation of a committee chaired by the chief secretary to devise a permanent cane price formula. They'd wanted a 'participative mechanism' to discuss the issue with mills before announcing the State Advised Price for the coming season. The next date of hearing is October 31.Private mills owe farmers Rs 2,500 crore in arrears for the earlier crushing season; they say they have no money to clear these, owing to the government's irrational policies. With their refusal to start crushing, several farmers had begun distress sales of cane to khandsari and jaggery making units, at low prices.In a meeting on Monday evening, cane secretary Rahul Bhatnagar assured mills a look into their genuine problems. Sources said the government had assured revocation of police cases for not clearing growers' dues and issuance of recovery certificates.The mills have also demanded Rs 9/quintal of subsidy instead of Rs 6/quintal, and the government is to consider this.

Bayer launches farmer helpline for providing agri-expert advice.

Bayer CropScience launched a national helpline for farmers to provide farmers across India with free technical advisory, crop related advice and information on Bayer's crop protection products. Farmers can place a toll free call on Bayer CropScience's helpline number from both landline and mobile phones. The number will also be printed on all product packs and packaging materials of Bayer CropScience. Calls will be answered by local agri-experts from four call centers located in Maharashtra, Punjab, Gujarat and Madhya Pradesh. Speaking at the launch event, Joerg Rehbein, Head of Bayer CropScience, Indian Subcontinent, said, "Farmers face a diverse set of issues – be it unpredictable weather, pest infestations, plant diseases, increased resistances or changing market trends. To ensure a stable income for themselves, farmers also need to meet high quality demands. Bayer CropScience wants to help farmers increase their agricultural productivity by actively promoting information and giving advisory tailored to local needs. We intend do this through various channels such as: our highly experienced team of field officers, our strong network of trade partners, the Bayer Solutions stores and our newly established national helpline." The helpline was activated in September and a month-long pilot phase was carried out to streamline operations before the official launch today. All conversations and queries from the helpline will be recorded and monitored by Bayer agri-experts to ensure that correct and quality information is provided to farmers. Apart from receiving inbound calls, the call centre will reach out to farmers registered on Bayer CropScience's database and provide information on products useful to tackle common pests and diseases in specific crops. Farmers will also be given the option to ask for a Field Officer visit at their farms, if required.

Pulse prices move up on lower kharif output estimates

The prices of pulses have started rising, due to lower production estimates for the kharif season.Data from the Union ministry of consumer affairs shows the price in wholesale markets has risen up to 6.6 per cent so far this month. The government had forecast a 26 per cent decline in output at 5.2 million tonnes (first advance estimate) this kharif season, against a target of seven mt (and 6.02 mt in the kharif of 2013-14). The kharif season contributes around 40 per cent of annual pulses' production.A fall in global output is likely to keep prices up in India even if our production achieves last year's level. Canada, for example, estimates its output (mainly peas and lentils) at 5.5 mt this year as against 6.1 mt last year. India imports pulses mainly from Canada, Australia and Myanmar."With the kharif output estimated to remain low, our major focus for the rabi season would be to cover 3.37 million hectares of unsown area. The government has sanctioned an additional Rs 300 crore for rabi," said J S Sandhu, agriculture commissioner at the Centre.A delayed, erratic and deficient monsoon in the kharif season has led to less of sowing, at 10.11 mn ha as compared to 10.81 mha in the same season last year, a fall of 6.5 per cent.India has been a major importer of pulses. During 2012-13, about \$2.3 billion (3.84 mt) was imported. In the following year, it was \$1.7 bn for 3.05 mt of import. Between April and August, the first five months of this financial year, there was import for \$0.96 bn (1.07 mt), a rise of 18.2 per cent in value terms over the previous year.

An Assocham study has forecast a possibility of further increase in import this year, on rising domestic demand, estimated to be 23 mt this year.

"It would not be surprising if the prices of urad and tur increase further, at least by 15 per cent, starting from Diwali and up to the third week of January 2015. The inefficient supply systems, coupled with inherent weaknesses in regional markets, are expected to further contribute to higher prices," said the study. "Chana is likely to trade steady, with an upward bias on festive buying and fall in warehouse stocks. The extent to rise would be capped with Nafed's decision to sell 1,000 tonnes of chana everyday. Nafed holds around 123,415 tonnes of chana in its 45 warehouses across Rajasthan," said Prerana Desai, an analyst with Emkay Commotrade.

Thailand announces package to aid rubber farmers



In order to bail out natural rubber farmers from the incessant fall in prices, Thailand'sgovernment has announced a series of measures to revive the industry. Thai Deputy prime minister Pridivathorn Devakula said that small farmers would receive a direct subsidy of 1,000 baht (\$31) per 0.16 hectare, capped at 15,000 baht. He estimated that around 850,000 farmers would receive the handout, which would cost approximately \$262 million. The military-led government, which has been in power since May, has ruled out the sort of interventionist schemes used by previous administrations, which are costly and have led to a build-up in stockpiles that have proved hard to sell this year. However, Pridivathorn said the State Agricultural Bank would provide a fund of around 20 billion baht to the Rubber Estate Organisation (REO) to buy rubber from the market for resale. A further 10 billion baht would be given to rubber cooperatives to buy rubber from farmers and then sell it to the REO. Soft loans will also be made available to rubber companies and farmers with smallholdings.

The government's announcement had not impressed rubber growers much and farmers' leaders said the policies would do little to support the market. The Deputy Prime Minister, who oversees economic issues, told reporters the measures, including subsidies to farmers and some buying in the market by a state body, would have to be approved by cabinet next week."We believe they will increase rubber prices within the next couple of months so they do not fall below 60 baht per kg," he said. In the Thai market, natural rubber was quoted at 48 baht per kg last week. Thailand is the world's biggest producer and exporter of rubber. It produced 4.2 million tonnes in 2013, of which around 86 percent was exported. Soft loans to help rubber companies and cooperatives were announced last month after farmers had threatened to stage protests because of the collapse in prices and a lack of government aid. Rubber farmers took to the streets earlier this year, joining in the demonstrations that undermined former Prime Minister Yingluck Shinawatra, whose government was finally ousted by the military in May, agencies reported.

Study seeks alternative livelihood to tobacco farmers



A multi-pronged strategy of agricultural diversification in a phased manner and shifting to other economic activities is the need of the hour to provide livelihood solutions to the people associated with tobacco, according to a study titled "Tobacco Economics in India: The Voice of Farmer and other Stakeholders".

The study was jointly conducted by The Associated Chambers of Commerce and Industry of India (Assocham) and Thought Arbitrage Research Institute (Tari).

It states that multi-faceted approach to provide alternative livelihood to farmers would be more effective than "legislation to control tobacco as its cultivation is a lifeline for a sizable population".

Tari founder, Kaushik Datta, said that it was a mere coincidence that the study was released at a time when the Union health ministry was seeking further regulation of consumption of tobacco products in the country.

For the record, an expert committee constituted by the ministry to review the Cigarettes and other Tobacco Products Act, 2003, had come out with various recommendations including a ban on sale of loose cigarette sticks.

Incidentally, two days back, Consortium of Indian Farmers Associations (CIFA) had written a letter to the health minister asserting that "any decision taken without tobacco farmers consent cannot be implemented".

CIFA secretary general, P Chengal Reddy, stated that the Centre should constitute a national consultative committee to hold discussions with all the stakeholders and prepare a programme.

BusinessLine

Study group to oversee white stem borer menace in coffee

Reaching out to the coffee industry stakeholders, Commerce Minister Nirmala Sitharaman said on Monday that issues faced by growers relating to white stem borer menace, transfer of technology and the rainfall insurance scheme would be looked into by the Government.

Addressing the first stake holders meet of the coffee industry in Bangalore, Sitharaman said that a focussed study group would soon be formed by the Commerce Ministry and the Coffee Board to understand research made so far on the white stem borer. The idea is to collate all credible information relating to borer by the start of next season.

The borer menace, unique to the Indian arabicas -- the milder and premium coffee grown in the country -- is threatening to drive the Arabica variety to extinction. Production of arabica has come down significantly in the past few decades. Growers point out that arabica, which used to account for about 82 per cent of India's total coffee output in the 1950s is now down to around 33.6 per cent of the country's total coffee produce.

Sitharaman also told the growers that issues relating to transfer of technology for the equipment used by the growers and the need to incentivise them would be looked into. While large growers are able to afford the equipment by importing them, the smaller growers are finding it difficult to address the manpower shortage amidst rising labour costs. A section of the growers also blamed the labour shortage to the national rural employment scheme.

Growers raised the issue of social costs, taxation while some

demanded that current rainfall based insurance scheme need to be restructured as rainfall pattern across key growing regions mainly in Karnataka, which accounts for about 70 per cent the country's coffee, has seen wide fluctuation in recent years. Also, they demanded that relief extended to small growers should also be given to those with landholding of over 10 hectares wherever crop loss due to heavy rains has exceeded 50 per cent.

Earlier in her opening remarks, the Minister expressed displeasure over the functioning of the commodity boards and asked them to beef up their performance. "I am thoroughly unhappy with the boards (all commodities boards) as they are where they were. I am sorry to be blunt. The boards must sit up. Not just sit up but do a lot as I am answerable for their functioning. They have to do their bit" Sitharaman said.

India's coffee exports in current calendar year till September 17 stood at 2.35 lakh tonnes, marginally lower that corresponding last year's 2.45 lakh tonnes. Output for the 2014-15 season is projected to be 3.44 lakh tonnes, as per the post blossom estimates over last year's 3.04 lakh tonnes.

'To raise milk output, tap indigenous cattle breed'

There is an urgent need to improve indigenous bovine breeds if milk yields are to rise, Minister of State for Agriculture Sanjeev Balyan said here on Monday.

Despite being the largest milk producer in the world, yield from milch animals in India is 1,012 kg/year, considerably lower than the global average of 2,200 kg/year. "Indigenous breeds, being resistant to diseases and our tropical weather, have huge potential in terms of benefiting the farming community and will lead to higher incomes," said Balyan at an Indian Council of Agricultural Research event here on strategies to improve milk productivity in indigenous cattle.

The Minister was confident that the Rashtriya Gokul Mission, a nationwide scheme launched by the Government in July with ₹ 150 crore earmarked for the current financial year, would improve indigenous cattle.

"The Mission will develop indigenous breeds in a scientific manner and facilities will be set up for high-genetic potential breeds," said Balyan.

Panel experts were optimistic despite several limitations existing in the Indian cattle scenario.

"There is non-availability of good germplasm, limited recording of performance data, a shortage of green and dry fodder and low access to veterinary care. However, India's dairy sector has constantly grown despite low investment and we have the largest and most diverse bovine population in the world," said Arjava Sharma, Director, National Bureau of Animal Genetic Resources.

"It must provide financial subsistence for feeding, breeding and bovine healthcare. In terms of breeding, non-descript breeds can be graded up with high genetic merit indigenous breeds such as Sahiwal, Tharpakar and Red Sindhi," he said.