

## **Encourage drip irrigation scheme, Ariyalur officials told**

The State Monitoring Officer and Agricultural Production Commissioner, Sandeep Saxena, at a review meeting held here on Tuesday, asked the officials to promote and expand drip irrigation scheme among farmers in Ariyalur district.

He said farm ponds could be built to harness rainwater as Ariyalur was a rain-fed district. Officials should drive home the importance of water conservation, he said. The Cooperative Department should arrange for loans for drip irrigation.

Mr. Saxena called upon the officials to supply early to farmers agricultural inputs, which are subsidised by the Horticulture and Agriculture departments. The government scheme to provide protected drinking water should be utilised fully, he said and urged the officials to expedite all development works being carried out in the district. Mr. Saxena reviewed the schemes being implemented through Revenue and Social Welfare departments. He inspected a jasmine farm at Mallur and ascertained from farmers the benefits of drip irrigation and whether they had been given full subsidy under the scheme. District Collector M. Ravikumar and District Revenue Officer Karuppasamy were present, an official release said.

## **Need to conserve water stressed**

The International Day for Biological Diversity was observed at Tholady tribal settlement in the Western Ghats of Kanyakumari district on Wednesday.

The United Nations has declared May 22 as the International Day for Biological Diversity (IDB) to increase the understanding and awareness of biodiversity issues.

Addressing the tribal people, mostly children, S.S. Davidson, environmental educator, said this year the theme was water and biodiversity, to coincide with the UN designating 2013 as the International Year of Water Cooperation.

The forests provided timber and non-timber resources, habitats for pollinators and wildlife. Improved landscapes provided significant recreational and cultural values.

These benefits should be added to water-related benefits when considering returns on investments in water-related infrastructure.

Water was needed for producing food, drinking, sanitation, and for economic activities.

Ecosystems regulated the availability of water, and its quality. Conservation and restoration of ecosystems will help achieve water security. Ecosystem components that exert major influences on water include forests, grasslands, wetlands and soils, which together could deliver water security benefits at the local, regional and global level, Mr. Davidson said.

He added that without ecosystems, the water cycle, and dependent carbon and nutrient cycles, would be significantly altered with detrimental effects.

The impact of climate change was primarily owing to changes in the water cycle. An ecosystem-based approach was therefore a primary response for adapting to climate change and this was largely about managing water, he added.

### Breaking new ground



*AgricultureE Three organic farmers from Kerala share their success story with Athira M. They are showcasing their products at the organic rice mela that begins in the city today*

Organic farming is gaining ground in Kerala. A burgeoning market for organic produce has helped farmers to reap the benefits of organic cultivation. As more people root for organic produce, be it rice or vegetables, organisations such as Thanal are encouraging the trend by

collecting organic products from farmers and marketing them. The organic rice fair, which begins today, is one such venture.

For Rajesh Krishnan, a native of the capital city, “being a farmer is the best way to reach out to society”. Rajesh, a Greenpeace activist in Bangalore, owns five acre of land in Wayanad. “ It was after working with Greenpeace that I developed a passion for farming.”

He cultivates rice varieties such as Mullankazhama, Gandakasala, Njavara, Thondi and Kurumutti. For a new farm enthusiast the biggest challenge is always finding land, especially with prices shooting up every day. “And once you identify the land and decide to do organic farming, unless and until you get proper guidance it is never going to be easy,” says Rajesh, who has the Mullankazhama and Thondi grains for sale.

“Mullankazhama’s yield is much less, so it costs more. It is an elite variety and is believed to have been used by the royals and is even called ‘Rajaannam’ (food of the kings). It is very aromatic and was originally used to make biriyani, before Gandakasala replaced it,” he says.

Venkitesh, who also cultivates rice in Wayanad, is bringing the Thondi variety to the sale. A maths teacher, Venkitesh’s family has been into organic farming for many years now. “I started helping my father, A.V.Nanju who is into farming. We cultivate Thondi, Gandakasala, Njavara and Chennellu varieties,” says Venkitesh. He vouches for the taste of these rice varieties, especially Thondi. “You can make excellent rice gruel and uppumaavu using the variety,” he says. Of late, he has started cultivating sesame as well.

Sreeja Arangottukara is an organic farmer who is a theatre activist as well. At Arangottukara, in Thrissur district, she cultivates rice, vegetables, cash crops and other items on nearly 25 acres of land along with members of the Padhasala Trust, which has two divisions, Krishi Padhasala and Kala Padhasala. While the latter is into agriculture, the former holds cultural activities and comes out with plays based on agriculture and nature.

At the organic fair, you get beaten rice (aval) from Sreeja’s farm.

“It was from my father, the late K.V. Neelakantan Namboothiri, that I inherited a liking for agriculture. From 2000 onwards, I have been active in organic farming along with my husband. I chose to do this once I understood the benefits of the organic produce,” says Sreeja, who has

won awards from the Sangeetha Natak Akademi and Sahitya Akademi for her writings. She juggles her job with the Commercial Taxes department, farming, theatre activities and of course her family life.

The family cultivates 10 traditional paddy varieties and grows green gram (cherupayar) and black gram (uzhunnu) too.

### **Ignore biodiversity management at your own peril**

The United Nations designated May 22 as the “International Day for Biological Diversity,” to increase understanding and awareness of biodiversity issues. “Water and Biodiversity” is this year’s theme. We cannot imagine one without the other. Water and biodiversity are sources of life and livelihood or options for reducing poverty and enhancing human welfare. Basic human needs such as air, water, food, clothing and medicines are the products of water/biodiversity. Seventy per cent of the world’s poor lives in rural areas and depends directly on biodiversity for its survival and well-being.

### **Stress factors**

However, when the population and its requirements start to increase, there is proportionate stress borne by water and biodiversity. This contributes to global challenges such as climate change, rising food and energy costs and global economic crises, along with exacerbating poverty, inequality and underdevelopment.

Lack of access to safe drinking water is an important issue, especially in developing countries. About 2.8 billion people (40 per cent of the world’s population), experience some form of water scarcity. Lack of basic services (water supply and sanitation) leads to insecurity, political instability and even armed conflict in developing countries.

There has been considerable structural transformation in developing countries during the post-globalisation era. A substantial reduction in agriculture along with a rapid increase in industrialisation and urbanisation has led to severe land use changes. Forests and wetlands (hot spots for water and biodiversity) have been reduced and degraded. In addition, the indiscriminate discharge of wastes into water bodies has damaged the environment, with enormous and sometimes irreversible impact. However, managing these resources is essential if the world is to achieve sustainable development.

## **Water science**

Understanding the role of biodiversity in the hydrological cycle enables better policymaking. The term “biodiversity” refers to the variety of plants, animals, microorganisms, and the ecosystems in which they occur. Water and biodiversity are interdependent. In reality, the hydrological cycle decides how biodiversity functions. In turn, vegetation and soil drive the movement of water.

Every glass of water we drink has, at least in part, passed through fish, trees, bacteria, soil and other organisms. Passing through these ecosystems, it is cleansed and made fit for consumption. The supply of water is a critical “service” (of benefit to humans) that the environment provides. Biodiversity is what underpins the ability of nature to recycle water throughout.

Forests, for example, influence the hydrological cycle by directly affecting the rates of transpiration and evaporation, and how water is routed and stored in a watershed. Forest soils readily absorb, capture and sustain certain quantities of water. Deforestation increases soil erosion which reduces land productivity and causes water scarcity in downstream areas. One-third of the world’s largest cities get a significant portion of their drinking water supply from forest areas. Forests are a part of biodiversity and cities depend on biodiversity for their water.

## **Challenges and concerns**

Plants, soils and animals not only sustain the hydrological cycle, but also play a significant role in purifying water. Wetland plants remove high levels of nutrients, such as phosphorus and nitrogen, thus preventing them from reaching drinking water. Toxic substances such as heavy metals from water are also removed. Normally, when water flows downstream, its quality may improve drastically, as the biodiversity (mainly bacteria, animals and plants), breaks down impurities and makes it fit for drinking.

Lack of recognition: There has been a widespread failure to recognise water and biodiversity’s vital role in providing food, energy, disaster relief and environmental sustainability. The main reason is that there are no proper markets or values for the goods and services (which lift millions of peoples suffering from poverty and diseases) derived from ecosystems.

Common property resources: Forests/mangroves, oceans, rivers, ponds, lakes, marshes, estuaries etc., are predominantly common property resources with state ownership. However, communities are historically enjoined in their rights in extracting the benefits — as fishing in the oceans, and timber and other product extraction from forests. The free rider problem leads to the over-extraction of resources and species extinction.

Competition and conflict: The competition and conflict for water by divergent users/groups (agriculture and industry, upstream and downstream users) is an emerging issue. Similarly, the many users of bio-resources, such as fishermen and forest dwellers, compete with one another.

Degradation: There is evidence of the degradation of water and biodiversity through (a) drying rivers, wetlands and aquifers (b) bio-accumulation of agrochemicals and heavy metals in fish and other edible species (c) algal blooms from high nutrient loads (c) silting of dams and nutrient loss due to the fragmentation of rivers, and (d) the disappearance of natural forests. Much of this is caused by short-sighted development.

Lack of pollution mitigation: Most countries have the legislation to protect their water resources (particularly from the point source of pollution), but the implementation of laws often lags behind because responsibilities are dispersed and costs are high. Unfortunately, non-point pollution from agriculture often constitutes a greater total pollutant load than the point-sources, and proper management options are not in place.

Inadequate investments: The investments for the conservation of water and biodiversity sources are not sufficient. For example, in the water sector, most investments are for water resource development like irrigation, hydropower and drinking water supply, but are limited in supporting the continuous availability of fresh water.

### **What is needed**

The environment supplies our basic necessities and biodiversity and underpins the ability of the environment to continue these services. Our aim must be to see how biodiversity and water can be used wisely to help us achieve our development goals. Considering the dynamic nature and multiple uses of water and biodiversity, its management is a complex task. Although water and biodiversity is a global issue, the problems and solutions are often very localised. The following steps are proposed:

Governments and international communities must work together and make more and immediate investments in water and biodiversity management. In this regard, the various conventions (Ramsar Convention for Wetlands Protection, Convention on Biological Diversity, etc.) should fulfil their objectives.

Internalising the external costs of water and biodiversity by (a) providing incentives through payments for ecosystem services, which encourage local communities to maintain the integrity of forests and watersheds, and (b) applying the “polluter pays” principle.

Along with specific national planning on water and biodiversity such as “National Water Policy,” multi-sectoral plans on water management that consider biodiversity and ecosystems as an integral part are needed.

The economic values of different water and biodiversity spots should be estimated for effective policy decisions. For example, the water-related ecosystem services by forests (water provisioning, regulation of water flows, water purification and erosion prevention) collectively account for a value of \$7,236/hectare/year or more than 44 per cent of the total value of forests.

The need for a holistic and integrated approach to biodiversity and water management. The ecosystem approach (strategy for the integrated management of land, water, and living resources) and the integrated water resources management strategy (promotes the coordinated use of water, land and related resources, to maximise the resultant economic and social development without compromising the sustainability of aquatic ecosystems) should be benchmarks.

Since water and biodiversity are closely associated with the enhancement of life and welfare, people’s involvement is significant. In this regard, the media have a crucial role in awareness generation. Non-governmental and community organisations must help in coordinating conservation programmes.

Biodiversity/water benefits should be shared by the community. A large number of bio-resources (fish, seaweeds, corals, medicinal plants, etc.) serve as basic raw materials in the manufacture of different consumer products.

However, the benefits derived from the business are not shared equitably by local communities. Considering this, the Convention on Biological Diversity has proposed to its parties to implement the “access and benefit sharing” principles, and promote them as an incentive mechanism to preserve our natural biodiversity.

### **Management of white stem borer in coffee**

Coffee white stem borer, *Xylotrechus quadripes*, is a serious pest of arabica coffee causing a yield loss up to 40 per cent in all coffee growing areas of India.

It is a blackish brown coloured beetle measuring about 2 cm in size with three pairs of white stripes running obliquely across the wings. Alternate host plants of this beetle include rose sandal wood, teak etc.

### **Signs of infestation**

The larvae enters the hard wood and burrows up to the roots. Infested plants show yellowing and wilting of leaves, presence of ridges on the stem, wilting of branches and occasional drying.

In severe infestation a plant may have 20-25 grubs. Young plants succumb completely to the attack and older plants get damaged.

Female beetle lays eggs in cracks and crevices of the bark of the main stem or the primary branches.

Hatching takes place in 10-12 days and the grub first feeds on the bark and then bores into the woody tissue by making zigzagging tunnels, and tightly fills them with excreta.

The grub stage lasts up to 10 months.

### **Control measures**

Build good shade as the adults prefer coffee plant exposed to sunlight for egg laying.

Every year look for ridges on the main stem and thick primaries to survey the level of infestation. Trace the infested plants and flight period of the beetles to contain further spread of the infestation.



Prune infested plants or uproot them, if the borer has burrowed up to the root then burn the infested plants.

Storing of infested stem in the estate will result in a continuous infestation. Remove the loose scaly bark of the main stem and thick primary branches by using coir gloves or coconut husk.

Spray once in April-May and another spray at the end of October with chlorpyrifos 20EC at 600ml in 200 litre of water along with 200ml of wetting agent. Alternatively stems may be swabbed with carbaryl 50WP at 4kg diluted in 200 litres of water.

### **Mini-hydro projects still a major threat to Western Ghats**

*Project planned in Puttur taluk could submerge over 1,800 ha*



Concern: The Kunthur/Panaja range reserve forests where rare medicinal plants, endemic evergreen trees and endangered fish find habitat, could be submerged if the project is implemented, according to a study.

The blanket ban on all new mini-hydro power projects in the Western Ghats, ordered three months ago by the Karnataka High Court and celebrated by environmentalists, may not, after all, be as all-encompassing as was intended.

A 24-MW hydro power project proposed for the Kumaradhara in Dakshina Kannada's Puttur taluk could well become a reality as it was sanctioned on 'private land' prior to the High Court order. The hydel project, proposed by Kukke Hydro Powers Pvt. Ltd., could submerge 1,882 hectares of land, including agricultural fields and prime forests, according to a report commissioned by the Western Ghats Task Force in April.

Although the company claims that the project involves “no submergence of land, hence no loss of species... [or] any resettlement or rehabilitation of the people,” a study invited by the Task Force warns of “complete dislocations of traditional livelihoods associated with agriculture, horticulture, cattle wealth, and forest-based livelihoods.”

Cropland and plantations account for 36 per cent of the land that could submerge while forests constitute 46 per cent, it adds. This includes the Kunthur/Panaja range reserve forests where rare medicinal plants, endemic evergreen trees and endangered fish find habitat, says the report by the Centre for Ecological Sciences at the Indian Institute of Science (IISc.). The Kumaradhara originates in Kodagu and joins the Gundia and the Netravati in Puttur taluk.

### **Dozens more**

By the admission of Karnataka Renewable Energy Development Ltd. (KREDL), the project proposed by Kukke Hydro Powers is one of the dozens of similar mini-hydro projects that still stand a fighting chance of being commissioned in the Western Ghats despite the High Court order.

“Any project, sanctioned in privately owned land, before the High Court order was made, could be legally commissioned,” said a KREDL official who did not want to be named. “Nearly half of the 158 projects sanctioned before the High Court order could become operational if they get approval from the Forest Department,” the official told *The Hindu* . In January, residents of five villages in Puttur taluk protested against the project, whose promoters, they said, had blocked their access to the river. Meanwhile, the Mangalore DCF has booked a case against the company for felling trees without permission on the site of the proposed project.

The hydro power project is “ecologically and economically unviable” and “needs to be shelved”, says the report prepared by a team led by T.V. Ramachandra of CES.

### **“Govt. doing nothing about receding prospects of kuruvai crop”**

DMK leader M. Karunanidhi on Wednesday accused the State government of doing nothing about the receding prospects of kuruvai crop this year, and noted that this would be the second consecutive year that farmers would have to forgo the short-term paddy crop.



has a 60 per cent probability level, according to the Agro Climate Research Centre of Tamil Nadu Agricultural University.

The centre arrived at the district-level rainfall forecast based on the Southern Oscillation Index and sea surface temperature values using Version 4.2 of the Australian Rainman International software, Head of the Centre N. Maragatham said.

## **Hilly**

### **regions**

The centre had also developed seasonal rainfall forecast of the South West Monsoon separately for hilly regions and high rainfall zones.

### **Forecast**

“Though it is a little early to arrive at concrete figures, the preliminary prediction shows that this Monsoon will be better compared to last year throughout the State as well as for Coimbatore. The Monsoon is expected to hit the State in the first week of June. Mid-June will be an ideal time to come up with figures that will give a better forecast about the trend of the Monsoon, its period and intensity continue till the end of the season in September,” she said.

### **Summer rain**

Referring to the rain that Coimbatore received in the last couple of days, she said that this was a summer rain and there was no way to predict summer and winter rain.

These rain did not signify any new trend and should be seen only a passing phase, she added.

### **Crop planning**

The Centre would send the forecast to Commissioners of Agriculture and Horticulture, TNAU campuses and research stations, and District Joint Directors of Agriculture and Horticulture, for assisting farmers in crop planning.

### **[NABARD sanctions funds for irrigation](#)**

The National Bank for Agriculture and Rural Development (NABARD) has sanctioned Rs.42.75 crore from its Rural Infrastructure Development Fund (RIDF) to the Government of Kerala for taking up one minor irrigation and two drainage and flood protection projects in Palakkad and Kozhikode districts.

According to R. Amalorpavanathan, chief general manager, Kerala, the overall cost of these three projects would be Rs.45 crore, of which 95 per cent support is being extended under RIDF.

### **Implementation**

The NABARD-aided projects will be implemented by the State Water Resources Department.

With this, the overall sanctions under RIDF to Kerala has risen to Rs.5,404.56 crore, of which the State government has drawn Rs.3,159.33 crore (58 per cent).

During 2013-14, the State government can draw Rs.1,060 crore for sanctioned, ongoing, and to be sanctioned projects.

### **Use science for peaceful purposes: KPCC chief**

Science should be used for peaceful purposes and the progress of mankind, KPCC president Ramesh Chennithala has said.

Inaugurating a workshop on the draft science policy organised by the Kerala State Council for Science, Technology and Environment (KSCSTE) and the Sastra Vedi here on Tuesday, he said the advancements in science and technology should be utilised to increase productivity, and for peaceful initiatives. The government had framed the draft policy in line with a national policy. The thrust should be on improving research and development in PSUs to enhance agricultural production.

### **Encourage drip irrigation scheme, Ariyalur officials told**

*Farm ponds could be built to harness rainwater*



Sandeep Saxena (second from left), Agricultural Production Commissioner, inspecting a drip irrigation system at a jasmine farm of the Horticulture Department at Mallur village in Ariyalur district on Tuesday.

The State Monitoring Officer and Agricultural Production Commissioner, Sandeep Saxena, at a review meeting held here on Tuesday, asked the officials to promote and expand drip irrigation scheme among farmers in Ariyalur district.

He said farm ponds could be built to harness rainwater as Ariyalur was a rain-fed district. Officials should drive home the importance of water conservation, he said. The Cooperative Department should arrange for loans for drip irrigation.

Mr. Saxena called upon the officials to supply early to farmers agricultural inputs, which are subsidised by the Horticulture and Agriculture departments. The government scheme to provide protected drinking water should be utilised fully, he said and urged the officials to expedite all development works being carried out in the district. Mr. Saxena reviewed the schemes being implemented through Revenue and Social Welfare departments. He inspected a jasmine farm at Mallur and ascertained from farmers the benefits of drip irrigation and whether they had been given full subsidy under the scheme. District Collector M. Ravikumar and District Revenue Officer Karuppasamy were present, an official release said.

### **1,000 ponds planned in Namakkal**

After tasting success at Vadavathur panchayat – the driest part of the district – the administration is planning to construct 1,000 ponds in various parts of the district with the help of farmers.

District Collector D. Jagannathan said that the construction would be carried out under the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) on land owned by small and marginal farmers.

“The cost of digging a pond ranges between Rs. 17,588 to Rs. 1,47,802 according to the size. Since labourers are paid under the job guarantee scheme, farmers get the pond free of cost,” Mr. Jagannathan said.

The Collector said that presidents of all the 322 panchayats in the district have been asked to motivate at least three farmers in respective panchayat to provide space on their land to construct the pond.

Head of the Krishi Vigyan Kendra here B. Mohan said that the benefits of farm ponds were enjoyed by farmers of Vadavathur panchayat. They were able to increase the area under cultivation and improve their income.

“The rain water, otherwise getting wasted, can be diverted to the pond. It will help recharge open wells and borewells in the nearby areas too,” he added. Scientists at the KVK said that pumping water from borewells into these farm ponds before using it for irrigation reduces dissolved salts in the water. This would prevent drip lines getting clogged because of sedimentary deposits, they said.

“Families benefited by the 100 days job guarantee scheme of MGNREGS will be involved in digging 1,000 farm ponds in agricultural fields owned by farmers of this district during the financial year 2013-14”, District Collector D. Jagannathan told *The Hindu*.

According to a Government Order in this connection, the move is aimed at creating irrigation sources in lands owned by small and marginal farmers, developing recharge structures and to develop irrigation and drainage facilities in agricultural and horticultural fields. “It will also be one more constructive way of providing employment for MGNREGS workers throughout the year”, he said.

Five different pond sizes to suit the requirement of the farmers and availability of cultivable land in his holdings have been suggested by the government. “The man days – at Rs. 148 per day per person – for digging a pond starts at 119 man days for a small pond that is 15 metres wide,

15 m long and 0.75 m deep. A maximum of 999 man days can be set aside for a pond that is 30 m wide, 45 m long and 0.75 metres deep”, the Collector added.

“The cost of digging the pond and allotment of labourers has been classified into 30 different types based on the type of soil (ordinary and hard) for five depths ranging between 0.75 m to 2.5 m”, Mr. Jagannathan said and added that these ponds will be a boon for farmers of this drought-hit district.

The Collector said that the scheme has been promoted in revenue villages across the district and the Presidents of all the 322 Panchayats have been asked to motivate a minimum of three farmers in their Panchayat to take up this initiative in their lands. “We are confident that more farmers will take up digging farm ponds after witnessing the beneficiaries reap benefits”, he added.

### **District administration gears up to help farmers**

The district administration is gearing up to help farmers for the next Kharif season. The administration expects an estimated 5.5 lakh acres will be irrigated in the season.

Majority of the land under cultivation would be occupied by cotton and paddy as farmers take up cultivation in 4.25 lakh hectares. The cultivation of cotton is estimated to be taken up in 2.80 hectares of land. Expecting the demand for fertilisers will rise, the district administration had stocked up nearly 85,000 metric tonnes of fertilizers of different varieties. Similarly, 13 lakh packets of cotton seeds have also been made available for distribution to farmers.

The officials are mainly focusing on meeting the demand for cotton seeds in view of the complaint of shortage of seeds. The shortage led to black marketing by traders last season. This time, about 3.10 lakh packets of cotton seeds belonging to Mahyco company, which were in demand, would be made available. Last year, 1.43 lakh packets of cotton seeds of this variety were made available. Similarly, three lakh seeds belong to Kaveri were made available. In all, 11.10 lakh packets of cotton seeds were made available with the dealers for use by an estimated six lakh cotton farmers in the district. Paddy cultivation was estimated to be taken up in about 1.45 lakh hectares.



District Agricultural Technology Transfer (DATT) centre coordinator Dr. R. Uma Reddy said agricultural activity would pick up in the first week of June. With news reports of monsoon entering the Indian sub-continent a couple of days ago, this time timely rains are expected.

### **MAM college to design climate-resistant greenhouse**

The Centre for Agriculture and Rural Development (CARD), New Delhi, is collaborating with MAM College of Engineering, Tiruchi, for designing climate resilient burnt mud green houses.

According to proposal CARD has submitted to Central Research Institute for Dryland Agriculture, Hyderabad, the project titled “preparing for climate resilient agriculture in Bihar and Uttar Pradesh through designing of burnt mud greenhouses”, the project is intended for execution over a two-year period.

The project, according to M. Mukhtar Alam, Executive Director, CARD, has been envisioned to be carried out under ICAR’s (Indian Council of Agricultural Research) National Initiative on Climate Resilient Agriculture . Burnt mud green house, he said, would be a revolutionary innovation for adapting to climate change and meeting the food and nutritional security needs of people. The project involving construction of burnt-mud green houses with easily available soil and firewood would demonstrate the methodology of increasing cultivation area vertically in rain-fed land for raising rice, wheat, onion, potato, sugarcane, grape, and flower crops, surviving harsh weather.

The technology would be developed at the college in the first year, Principal M.A. Maluk Mohamed said. During the second year, at least one burnt-mud greenhouse would be built under CARD’s guidance in Lakhimpur and Bhagalpur districts in Uttar Pradesh and Bihar.

### **Meet to discuss open market policy for sugar**

A two-day national-level conference of sugarcane growers will be organised on May 24 by the Farmers’ Association of Karnataka and Sugarcane Growers’ Association.

“The meet has been convened to discuss the open market policy for sugar decided by the government,” said Kuruburu Shanthakumar, president of the sugarcane growers’ association.

Based on the recommendations of a panel headed by C. Rangarajan, advisor to Prime Minister for economic affairs, the government recently decided to decontrol the sugar industry, thus giving freedom to millers to sell in the open market.

Millers now also do not need to supply sugar at subsidised rates to ration shops.

The conference has been called to deliberate on the pros and cons of the Union government's decision.

### **1,000 delegates**

Over 1,000 delegates comprising sugarcane growers and office-bearers of the associations related to the sugar industry from Uttar Pradesh, Tamil Nadu, Maharashtra, Punjab, Haryana, Bihar, Uttaranchal and Karnataka will participate.

### **Dignitaries**

Mr. Shanthakumar said that Mr. Rangarajan is expected to attend the conference.

The former Union Minister M.V. Rajasekharan, Minister for Sugar Prakash B. Hukkeri, Minister of State for Agriculture Krishna Byre Gowda and Commissioner for Directorate of Sugar and Sugarcane Development K.S. Satyamurthy will take part in the conference.

### **Vegetable prices go through the roof**

*Heat wave in Karimnagar district affects vegetable yield*

With the soaring temperature and depletion of ground water table, the yield of vegetable crops had declined considerably forcing steep increase in prices and burdening the common man.

The vegetable prices in the Karimnagar main vegetable market near Tower circle and other markets, including the Rythu Bazaars, at Gandhi road, Kashmrigadda, have sky-rocketed due to decline in the arrival. Due to the heat, only few varieties of vegetables are available in the market. The price of tomato reached Rs. 40 to Rs. 50 per kg on Wednesday. Four days ago, it was priced at Rs. 25 per kg. Similarly, green chillies crossed Rs. 60 per kg mark on Wednesday. The ridge-gourd (beerakaya) reached Rs. 60 per kg. Vegetables such as brinjal, ladies finger, beans touched Rs. 30 per kg while carrot is priced at Rs. 50 per kg. Some

vegetables such as cauliflower, cabbage, etc have become rarer and even if available they are costing Rs. 50 per kg. Same is the case with the leafy vegetables. Spinach which was available at Rs. 20 per kg is now costing Rs. 40 per kg. Coriander price has crossed Rs. 100 per kg. The blazing heat wave had affected the farmers cultivating leafy vegetables with the decline in the production.

Usually, onions become cheaper during the summer season with the arrival of fresh stocks. However, they are also being sold at not less than Rs. 15 per kg against last year price of Rs. 7 per kg. Traditionally, Karimnagar district is known for cultivation of vegetables on a massive scale. Ironically, the district administration failed to chalk out action plan during the rabi season to take up vegetable cultivation on a massive scale by motivating the farmers by providing the necessary seed and other concessions etc, said a wholesale vendor.

#### **Upset farmers to take up UAS-B land issue with Chief Minister**



**The Hindu** Farmers led by KRRS leader Kurbur Shantkumar protesting delay by the government and the police to restore the link road land to the University of Agricultural Sciences. Photo: Anishaa Ahuja

As the deadline set by them to the government and the police to implement the order of a high-level committee to restore the land of the University of Agricultural Sciences-Bangalore that had been taken away for a road project by the Bruhat Bangalore Mahanagara Palike ended on Monday, angry farmers have now decided to take up the matter directly with Chief Minister Siddaramaiah.

“A delegation will meet Mr. Siddaramaiah and Agriculture Minister Krishna Byre Gowda on May 25 and seek their intervention in restoring the land to the university,” Karnataka State Sugarcane Growers’ Association president and Karnataka Rajya Raitha Sangha leader Kurubur Shanthkumar told *The Hindu*.

He pointed out that the BBMP’s link road project cutting through UAS-B’s land was ordered by the high-level committee constituted as per the High Court’s direction.

“We will apprise the new leaders about officials’ lack of seriousness in implementing the High Court’s directions and the [role] of vested interests, including the real estate lobby. We will demand a commitment from these two leaders that they will abide by the court instructions and restore the university land in the interest of farmers as well as farm research,” he said.

Expressing confidence that Mr. Siddaramaiah would stand by the farmers, he said the latter would brief him on their plan to restore the land themselves if the government continues to dither.

## **Background**

The BBMP had taken 24 acres of the university land in September 2009 a link road to connect Yelahanka with Bellary Road and a 3.9 km road was already built at a cost of Rs. 15.19 crore.

Seven former vice-chancellors, the university alumni association and some environmentalists filed a public interest litigation in the High Court challenging the construction of this road through land declared as a heritage site under the Biological Diversity Act. They contended that a public road slicing through the campus would affect not only its biodiversity but also sensitive experimental projects.

The High Court directed the government to constitute a high-level committee to resolve the issue. The committee, headed by Chief Secretary S.V. Ranganath, asked the authorities concerned on March 30, 2013 to shelve the project and restore the land to the university.

But local politicians and realtors had twice resisted the moves by the university to close the road and take back the land. Irritated by this, the farmers had entered the scene on May 7 and warned that they would come in thousands from across the State to the UAS-B campus to restore the land if the government fails to do so by May 20.

Mr. Krishna Byre Gowda's role with respect to the issue will be crucial as incidentally he is also the local MLA.

### **Neerbogam potato price to increase: TNAU**

*The price predicted in June-July is expected to be around Rs.27-28 a kg.*

The Domestic Export Market Intelligence Centre (DEMIC) of the Tamil Nadu Agricultural University has asked potato farmers who are harvesting the Neerbogum (February-April) sown potato to sell their produce in July after storing it.

According to a university release, DEMIC has predicted that the price of harvested potato in June-July is expected to be around Rs. 27 – Rs. 28 a kg.

The present price that is expected to prevail till June is between Rs. 24 and Rs. 25 a kg. DEMIC studied the last 10 year price chart in the Nilgiris Co-operative Marketing Society (NCMS) in Mettupalayam before predicting the trend.

Mettupalayam is one of the major trading centres of potato in India. Nilgiris potato is priced based on quality, size, colour and shelf-life. Potatoes are graded manually and sold at Mettupalayam market. The Nilgiris potatoes are considered as the best ones because of its taste, hardness and higher shelf-life. Hence, they fetch higher price.

The potato from the Nilgiris district fetches higher price than that from the other States because of superior quality, taste, and preference. The peak period of storage is January – May after which the stock is released in June-July. Farmers here store potato mainly for seed purpose.

Also, the potato that come from other States like Karnataka and Uttar Pradesh are stored for seed purpose.

Potato can be stored in cold storage for about five to six months. For details, contact 0422-2431405 / 0423-2442170.

### **Use green manure for sustainable agriculture'**

Green manures improve soil fertility and enhance farm productivity, said Sandeep Saxena, Principal Secretary and Agricultural Production Commissioner, at Perugavazhndan village in Tiruvarur district on Tuesday.

Speaking at a function to create awareness of green manures, Mr. Saxena said that Cauvery delta districts accounted for 45 per cent of the State's food production. Of this, 25 per cent came from Tiruvarur. Hence, farmers of the district should know the best cultivation practices. Use of green manures and traditional cultivation practices are the only way for sustainable agriculture, Mr. Saxena said.

He released a pamphlet brought out by KVK Needamangalam on green manures and producing value-added farm products. He distributed seeds of a green manure, *Kolinji*, to farmers.

The farmers were shown the cultivation of the manure by S. Ranganathan, secretary of the Cauvery Delta Farmers' Welfare Association and member of the Research Committee of Tamil Nadu Agriculture University, at his farm at Perugavazhndan.

M. Rajendran, Director of Agriculture, said that *Uzhavar Peruvizhas* were organised from April 14 to May 20 in all the villages in Tiruvarur district to take agriculture technology and modern cultivation practices to farmers. He invited farmers of the district to take up oil palm cultivation. Now palm oil is being imported from countries like Malaysia and farmers can get 6,000 kg of palm oil from one acre of palm crop, he said.

Farmers can take up the cultivation of minor millets such as *thinai*, *cumbu*, and *ragi*. The cultivation of minor millets in the State had come down from 45 lakh hectares in 1980 to 15 lakh hectares today, he said.

Collector S. Natarajan said that priority was given for integrated farming and raising alternate crops such as bamboo in Tiruvarur district to improve farmers' income.

### **Go for only long-term samba crop: TNAU V-C**

Farmers of Cauvery delta districts of Thanjavur, Tiruvarur and Nagapattinam should go for only long-term samba crop this year and begin cultivation from September, according to K. Ramasamy, Vice-Chancellor, Tamil Nadu Agricultural University.

He told presspersons here on Tuesday that there was no possibility of getting water from Mettur dam for kuruvai. Moreover, the ground water table had gone down. "We have to give a holiday for kuruvai this year. Farmers should raise only samba crop," Prof. Ramasamy said.

Further, farmers should go for cultivation of pulses and minor millets as alternate crops for paddy. Rainwater harvesting, artificial recharge of groundwater and prevention of sea water incursion should also be taken up to overcome the water problem, he said.

Noting that Karnataka was improving irrigation system, the Vice-Chancellor said Tamil Nadu too had allotted Rs. 1,920 crore for improving water resources in the Cauvery delta districts and Rs. 1,200 crore in other areas.

He also advised farmers to go for direct sowing of samba.

Mr. Ramasamy released a booklet 'Mettur water budgeting and crop prospects in the Cauvery delta' prepared by the Tamil Nadu Senior Agro Technocrats Forum at the Soil and Water Management Research Institute (SWMRI) at Kattuthottam near Thanjavur. Ramadoss, Joint-Director of Agriculture, (in-charge), Thanjavur district, received the first copy. P. Kalaivanan, the forum's president, was present.

### **4,000 more farm ponds for Ramnad district**

This drought-prone district is likely to get 4,000 more farm ponds in addition to the 5,000 ponds already sanctioned by the government.

The government sanctioned them as a special case after Collector K. Nanthakumar explained the drought situation and how farm ponds would be beneficial to the farmers, during failure of monsoon, at the Collectors' conference recently in Chennai.

Impressed with the farm pond model, the Government announced 50,000 farm ponds for the state. Of them, the district would get its share of 4,000 more farm ponds, official sources here said.

Official sources said the Agriculture department received more than 4,000 applications till Tuesday and is getting more and more applications. It is compiling the list of interested farmers to be sent for administrative sanction.

The list would be sent in a couple of days, the sources added. There has been a lukewarm response from the farmers in the beginning as they are not sure about the modalities of digging the ponds. Initially, they were told that the ponds would be dug by involving the workers employed under the Mahatma Gandhi National Rural Employment Guarantee Scheme under the back-end subsidy model.

Later, the farmers were told that the initial digging would be done by the MGNREGA workers and the ponds completed by the Rural Development and Agriculture Engineering departments.

Though the farmers would be abundantly benefited by the scheme, most of the small and marginal farmers are reluctant to opt as they have to set apart at least 20 cents of their small holdings



# THE HINDU Business Line

## Make Bt cotton tech available to us, small seed firms tell AP

Small and medium seed companies in Andhra Pradesh are up in arms. About 500 such companies feel that they are losing out the cottonseed business to the big players.

Unlike in the traditional business in varieties and hybrids, the small companies feel that dominance of multi-national companies will hurt their business interests.

“The domestic seed industry has grown on indigenous technology and benefitted by the public sector research system and agricultural universities by accessing technologies developed by them. In the subsequent period private companies have heavily invested in the seed research, while the contribution from public agencies has come down drastically,” S. Venkat Reddy, Honorary Secretary of Seedsmen Association, told *Business Line*.

This has weakened the small companies, threatening their very existence. For now, he asked the Government to start with BG-II technology. “You obtain it for us. We will pay you accordingly,” he said.

He cited the example of Gujarat cottonseed where in the seed companies are made to pay a huge fee (up to Rs 50 lakhs) to get access to the technology.

Mahyco-Monsanto sub-licences the Bt technology to seed companies after charging them a fee (Top seed companies paid some Rs 50 lakh as a one-time fee). Besides, the firms will have to pay royalty (or trait value) to the technology provider on each packet (of 450 gm) they sell.

“The Andhra Pradesh Government should take emulate the Gujarat example to make the technology available for small firms. We can’t afford to huge fee to get access to the technology. If you don’t have technology, you are not in the seed business,” he said.

The association represents about 500 companies in the State that is considered to be the seed capital of the country.

The State produced 50.50 lakh quintals of seed, including 41,200 quintals of cottonseed, in 2011-12 as against 45.19 lakh quintals in the previous year.

The seed business has become synonymous with cottonseed business in the country.

The four crore packet cottonseed market is dominated by the top six firms, including Nuziveedu, Ankur, Monsanto, Rasi and Mahyco. They wrest 80 per cent of the market, leaving the remaining 20 per cent to 20 players.

Earlier, the market used to have still smaller players who used to rely on the local demand.

“If seed business goes in the hands of a few large corporate houses and multi-national companies continuing their monopoly in seed business, seed prices will go up. And there is the possibility that several companies would become distributors,” he said.

#### **Turmeric trade awaits monsoon to boost prices**

Turmeric traders are pinning their hopes on the onset of monsoon that is likely to result upcountry orders and push up prices.

The turmeric price has inched up but the sale is very poor.

“The price has increased slightly due to quality, but the sale is very poor. This is due to want of demand from North India. This is the peak period for getting orders from North India but this year no exporter has received any upcountry order. Further the farmers too brought second variety, which fetched very low price. Only after the onset of monsoon, the price may go up and the sales will increase,” said R.K.V. Ravishankar, President, Erode Turmeric Merchants Association.

Of the arrival of 3,290 bags that arrived on Wednesday, only 50 per cent was sold.

At the Erode Turmeric Merchants Association sales yard, the finger variety was sold at Rs 4,364-7,009 and the root variety Rs 4,214-6,014 a quintal.

**Salem Hybrid Crop:** The finger variety fetched Rs 5,864-7,839; the root variety Rs 5,429-6,811.

Of the arrival of 723 bags, only 40 per cent stocks were sold.

At the Regulated Market Committee, the finger variety was sold at Rs 6,300- 7,206; the root variety Rs 5,209-6,306.

Of the 159 bags that arrived, 121 found takers.

At the Erode Cooperative Marketing Society, the finger variety quoted Rs 5,939-7,226; the root variety Rs 5,359-6,214.

Of the arrival of 164 bags, 133 were traded.

At the Gobichettipalayam Agricultural Cooperative Marketing Society, the finger variety fetched Rs 6,091-7,495; the root variety Rs 5,340-6,412.

All the 61 bags were sold.

### **'Rainfall across TN will be normal'**

Rainfall across most districts of Tamil Nadu is expected to be normal to near normal during the ensuing South-West Monsoon, say farm varsity experts.

The Agro Climate Research Centre at the Tamil Nadu Agricultural University has made a district level forecast of the South-West Monsoon from the data collected from the University's research stations. In the absence of research station in a particular district, the Centre has used the data from Rainman software.

The Centre has developed a model based on the Southern Oscillation Index and sea surface temperature values using Australian Rainman International 4.2

The result of the analysis indicate that Virudhunagar and Tuticorin districts can expect above normal rainfall, while in Erode, Karur, Madurai, Nagapattinam, Thanjavur, Sivagangai and Tirupur districts, it is expected to be below normal (which is less than 80 per cent of the long-term seasonal rainfall).

Rainfall is expected to be normal in Ariyalur, Cuddalore, Dindugul, Kancheepuram, Krishnagiri, Namakkal, Tiruvallur, Vellore, Tiruvannamalai, Tiruvarur, Trichy, Villupuram and Salem districts; and near normal in districts such as Coimbatore, Kanyakumari, Chennai, Dharmapuri, Perambalur, Pudukkottai, Ramanathapuram, Theni and Tirunelveli.

In the high rainfall zone of Kanyakumari district, the rainfall is expected to be near normal, while in the hilly areas of the Nilgiris and Dindigul districts, it is expected to be normal.

Chennai

Chennai - INDIA

### Today's Weather



Cloudy

### Thursday, May 23

Max Min

36° | 29°

Rain: 0

Humidity: 49

Wind: normal

Sunrise: 05:41

Sunset: 06:29

Barometer: 1003

### Tomorrow's Forecast



Partly Cloudy

### Friday, May 24

Max Min

37° | 28°

### Extended Forecast for a week

Saturday  
May 25



38° | 28°  
Partly Cloudy

Sunday  
May 26



38° | 28°  
Overcast

Monday  
May 27



38° | 28°  
Overcast

Tuesday  
May 28



38° | 28°  
Overcast

Wednesday  
May 29



38° | 28°  
Overcast

### Airport Weather

Delhi

Delhi

Rain: 0

Sunrise: 05:26

Humidity: 19

Sunset: 07:09

Wind: normal

Barometer: 999



## **Breach in Kakrapar canal worries 10k farmers**

SURAT: At least 10,000 farmers of Kim, Kadodara, Kosamba, Tadkeswar and Hansot in Surat and Bharuch districts are worried following a breach in Kakrapar canal near Vareh river. This could lead to reduction in supply of 2400 cusecs of water given daily to the farmers for irrigation. The authorities concerned can even cancel the supply of water through this canal until repair work is carried out, farmers fear.

However, Surat irrigation circle will supply that much quantity of water to the farmers as was decided. The repair is expected to be taken up only after this month end.

"This is negligence on the part of authorities. They should have ensured before the season started that there was no problem in the canal. Water is crucial for our crops," said Ramesh J Patel, an agitated sugarcane farmer of Kim.

AD Kanani, superintending engineer, Surat Irrigation Circle, said, "There is a breach in the canal but we are not going to stop the supply of water till we have given the farmers in the area the quantity of water that was decided. It was not known how big the breach is." There was loss of 30 cusecs of water on Tuesday and it was contained to 15 cusecs on Wednesday. The authorities have reduced the flow of the water slightly.

"We are monitoring [the situation](#) round the clock. We will continue to supply the water as this is the time when the farmers need it the most," Kanani added.

## **Crop insurance scheme to benefit ryots in 4 districts**

VIJAYAWADA: In a major relief to farmers of more than 30 lakh acres in four coastal districts of East Godavari, West Godavari, Krishna and Guntur, the state government has decided to take

village as a unit to implement a weather-based [crop insurance scheme](#) on pilot basis from the ensuing [kharif season](#).

The new regulation has been confined to just four districts as the government wanted to study the impact of the new scheme.

If found successful it will be implemented throughout the state. Farmers have been demanding for more than a decade that village should be taken as a unit for crop insurance instead of mandal. Climatic conditions vary within a mandal and unless the entire mandal is affected farmers will not get compensation.

Along with paddy, cotton, chilli, jowar, sugarcane, black gram and red gram would be covered under the new scheme.

Even as the Centre replaced the old crop insurance scheme with the new weather-based one a few years ago, the criteria for unit was not changed from mandal (taluk) to village, thus depriving farmers of benefits in case of natural calamity.

The Centre has now agreed to revise the guidelines and use village as a unit. The farmers have to pay 1.8 to 2.5 per cent of the total loan amount taken from the banks as premium under the crop insurance scheme.

Farmers are automatically covered under the scheme as the premium is deducted from loan they take from banks. But tenant farmers, who are being denied loans by banks, will have to pay the premium on their own.

With the coverage extended to more crops, a large number of farmers will get compensation.

**Work to determine soil suitability for crops awarded**

NAGPUR: Soil type and quality form the basis of agriculture. But its importance is seldom realized by either the farmer or agriculture planners. Despite the availability of enough information on suitability of soil types for certain types of crops, farmers seldom grow crops suited for their soil type.

But scientists at the city based National Bureau of Soil Survey and Land Use Planning (NBBSS&LUP) continue to their job of soil characterization, mapping and suitability for different crops for many years relentlessly. One such scientist is Jagdish Prasad. Principal scientist from the [Soil Resource Division](#) at the bureau, Prasad was recently honoured with a 'Special Research Award' by the [Soil Conservation Society of India](#) for his contribution in the field.

Prasad was presented with the award by the [Agriculture Minister](#) of Uttar Pradesh [Anand Singh](#) and M S Swaminathan, the father of green revolution in India and Rajya Sabha member, at a function in Lucknow. "It is a prestigious award and getting it at the hands of Swaminathan is the bigger pride," he said, speaking to TOI.

The contributions of Prasad mainly include resource inventorization of watersheds, systematic appraisal of land resources and evolving suitability criteria for crops like soyabean, cotton, sugarcane, orange, sweet orange, banana, guava, teak and sal in Central India. Two of his main achievements are the discovery of acid vertisols (deep black soils are called vertisols and they are generally alkaline in nature) in Dadra Nagar Haveli for the first time in 2009 and red vertisols in Medki village in Katol teshil in Nagpur district in 2010. He was also involved in the soil and land survey for establishment of [the National](#) Institute for Abiotic Stress Management at Baramati.

"Based on my resource inventorization interventions made in the Gondkhairi, Warangana, Nagpur, Solapur and Konkheri watersheds, huge changes could be obtained, particularly in lower reaches of watersheds in the cropping intensity in these watersheds," said Prasad.

Prasad says that knowing the quality of soil also helps in research work. It has helped in better work in research farms like Nabibagh in [Bhopal](#), Mulegaon in Solapur and Selsura in Wardha district.



Studies have also shown that soyabean is being grown in many areas in unsuitable soils in Madhya Pradesh. But unfortunately, due to large production of soyabean, farmers and administration have not bothered about it. They also did not realize that huge production was not due to increased productivity but due to large area under the crop. So there is a need to switch over from soyabean to certain other traditional crops, Prasad said.

Oranges are grown in deep swelling clay soils in Nagpur area but this has led to declining of citrus orchards as water does not drain out properly in these soils, leading to poor soil aeration, root rotting and diseases like Gumosis. Thus, when irrigation is withdrawn in orange twice during April-May for Mrig Bahar and December-January for Ambia Bahar, deep soils sometimes cause erratic flowering. Hence shallow soils are more advisable for orange as holding water for even 10-15 days leads to enough flowering.

Prasad says that detailed investigation of soils in Wardha district under banana showed that though banana can be grown in varieties of soil, the best suited soil is loamy soil as there is no water stagnation and drainage is better. Though banana roots remained confined to just 60cm of soil, majority [feeder](#) roots remain restricted to only 30-40 cm. But here, due to excessive water stagnation, roots decay. Hence soils where inner layers have coarse soil or murrum are most suitable for banana.

## SUITABLE SOILS

- \* Best natural sal grows in sloppy laterized basaltic soils and natural teaks grow best in pure basaltic landscape.
- \* Medium deep shrink-swell soils are suitable for mulberry cultivation rather than deep vertisols.
- \* Loamy soils are better for banana cultivation.
- \* Orange can grow better in shallow soils.
- \* Soyabean is not suitable for soils in Dhar district in [Madhya Pradesh](#) and alternative crops can only get back the sustainability in soil



### Guv inaugurates agri-training centre

The Governor said country's 40 per cent mineral is in Jharkhand but the State is primarily based on Agriculture and around 70 per cent of the population is on it for its livelihood hence every aspect related to development of farmer should be given importance.

The upgraded training facility can provide training to around 8,000 to 10,000 farmers and officers as against 2,000 in one year. Expressing his happiness over the facility the Ahmed said the department will provide training on technologies which highlight the importance of soil conservation and agriculture activities.

The training facility would provide training on soil conservation, watershed management, farm mechanisation and post harvest management. Around 20 per cent farm produce is lost due to poor post harvest management. Jharkhand receives annual rainfall of 1200 to 1400 mm but despite that farmers do not get adequate amount of water for irrigation, said Governor.

Irregular monsoon is the cause for the inadequate supply of water for irrigation hence water harvesting is extremely helpful for agriculture, added Ahmed. The Governor asked the farmers to awaken themselves to this and instructed the department to spread awareness on watershed. He emphasised on using latest technology to increase agricultural production and advocated training programme for the farmers on regular intervals. One unit of storage with capacity of 6000 MT & two storage of 1000 MT and two units of storage with a capacity of 100 MT will be established in every district and blocks respectively.

Ahmed said seed village is being established in every district for the benefit farmers and seed are being made available to the farmers through LAMPS & PACS. The Governor said, officials should ensure that the farmers get genuine seeds, fertilisers and pesticides on justified prices. Principal Secretary to Governor NN Sinha; Secretary ASD, Nitin Madan Kulkarni; Director Agriculture, KK Soan were among other dignitaries.

### MP expert to attend agri meet in Singapore

Many Agriculture Experts from China, Indonesia, Japan, Thailand and other countries shall be participating in this Conference. The Leaders apart from Scientists from other countries shall also be present on this occasion. A Prosperity Programme for Soybean Farmers is being organised by BASF, the organiser of this Conference, the project report of which will be presented by the famous Price Water House Coopers. Soybean Farmers from Madhya Pradesh will be mentioned in this report.