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# AGRICULTURE

SPECIAL EDITION

# TODAY

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## ANDHRA PRADESH

Scripting Agricultural Prosperity With Rythus

# YS Jagan Mohan Reddy - Praja Sankalpa Yatra



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## Smiling Rythus of Andhra CULTIVATE PRIDE IN AGRICULTURE

A visit to Andhra Pradesh, historically known as the 'Rice Bowl of India' and meeting **smiling and innovative farmers everywhere** in the holy state of Shri Tirupati Balaji is what fairy tales are made of! For the first time since graduation, I am so proud of being an agriculturist. Did I dream it? No, it is very much REAL!

Andhra Pradesh Agriculture is creating history with the state's iconic leader, Hon'ble Chief Minister **Sh YS Jagan Mohan Reddy** garu, who has truly translated national vision into reality.

Agriculture Today Group feels proud and privileged in bringing out a special edition on Andhra Pradesh Agriculture. Under the guidance of Special Chief Secretary and Commissioner RBK, **Dr Poonam Malakondaiah, IAS**, the edition focuses on the phenomenal success story scripted collectively by the enterprising and industrious farmers, a supportive and encouraging state machinery and unique government initiatives like the **Rythu Bharosa Kendra** that are having an exemplary impact on farmers' prosperity and welfare.

I will forever be indebted to Poonam Ma'am for insisting a visit to the state for a **surreal experience of witnessing the seamless government-farmer coordination** of the Rythu Bharosa Kendra (RBK) framework.

The RBK network with its **Integrated Call Center** and **single window services** to farmers has become a role model for other states. The qualified and trained team of RBK is with the farmer, beginning from seed supply to procurement of the yield at Minimum Support Price for almost all crops in every nook and corner of the state. The system has completely dismantled exploitation by middlemen in the procurement of farm produce.



On behalf of my team, I take this opportunity to thank the **Government of Andhra Pradesh** for their gratifying and overwhelming support in helping us plan this very special edition. Every meeting with Hon'ble Chief Minister Sh YS Jagan Mohan Reddy garu, distinguished department heads, eminent officials and progressive farmers was a learning experience. Our heartfelt gratitude to **Dr Sridhar Valluri** and his colleagues for coordinating an enriching journey that will fondly be remembered forever.

We look forward to meeting Smiling Farmers in all parts of the country.

Happy Reading!

*Mauli*

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A portrait of Sri Y.S. Jagan Mohan Reddy, the Hon'ble Chief Minister of Andhra Pradesh. He is a man with dark hair and a beard, wearing a white shirt, looking slightly to the right of the camera with a neutral expression. The background is a plain, light grey color. There are blue and dark blue geometric shapes in the top left and bottom right corners of the image.

**SPEARHEADING  
THE DAWN OF  
FARMERS'  
PROSPERITY**

**Sri Y.S. Jagan Mohan Reddy**  
Hon'ble Chief Minister, Andhra Pradesh

**Which were the most crucial interventions made by the Andhra Pradesh government to support state agriculture and farmers during the pandemic?**

The financial support that we have extended through schemes like YSR Rythu Bharosa, Dr.YSR Free Crop insurance, Dr.YSR Sunna Vaddi Panta Runalu (Interest free crop loans) and input subsidy have definitely helped our farmers during the pandemic. Despite the economic woes of our government, we have established price stabilization fund of Rs.3000 Crore, with the intention of providing Minimum Support Price to the farmers. This displays our commitment towards the farming community. The lockdown period coincided with the harvesting of Rabi crops in the state. Efforts were made to transport Harvesters from across the state and outside the state by issuing necessary permits to meet the harvesting needs of our farmers. A control room, in the districts as well as at the State level, was made operational for effective monitoring of the movement of harvesters and agricultural labour. Special permissions were issued to the spare parts suppliers of machinery also.

First time in the history of the State, perishable goods were purchased from the farmers through Marketing Department. 12000 MTs of Banana, 4112 MTs of Sweet Orange, 1425 MTs. of Tomato were purchased from the farmers during first wave of pandemic. Our government had also procured 190.35 Lakh MTs of

**First time in the history of the State, perishable goods had been purchased from the farmers through Marketing Department**

Paddy worth Rs.35395 Cr., and other crops such as Jowar, Maize, Bengalgram, Turmeric, Redgram and Onions from the farmers by spending Rs.6465 Cr. We were proactive during Covid-19 pandemic to help both farmers and consumers by selling 12 Lakh kits of fruits and vegetables through Women SHGs. For the first time, our government had announced MSP for important crops like Turmeric, Chillies, Minor Millets, Onion, Banana & Mosambi where the Gol has not declared MSP.

Rythu Bharosa Kendra (RBK) was my brainchild and it was initiated during the same period. It is the first of its kind in the entire nation and rendering incessant services from "Seed to Sale" of Agri & Allied sectors in transparent manner at village level. As of now there are 10778 Rythu Bharosa Kendras (RBKs) at village secretariat level supplying pre-tested certified quality inputs (both subsidy & non-subsidy) so that the farmers need not go to distant places like Mandal or district headquarters for purchase of inputs. Apart from supply of inputs, RBKs are rendering services from seed to sale of agricultural produce, Farm Machinery

CHCs, Soil and Seed Testing, Milk Procurement (Amul), Primary Health Care Centre for Animals (Trevis), Vaccination of Cattle and Sheep, Bank Correspondent Services, Service Centre for All Govt Schemes etc., Beneficiaries lists of NAVARATNALU programmes like Dr.YSR Free Crop insurance, Dr.YSR Sunna Vaddi Panta Runalu (Interest subsidy), Input subsidy due to natural calamities & procurement of agricultural produce are displayed at RBK level for Social audit to identify the eligible farmers in a transparent way.

Nine hours day time free power supply to agricultural consumers under the Scheme "NAVARATNALU" was provided to 49,268 no. of agricultural services. The agricultural services in the state are fed through 6,735 feeders, Out of which 6602 no. of feeders (98.03%) are capable of supplying 9 hrs day time supply with the existing infrastructure. Aquaculture farmers are also being provided extension of supply at subsidized rate of Rs.1.50 per unit.

**Agricultural development has been the top most priority of this government. We understand that the Rythu Bharosa Kendra is an initiative that you are particularly proud of. How is the RBK setup helping farmers in Andhra Pradesh?**

During my *Padayatra* of 3648 kms across the state, when I was the opposition



Budget allocations to Agriculture & allied sectors has increased substantially from 2019-20 to 2021-22 i.e., Rs.28866 Cr. (12.66%) out of total state budget of Rs.227975 Cr., Rs.29159 Cr. (12.97%) out of Rs.224789 Cr., Rs.31256 Cr. (13.60%) out of Rs.229779 Cr., with a vision to support the farming community as this sector contributes major portion of GSDP (34%) which is 16% at national level.

leader, I heard how our farmers followed the advices of fellow farmers and input dealers for farming, who themselves had scant knowledge on cultural, chemical practices and critical stages of various crops. I came to know of the long journeys they undertook to reach the Mandal headquarters / towns where they waited for hours in a queue for availing subsidised seeds and how they shelled out their hard earned money to buy inputs, even though some of the inputs were not recommended for their crop. At the end of this ordeal, their dreams were shattered due to low quality yields, low prices and interference of middlemen, resulting in debts and suicides.

When I assumed the charge in 2019, Rythu Bharosa kendralu was initiated integrating Agri Input shop and Farmer Knowledge Center at village level. Since May, 2020, these RBKs have been functioning in Government and Private buildings by acting as single point of contact. The government stepped forward and sanctioned 10408 permanent RBK buildings to become an asset for the welfare of farmer at village level duly earmarking an amount of Rs.2281.8 Cr. towards construction of RBKs (@Rs.21.80 Lakh per building) and entrusted to PR & RD Department.

**Credit is an important input in agriculture. With financial challenges, how has the government ensured that enough capital flows into agriculture?**

Credit is an important input for Agriculture. To ensure timely and uninterrupted credit flow to agriculture, our government has taken several initiatives such as YSR Sunna Vaddi Panta Runalu (SVPR), Enacting of the new act for crop cultivators and issuing of crop cultivators rights card to tenant farmers, Encouraging formation of JLGs to provide institutional credit to tenant farmers in group mode and integration of Business Correspondents (BCs) services at RBKs. We have observed that Credit flow of Rs.113998 Cr., Rs.146879 Cr. & Rs. 1,05,745 Cr. (As on date, Crop loans of Rs.86,678 Cr.



**Operational since October 15th, 2019, YSR RYTHU BHAROSA- PMKISAN” scheme has been extending financial assistance of Rs. 13,500/- (Rs. 7500/- from the AP Govt. funds and Rs. 6000/- from Gol through PM-KISAN) to all the eligible land owner farmer families.**

& Agriculture Term Loans of Rs. 19,067 Cr.) was disbursed during 2019-20, 2020-21 & 2021-22 respectively. Our Government has proposed to integrate loan charge register in the banks with e-Crop from next year onwards so that the crop loans will be given only to the actual cultivators based on e-crop booking. We have also proposed to integrate the services of Business Correspondents/Bank Mithras(BCs) at RBKs with an objective to extend all the banking services and financial inclusiveness in the rural areas where more agriculture area is concentrated. As on date, 9160 BCs have been mapped with 10778 RBKs. The Gov-

ernment is taking steps to deploy the remaining 1618 BCs also to extend the banking services at all 10778 RBKs.

**How are the interests of tenant farmers protected in the state?**

Andhra Pradesh is pioneer in tenant farmer finance since long back. On analysis of sociological profile of tenant farmers it is observed that most of them are marginal farmers particularly from under privileged sections who are in dire need of institutional finance. We introduced “Andhra Pradesh Crop Cultivators Right Act 2019” from 17-08-2019 to provide all facilities including banking, insurance and other government benefits to tenant farmers without affecting the rights of the owner of the land.

**How has YSR RYTHU BHAROSA-PMKISAN” scheme helped farmers of Andhra Pradesh?**

Operational since October 15<sup>th</sup>, 2019, YSR RYTHU BHAROSA- PMKISAN” scheme has been extending financial assistance of Rs. 13,500/- (Rs. 7500/- from the AP Govt. funds and Rs. 6000/- from Gol through PM-KISAN) to all the eligible land owner farmer families. The benefit of Rs. 13,500/- is also being extended to



According to the Act, Crop Cultivator Rights Cards (CCRC) will be issued with the mutual agreement of land owner and cultivator for a period of 11 months, which entitles the tenant farmer to avail bank finance. Tenants have all the rights on the Crop for a period of 11 months and are eligible for all the government schemes related to crop. In spite of issuing CCRCs, still there are tenant farmers left without coverage under CCRC cultivating their crops. The Government has taken an initiative to bring those landless tenant farmers into farming by forming Joint Liability Groups to access the institutional credit. An amount of Rs.2304 Cr. to 3.87 Lakh tenants during 2019-20, Rs. 1055 Cr. to 1.96 lakh farmers during 2020-21 and Rs.1176.68 Cr. crop loans were distributed to 1.82 lakh tenant farmers during 2021-22.

i.e., November, 2021. Rs.21.96 Cr. was disbursed to 34556 farmers. An amount of Rs.542.06 Cr. to 5.97 Lakh farmers have been credited directly through DBT on 15.02.2022 during November 2021 heavy rains and floods.

## 2022-23 has been declared as the International year of Millets. What are the plans of the government to increase the scale of millet production in the state?

Prof. M.S.Swaminadhan designated millets as 'Nutritious millets' because of its nutritive properties like high fiber, protein, mineral composition. At present, NFSM-Nutricereals scheme is being implemented under NFSM in all the 13 districts of Andhra Pradesh state with an objective of increasing area and productivity. To further encourage the millets cultivation, a separate proposal is prepared for organization of Cluster Demonstrations and Dr.YSR Polambadi (Farmers Field School) programme on Millets, especially on Foxtail millet to increase area, production and productivity and impact assessment of Polambadis in organic farming in a sustained manner.

## What is the Organic Policy of the state?

The State of Andhra Pradesh would like to promote Organic Farming which is

the eligible Landless (Tenants) SC, ST, BC, Minority cultivators including ROFR & Endowment land Cultivators exclusively from the State Government funds. The timely financial assistance extended to the farmers i.e., during May was utilized by the farmers towards purchase of various agricultural inputs like seeds, fertilizers, etc., and services like agricultural labour, tractor hiring charges etc., during October for harvesting purposes and for other agricultural purposes during January without depending on private money lenders. The timely availability of funds to the small & marginal farmers through RBKs has empowered them to take up crop management efficiently and this has led to increased productivity and profits. Since inception of the scheme, an amount of Rs.20117 Cr. was credited directly into the bank accounts of 52.38 Lakh farmer families.

## RBK is the first of its kind in the entire nation and rendering incessant services from "Seed to Sale" of Agri & Allied sectors in transparent manner at village level.

from June to October, the losses due to heavy rains and floods were settled with an amount of Rs.285.51 Cr. to 3.80 Lakh farmers in the month of October 2021. NIVAR cyclone occurred in the fog end of November month. The input subsidy was paid in December only. Rs.645.99 Cr. was disbursed to 8.35 Lakh farmers. Gulab cyclone occurred in the fog end of September, 2021 month. The input subsidy was paid within 45 days

## Unfortunately Andhra Pradesh had to survive several natural calamities. Farmers too have borne the brunt. What support did this government extend to them?

We have established Natural Calamity Relief Fund of Rs.2000 Cr. Our policy is that in the times of occurrence of Natural Calamities, the input subsidy has to be provided to the farmers who lost their crops in the same season for utilization in the next crop. The reforms have been brought under implementation in sanctioning & disbursement of input subsidy to the farmers through DBT in the event of crop damage due to Natural calamities. For instance, the calamity period

For increasing the area under millets and productivity, the following strategies/ Interventions are being adopted by the state.

- Focus on cultivation of Nutricereals in rainfed areas, fallow and waste lands of low productivity and high potential districts.
- For area expansion, the state is promoting the improved technologies like seed, Integrated Nutrient Management, Integrated Pest Management, input use efficiency along with capacity building of the farmers.
- All types of critical inputs like seeds, seed treatment chemicals, Farm equipment, bio-pesticides, PP chemicals etc., are supplied through RBKs on 50% subsidy to the farmers.
- Processing and value addition at farm level to enhance local consumption.
- Creating awareness by road shows, district and state level festivals and publicity about the nutritional and health benefits over other traditional food grains and popularization of millet products among the consumers.
- Creating marketing infrastructure with innovative supply chain model for increasing the farmer's income.



beneficial to the farmers and the environment. A committee has been constituted to examine the best practices, available technologies / protocols in organic farming and prepare draft policy for organic farming for the AP State.

Road map for organic farming in Dr.YSR Polambadi (FFS) in which Good Agronomic Practices (GAPs) are followed & also Organic certification is planned in 3 phases

1<sup>st</sup> phase- Conducting Polambadi for 3 years

2<sup>nd</sup> phase- Implementing GAPs for 3 years and issuance of GAP certification.

3<sup>rd</sup> phase- launching the process of organic production and certification.

AP Seed certification Agency is identified for issuance of GAP certificate to the producers. APSSCA will be strengthened by establishing Crop Certification Division. APSSCA will be brought under the accreditation of APEDA to determine its authenticity. Farmers groups will be formed in the lines of FPOs/FIGs and linked with the buyers and traders to form a supply chain for marketing of GAP products. We have planned to impart Capacity Building on GAPs under FAO Technical Cooperation Program to all the State level officers of Agriculture & Horticulture Departments including the Scientists of ANGRAU & Dr YSRHU; Divisional & Mandal level Officers; and farmers.

**What is your vision for Andhra Pradesh agriculture? What would be your road map for making**

### **Andhra, the most envinous success story in the history of Indian Agriculture?**

My first priority would be to promote efficient use of resources. As you know, AP is the rice bowl of India. We are one of the main contributors to National food security. Since it is a high water consuming crop, we have been discouraging cultivation of paddy with groundwater sources. I also want to strengthen RBKs and I want to bring them to the ISO 9001-2015 standards. Actual cultivators should get enough credit support. Our initiative of e-Crop booking, which is a digital android application to register all the actual cultivators being adopted in AP, is a crucial step in this regard. It is the single source of truth for extending all the welfare programme benefits like Dr.YSR Free Crop insurance, Dr.YSR SVPR (Interest free crop loans), disbursement of Input subsidy to the farmers in the event of natural calamities and procurement of harvested produce from the farmers. Now, the e-Crop application is being integrated with the Loan charge

register of the Banks to ensure the credit flow to the right cultivator with right crop.

I am keen on establishing Multi Purpose Facilitation Centres (MPFCs) for development of Agriculture Infrastructure Facility at each RBK level. It has all been planned in a phased manner. In Phase-I, 1255 godowns, drying platforms and other infrastructure are to be constructed for an amount of Rs.736.03 Cr. In Phase-II, 1281 number of godowns, drying platforms and other infrastructure to be constructed for an amount of Rs.920.15 Cr. Community Hiring Centers (CHCs) also need to be established so that small & marginal farmers can access costly machinery at reasonable rates on hiring basis. We have planned 10750 such CHCs at RBK level by forming a group of min. 5 farmers (@Rs.15 lakhs worth machinery) and 1615 CHCs at cluster level (@Rs.25 Lakhs worth with combined harvesters). Farmers are getting benefit of 40% subsidy and 50% Bank loan with 3% interest subvention from AIF with their own contribution of 10%.

# RYTHU BHAROSA KENDRAM, VANUKURU

Rythu Bharosa Kendram, Vanukuru in Penamaluru Mandal of Krishna district is one of the ISO certified RBKs of Andhra Pradesh. A monthly visit by Rythu Bharosa Rathams, a bus that is equipped with a LED wall, two-way functioning speakers, CCTV surveillance, equipment to host a video conference, GPS tracking, spotlights, backlight posters, and a 10 KW generator to the RBK premises is well attended by the farmers of the village. Pre-recorded videos on agricultural advancements and new improved techniques and solutions that can be adopted by the farmers are screened. The video conferencing feature will allow farmers to have one-to-one interaction with scientists in real-time to clarify their queries or concerns. The vehicle has been able to grab the attention of farmers and they have implemented some of the new knowledge disseminated through this service. Rythu Rama Raja, Subrahmanyam and Sathanarayana are farmers of Vankuru who cultivate paddy during Kharif and Blackgram in the Rabi. Impressed by the quality attributes of VBN-8, a variety of black gram, about which they came to know through one of the programmes aired on the Radha, they have decided to sow it in the next season. The Rythu Bharosa Ratham also brings awareness among farmers on the various government schemes.

The RBK hosts the kiosk which acts as the interface between the farmers and the outside world. The farmer logs in to the system with his phone number, after which he is taken through the different inputs available with the RBK. He can select his product and check out after payment through digital means or direct payment.

"If he doesn't have any cash or any digital means we have our banking




correspondents to help them. She has an amount of upto one lakh as ready cash with her. She carries the machine with her to withdraw the money. She also helps the farmers with other banking activities. They can deposit money through her. Open accounts. She will help to fill out the documents for them. She will help the farmers with all banking facilities free of cost". Yamini, a post graduate in the discipline of Agriculture Economics is the Village Agriculture Assistant here. She further goes on to demonstrate that all the inputs available with the RBKs are pre tested and certified. She lifts up a product and scans the QR code on it which is then followed by an automated voice message which ratifies that the product is a certified one and is safe to use. A nearby godown has stacked bags of fertilisers.

The walls of the RBK have posters beautifully arranged. "These are the information regarding different schemes and programmes of the government" Shylaja, the Agriculture Officer, under whom this RBK functions, further points to the innumerable printouts posted on the walls of RBK at the entrance. They have the name of the farmers in that village. "These are for social auditing. The list of farmers for whom insurance has been sanctioned is displayed

here. If someone is left out, they can contact us. We have also displayed the list of farmers whose claims for Rythu Bharosa schemes were rejected. Not only the names but we also display the reason for rejection." Shylaja is the Agriculture officer at Mandal level and she has ten RBKs under her.

The Knowledge centers functioning in RBKs, apart from Rythu Bharosa Rathams have magazines and a facility to see videos that were once displayed on the rathams. Farmers can sit and read the books, interact with each other and also the RBK officer.

RBKs are also centers for procurement. Samples are collected from the fields after harvest and moisture is analysed with the moisture meter at the RBKs. The printed receipt from the RBKs are handed over to the millers. "The moisture content should not be above 17 per cent. If above 17 per cent they are asked to dry them further and bring them back. Transportation charges, gunny bags are all provided by the government. Earlier the millers took advantage of the farmers. Without even assessing the moisture content scientifically, they would fix the prices, most of the time below MSPs. After RBKs took over the procurement, within 21 days the amount will be credited to the farmers' bank," Shylaja explains.



# ANDHRA AGRICULTURE - CREATING HISTORY

## How has the government ensured financial inclusion of the farming community of Andhra Pradesh?

The Government of Andhra Pradesh has been implementing, "YSR RYTHU BHAROSA- PMKISAN" scheme since October 15th, 2019 which ensures a financial assistance of Rs. 13,500/- to all the eligible land owner farmer families. This assistance is also being extended to the eligible Landless (Tenants) SC, ST, BC, Minority cultivators including ROFR & Endowment land Cultivators exclusively from the State Govt. funds. The Government is also extending the benefit of this scheme to the farmers those who are residing in Yanam (UT) and having Agricultural lands in Andhra Pradesh region from 2021-22. The timely financial assistance extended to the farmers i.e., during May was utilized by the farmers towards purchase of various agricultural inputs like seeds, fertilizers,

**Sri Kurasala Kannababu**  
Hon'ble Agriculture Minister,  
Andhra Pradesh

etc., and services like agril. labour, tractor hiring charges etc., during October for harvesting purposes and for other agricultural purposes during January without depending on private money lenders. Even at the time of peak covid situations during 2020 and 2021, timely financial assistance was extended under Rythu Bharosa scheme which helped the farmers to meet the agricultural needs.

## How has Rythu Bharosa Kendras helped the farmers of Andhra Pradesh?

Rythu Bharosa Kendralu (RBKs) has turned into a common platform to integrate different line functions. This was highly necessitated to excel and accelerate Government services qualitatively and quantitatively and to create fiscal discipline. RBKs has received certificates and are being assessed and approved to the requirement of ISO 9001:2015 for the compliance of quality Management System of RBKs for supply of pre-tested quality inputs, capacity building & knowledge dissemination, farmer advisories, procurement operations and delivery of welfare services to the farmers from Quest Certification Pvt. Ltd. Besides input supply, the government has declared all RBKs as procurement centres. Market intervention through price stabilisation fund helped those farmers who were selling their crops below the MSP. This also helped those crops which did not have MSP. The Government took a historical decision of announcing MSP for 6 crops which are significantly grown in Andhra Pradesh. Chillies-Rs.7000 per quintal, Turmeric-Rs.6850 per quintal, Onion-Rs.770 per quintal, Minor Millets-Rs.2500 per quintal, Banana -Rs.800 per quintal, Sweet Orange -Rs.1400 per quintal.

AP is the only State in the country which collects farm prices from each RBK on a daily basis through an App called the CM APP (Continuous Monitoring of Agriculture Prices and Procurement). Through this app, prices are collected

## AP is the only State in the country which collects farm prices from each RBK on a daily basis through an App called the CM APP

daily and market intervention is done wherever necessary.

## How much importance is being laid on Natural farming in Andhra Pradesh? Are there any specific districts in the state that natural farming is dominant?

The Government is implementing the Andhra Pradesh community managed natural farming (APCNF) programme in 3009 Rythu Bharosa Kendrams covering 3730 gram panchayats, and all the 662 rural mandals in all the 13 districts. A dedicated Govt entity in the form of Rythu Sadhikara Samstha (RySS), has been charged with the responsibility of implementing the programme. The State Govt has set up a separate Department of Natural Farming, within the Agriculture Dept to oversee the programme. The Chief Minister is committed to Organic/ Natural Farming across the State and an Organic Policy is under finalization and is overlooked by me. The commitment of the State Govt to Natural farming is seen by the fact that many Govt departments are working closely with RySS: Animal Husbandry, Rural Development, Women & Child welfare, Social Welfare, Tribal Welfare, Education, Health, TTD, etc. Andhra Pradesh has been requested to provide technical support to other States and other countries in their efforts to transition to Natural farming.

The exceptional momentum in Andhra Pradesh is on account of the support of the Hon'ble Chief Minister.

## What is the e-cropping platform? How does it help the farmers?

An android software app viz., e-Crop app. has been developed for use by Agriculture, Horticulture, Sericulture, Fodder, Social Forestry & Fisheries Departments through which survey number wise, farmer wise, crop extent was recorded along with farmer details. e-Crop app is integrated into Rythu Bharosa-Unified Digital Platform (RB-UDP) developed by e-Pragati Authority & Baker Tilly JFC Infotech Pvt. Ltd. Verification of actual area sown with crop is done by ground truthing. Registration of farmers under e-Crop for all agriculture crops is continuously carried out as long as the crop is grown in that village. All land parcels wherever crop is sown in a village is recorded. Provision is also made to register the Actual Cultivator including tenants, ROFR and Crop Cultivators Right Card (CCRCs) holders. 112.26 lakh acres was recorded under e-crop booking during Kharif 2021 & 5.02 lakh acres during Rabi 2021-22.

## What are the steps taken by the government to improve agricultural marketing through e-Crop?

e-crop data is being integrated with the procurement portals of Civil Supplies dept. to enable them to procure paddy at MSP in the RBKs, CCI for Cotton & AP Markfed for other crops like Groundnut, Pulses, Jowar, Bajra, Turmeric etc., from the actual cultivators. Biometric authentication through e-KYC is being taken from the Cultivator in the RBK to

In 2022-23, it is planned to cover 10.5 lakh farmers (21% of farmers in the State) in 4641 RBKs covering 6110 Gram Panchayats (43% villages in the State). The programme will also cover 5.0 lakh landless farmworkers in the State, through homestead gardens. All the Rythu Bharosa Kendra staff have been oriented on Natural farming. They work in tandem with the community cadres and field functionaries. The State Govt plans to cover all 10778 RBKs in the State in 2022-23.

ensure accountability in DBT system.

### **Besides the conventional crops in AP, which are the crops the state is keen on investing in? What steps have been taken in this direction?**

New crops like Dragon fruit, Taiwan Guava, Mauritius variety of Pineapple, Strawberry, Cinnamon, Nutmeg, improved Black Pepper variety, improved variety of Turmeric & Ginger, Japanese Mint etc., have been introduced for generating higher income to the farmers. Under Mission for Integrated Development of Horticulture (MIDH), Govt. of India has directed states to promote exotic fruit crops like Dragon fruit, Avacado, Fig, Passion fruit, Strawberry and Niche fruit crops like Amla, Karonda, Garcinia, Jamun, Tamarind, Jackfruit. Accordingly action plan has been submitted to cover nearly 600 ha under these Exotic and Niche crops during 2021-22.

- ❖ New crops like Apple, Cinnamon, Strawberry were proposed in Paderu agency area in addition to Coffee, Ginger, Turmeric, Pineapple plantations with improved varieties.
- ❖ Juicy varieties in Oranges like kinnow and Nagpur santras were planned to cover under area expansion in Ananthapuramu.
- ❖ NHRDF Onion varieties Red 3, Red 4, Agrifound light Red and Krishnapuram were planned to take up in Kurnool and YSR Kadapa districts.
- ❖ Hybrid varieties of Tomato Rishika, Abhinav were planned to be promoted in Chittoor district.

### **What is the importance of cooperatives in Agriculture?**

Agriculture plays an important role in the livelihood of people as more than 70% of the population lives in rural areas and depends on agriculture and related livelihood opportunities. As such, agriculture is the primary occupation in rural areas and industrial development is interlinked and based on the prosperity in agriculture. Timely credit is one of the ingredients for the survival and growth

## **Our goal is to place the State of Andhra Pradesh as one of the India's leading state in milk, meat and egg production.**

of the agriculture sector. The main objective of three tier Cooperative Credit Structure i.e. Primary Agriculture Credit Cooperative Societies (PACs), District Cooperative Central Banks (DCCBs) and State Cooperative Bank (SCB) in the State is to finance agriculture credit (Short term, Medium Term, Long Term) and other types of loans to the members and member societies and to finance credit in agriculture and allied sectors. Also, cooperatives take active role in providing required agriculture inputs like fertilisers, pesticides, seeds etc to farmers. As the agriculture operations are getting modernised and as many of the cultivators are doing cultivation on lease basis, the availability of required amount of investment in time plays a crucial role in farming activity. As majority of them are small and marginal farmers cannot afford to arrange the capital required for carrying out seasonal agricultural operations on their own, due to their economic backwardness. In this backdrop, the rural cooperative credit agencies play a major role as they provide ST and LT

loans for farming activities with cheaper rate of interest. The prices of fertilisers, pesticides, improved seeds, agricultural implements is market driven and often manipulated by private agencies and turns unaffordable to a farmer if there is no intervention from the Government. The inputs are also subjected to adulteration which affect the farmers in a large way. Maintenance of buffer stock by Cooperatives and supplying them to farmers control the market prices and make them available to the farmers in needy times.

### **What are the interventions from the government to strengthen the cooperative segment?**

Revival of cooperatives is the need of the hour to make them vibrant to the requirements of the stakeholders. With this view, a study was conducted by the NABARD Consultancy Services Pvt. Ltd. which gave certain recommendations pertaining to aspects like Governance, business development, audit, legal aspects, technology etc.

Accordingly, amendments were proposed to Sections 12, 13, 20, 31A, 34, 50, 115-D & 123 of APCS Act 1964 & corresponding Rule 8, 22-A, 24 (4) & 28 of A.P.C.S. Rules, 1964. The proposal to carry out necessary amendments to APCS Act & Rules 1964 is under the examination of the Government (now referred to LAG for opinion).

Government of Andhra Pradesh

### **Main recommendations and amendments proposed**

- ❖ Bringing in professionalism in management of PACS and DCCBs.
- ❖ To create common cadre among GMs and DGMs cadres in DCCBs.
- ❖ Selection committee for CEOs of DCCBs.
- ❖ To increase the membership and influx in PACS by reducing the time from two years to one year.
- ❖ To design and implement development action plan to grow as multi-purpose functional cooperative societies and cater to the needs of the members.
- ❖ To enhance financial base of PACS by inviting impact investors.
- ❖ To introduce concurrent audit also in PACS in addition to existing annual statutory audit.
- ❖ To bring in professional audit by qualified Chartered Accountants within time frame of 3 months from close of the financial year.
- ❖ Voting rights to non-loanee / transacting minimum of Rs.10,000/-.

with an objective to develop farm gate infrastructure across the State at RBK level, and develop PACS as Multi Purpose Facility Centres, has proposed to avail the Central Government Agriculture Infrastructure Fund scheme through Primary Agricultural Cooperative Credit Societies (PACS) in the State, for which refinance facility is available from NABARD. Integrated Cooperative Development Project (ICDP) is a scheme with financial assistance of NCDC. As per the funding pattern, 80% of fund is taken in the form of loan, and 20% Subsidy from NCDC. The NCDC has sanctioned ICD Project for 3 Districts i.e., Chittoor, Kurnool and East Godavari under Phase-II with total project outlay of Rs.609.39 Cr. for five (5) years. The 1st year outlay of the funds was released by the State Government towards implementation of activities. The NCDC has sanctioned the 2nd year project outlay of 3 projects on 09.02.2022. The funds are sanctioned to the State Government - East Godavari - Rs. 4710.662 Lakhs, Kurnool - Rs.3162.216 Lakhs and Chittoor - 5883.772 Lakhs. The Government also proposes to avail the Centrally sponsored scheme for Digitalisation of the PACS for reviving and enhancing their competencies, and bringing in accountability and transparency in their functioning.

### **Among the other subsectors such as horticulture, fisheries, livestock, sericulture, which do you think holds a lot of potential for the state. Are there any specific plans to encourage them?**

Horticulture has high potential among allied sectors. As per "Good Governance Index Report 2020-21" published by the Department of Administrative Reforms & Public Grievances GoI, Horticulture is the only sector among allied sectors which has shown CAGR (Compound Annual Growth Rate) of 12.3% in 2020-21 from 4.7% in 2019-20.

### **Innovative Programmes implemented in horticulture**

- ❖ Crop Diversification from traditional Agriculture crops to commercial Horticulture crops.
- ❖ Additional enhanced assistance for development of Oilpalm.
- ❖ Promotion of niche Crops like Aonla, Koronda, Jamun, Jack fruit, Tamarind and Exotic crops like Dragon fruit, Avacado, Fig, Passion fruit, Strawberry under MIDH.
- ❖ Govt. of A.P has amended "Andhra Pradesh Registration of Horticulture Nurseries (Regulation) Act, 2010" to ensure supply of quality planting materials to the farmers.



### **What is the significance of Significance of fisheries sector in A.P?**

I consider the fisheries Sector to be the 'Sunrise Sector of Andhra Pradesh'. Among the agricultural allied sectors in AP, fisheries has experienced significantly high growth rate of 14.71% CAGR compared to the growth rate of whole agriculture and allied sector of around 8%. Contribution of fisheries sector to State GSDP is INR 77588 Crores which is 7.86% of state's GSDP (Total GSDP of AP is INR 9,86,611 Crores). Fisheries touched gross value of more than 53 thousand Cr. INR in 2020-21. The state has been contributing significantly to the fish basket of the country in both coastal and freshwater aquaculture and supplying the produce to North Eastern states, Bihar, WB, Orissa, UP, Punjab etc. AP is the major contributor of Sea food exports by value INR 15832 Cr i.e., 36% share in 2020-21 against country's export INR

43,717 Cr. AP continued its leading position during 2019-20 and 2020-21 in culture shrimp production. During 2020-21, AP produced 6.40 Lakh MT shrimp against the country production of 8.52 Lakh MT which is 75%. Understanding this huge potential, AP Govt. has identified the Fisheries sector as one of the Growth Engines for socio-economic development of the state.

### **What is the potential of animal husbandry sector in Andhra Pradesh?**

Andhra Pradesh is homeland of world famous Ongole and Punganur cattle, Godavari Buffaloes, Nellore Sheep and Aseel Poultry breeds. The state is endowed with rich natural livestock resources and has got 108.19 Lakh Cattle & Buffalo, 231.49 Lakh Sheep & Goat and 1078.63 Lakh poultry population owned by 62.54 lakh households who are engaged in livestock related activities. The state stands at 1st position in Egg production ( 2496.39 Crore eggs), 2nd position in Meat production (9.54 Lakh MTs) and 5th position in Milk production (147.14 Lakh MTs) in the country. The contribution of livestock sector to the state economy is Rs.112972 Cr. which is 11.80% of GVA at current prices. The Livestock Sector contributed to about one-third (33.56%) of Agriculture Sector's contribution during 2020-21. Our goal is to place the State of Andhra Pradesh as one of the India's leading state in milk, meat and egg production.

# Captaining TEAM AGRICULTURE



## What is the position of the state in the country in agriculture post bifurcation?

AP state recorded highest food grain production of 175.12 Lakh MTs during 2019-20, which is the highest in the state in the past one decade. The highest food grain production was due to higher yields obtained in Paddy, Maize, Groundnut, Redgram, Bengalgram, Blackgram & Millet crops. AP stood second in productivity of Rice (3880 kg/ha.), Maize (7055 kg/ha.) & Cotton (649 kg/ha.) during the same period. AP

Govt. ranked first in Good Governance Index (GGI) for the year 2020-21 announced recently for Agriculture & allied sectors



## Dr. (Smt). Poonam Malakondaiah

Chief Commissioner, RBKs & Spl. Chief Secretary to Govt., Andhra Pradesh



towards achieving growth rate of 11.3% in Agriculture sector, 12.3% in Horticulture, 11.7% in Animal Husbandry & 10.3% in Meat production. 10778 Rythu Bharosa Kendras (RBKs) established across the state have enabled the farmers to access technology through Digital Kiosks at RBKs, to place indents of their choice and to get Pre-tested Quality inputs at their door steps with in a stipulated time at MRP/below MRP. Dr. Y.S.R. Polambadi is being conducted at RBK level to empower the farmers by adopting best agricultural practices and decision making in his own field and to enhance the crop yields through eco-friendly organic farming in a scientific manner. RBKs were also declared as procurement centers to procure harvested produce at farm gate. Expenses for ferrying their farm produce to Mandal procurement point thus have been minimized.

Country's first ever Banana Fruit Train (Kisan Rail) from Tadipatri, AP to JNPT, Mumbai for Banana Export was started in partnership with CONCOR. Mangoes to a tune of 1450 MT from Vapour Heat Treatment (VHT) plant, Tirupathi and 30 MT from Nuzvid were exported to Europe, Asia Pacific and Middle East Countries during 2020.

Advices are being provided through Agri Advisory Boards established at State level, District level, Mandal level & RBK level on better crop planning & Marketing of Agriculture produce based on the agro climatic situation. Biometric authentication of crop booking through e-Crop app recognizes actual cultivator which has ensured that benefits of the government schemes like Dr.YSR Free Crop insurance, Dr.YSR Sunna Vaddi Panta Runalu, Input subsidy and Procurement of agricultural produce at MSP etc., reached actual cultivators. Tenants were recognised in the state through "Andhra Pradesh Crop Cultivators Right Act 2019".

### **What challenges did the state face due to bifurcation and how was it overcome?**

In united Andhra Pradesh, there was

### **AP state recorded highest food grain production of 175.12 Lakh MTs during 2019-20, which is the highest in the state in the past one decade.**

one Agricultural University, located in Hyderabad and presently it is in Telangana state. So an Agricultural University was established at Lam farm, Guntur along with 6 Regional agricultural Research Stations located at respective 6 Agro Climatic Zones of bifurcated AP. The DNA finger printing & transgenic crops monitoring laboratory, Bio-pesticides quality control laboratory and pesticide residue testing laboratory were also allotted to Telangana State. The Apex agriculture training institute SAMETI was also allotted to Telangana. It takes considerable time and expenditure to develop such facilities in A.P. The Govt of AP issued instructions to shift Tenth Schedule Institutions for which there are no assets at Hyderabad to the new capital region immediately. In accordance to the instructions, AP DNA lab was shifted from Hyderabad to Guntur in August 2017. At present, the DNA Fingerprinting & Transgenic Crops Monitoring Lab is Located in Guntur and are handling Seed samples of the State. The Combined Lab equipment and small funds are still in the control of Telangana DNA lab.

Since the Biopesticide testing Lab present in Hyderabad is meeting the requirements of Telangana state only, it has been proposed to establish a new Biopesticide testing Lab in Andhra Pradesh in Amaravati Agriculture Complex. Funds are not yet sanctioned for its establishment. There are 969 private seed processing units in Telangana as against 309 in Andhra Pradesh. As a result, the capacity of seed processing facility and supply are affected adversely in the State of Andhra Pradesh. To ensure availability of quality agricultural inputs like Seed,

Fertilizer and Pesticides to the Farmers, the Government has established 147 Integrated Agri Labs 147 at Constituency Level and 13 at District level along with Four (4) Regional Coding Centres across the state. The Integrated Labs will test the quality of inputs at RBK Hubs and as well as the inputs available in the markets. Prior to July 8th 2021, only three Fertilizer Testing Labs, five Pesticide Testing Labs and three Seed testing labs existed in the state. Highest no. of labs were in Tamil Nadu i.e., 33 Labs. But on July 8th Hon'ble Chief Minister of AP inaugurated 70 Constituency Agri Labs and now Andhra Pradesh has become the No 1 state in the country in respect of number of Quality control laboratories. Further, 77 more constituency labs and 13 District labs will be inaugurated and start functioning by Kharif 2022.

Government has created a separate department for effectively monitoring Service Delivery Mechanism happening through 15,004 Village and Ward Secretariats, which are administrative units created for every 2,000 population in State. These secretariats are being operated by qualified staff to discharge their duties of Agriculture & allied sectors viz., Village Agriculture Assistants / Village Horticulture Assistant / Village Sericulture Assistants & Village Animal Husbandry Assistants / Village Fisheries Assistants.

### **What are the schemes that the state government had introduced? What visible changes had it brought about?**

Fulfilling the promise of providing free bore wells to the farmers, the Hon'ble Chief Minister has launched "YSR JALA KALA" programme on 28-09-2020 to drill free bore wells to needy and eligible farmers and also to provide pump sets and energization for the benefit of small and marginal farmers. The government has also planned to drill 2,00,000 bore wells in all the districts with a financial outlay of Rs. 2,340 Cr. in the next 4 years and to provide Motors / Pumpsets to the bore wells drilled under this programme



to all eligible small and marginal farmers with a financial outlay of Rs. 1,700 Cr. along with Energization. Through this programme nearly 3,00,000 farmers are going to get benefitted and around 5,00,000 acres of land will be brought under cultivation. So far 6,555 bore wells were drilled with an expenditure of Rs.59.17 Cr. and 8,637 beneficiaries were benefitted.

49,268 no. of Agricultural services were energized during the year 2021-2022. Aqua culture farmers are also being provided power supply at subsidized rate of Rs.1.50 per unit. GoAP has committed to complete all the connections of Agricultural pumpsets pending with DISCOMs. APDISCOMs and GoAP has entered into PSA dated: 01.12.2021 with M/s SECI for Purchase of 7000 MW of Solar Power for a period of 25 years to extend uninterrupted 9 hours day time power supply to the farming community.

The Dept. of Agriculture organizes Farmers Field Schools - Dr.YSR Polambadi - to enable the farmers to produce quality output duly following GAPs, including the organic practices for obtaining lucrative prices to the output in

the market. The impact analysis of Dr. YSR Polambadi (FFS) illustrated that, the cost of cultivation has substantially decreased from 10 to 22% in different crops like Rice, Maize, Cotton, Groundnut and Pulses due to significant decline in the intensity of usage of chemical inputs like fertilizers and pesticides. Integrated Crop Management (ICM) Technology adopted in FFS plots has contributed to significant increase in yields ranging from 10 to 24% when compared with farmers' practice in the above crops. In the similar lines, Thota Badi is organized in Horticulture Dept., Pasu Vignana Badi in Animal Husbandry Dept & Matsya Sagu Badi in Fisheries Department.

AP is the only State in the country which is implementing free crop insurance without even a single rupee

burden on the farmers. Each and every acre of land cultivated with notified crop and registered with e-Crop app is brought under the ambit of Dr.YSR Free Crop insurance scheme. NITI Aayog has recognized Dr.YSR Free Crop insurance implementation as role model for the other states to follow.

**Andhra Pradesh is recognized as the rice bowl of India. Apart from rice what are the other promising crops that Andhra can produce?**

Apart from Rice crop, Pulses are the second largest group of crops being grown in an extent of 32.80 Lakh acres with annual production of 10.30 Lakh MTs. Redgram (Tur), Black gram(Urad) Green gram (Mung) and Bengal gram (Chena) are the major pulse crops being grown in the state. Oilseed crops are the next major crops grown in the state covering in an extent of 22.33 Lakh acres with annual production of 7.94 Lakh MTs. Groundnut occupies major share among oilseeds. Cotton crop is also being grown in 14.82 Lakh acres with annual production of 18.50 Lakh bales of lint. Among coarse cereals, Maize and Jowar are the major crops being grown in an

Andhra Pradesh has become the No 1 state in the country in respect of number of Quality control laboratories.

extent of 10.47 lakh acres with annual production of 22.01 lakh MTs. Millet crops like Bajra, Finger millet, Foxtail millets, Small millet etc., are being grown in an extent of 2.20 lakh acres with annual production of 1.21 lakh MTs

Andhra Pradesh is the fruit bowl of India. Fruit crops are being grown in 18.25 lakh acres and we are producing 178.86 lakh MTs of various kinds of fruits annually. Mango is the major fruit crop being grown in the state followed by Sweet Orange, Acid Lime, Cashewnut, Coconut, Banana, Pomegranate etc.

### What is the level of irrigation in the state? How much emphasis is being laid on water conservative irrigation methods?

72.52 lakh acres is being covered under different sources of irrigation in the state which is 49.64 % of total net cultivable area of 146.10 lakh acres in the state. Canal irrigation is the chief source of irrigation contributing 46.17%, followed by Borewells and open wells covering 39.93%, Medium and Minor Irrigation Tanks with a share of 10.19%. Irrigation Intensity in the state is 1.34

The state is laying considerable emphasis on water conservative irrigation methods. State Government has established special purpose vehicle i.e., APMIP with staff structure till Mandal level for effective monitoring and utilization of Micro Irrigation scheme. An area of 13.43 lakh ha. has been covered under Micro irrigation in all the 13 Districts

### AP is the only State in the country which is implementing free crop insurance without even a single rupee burden on the farmers

since inception i.e. from 2003-04 to 2020-21, benefitting 11,90,743 farmers. There is a potential area of 11.34 lakh Ha., to be covered under Micro Irrigation in all the 13 Districts as on 31-03-2021.

### How has Rythu Bharosa Kendras helped in improving the access of quality inputs?

10778 RBKs established at Village secretariat level is a most novel, effective and efficient platform for knowledge dissemination and assimilation and to provide farmers with quality inputs and allied services of agriculture & allied sectors. The Agriculture, Horticulture, Sericulture, Agriculture Marketing, Animal Husbandry, Fisheries, Agriculture Co-Operation, Irrigation, Electricity, Disaster management, Civil Supplies, Panchayath Raj & Revenue Departments, AP State Seeds Development Corporation, AP MARKFED, AP State Agro Industries Development Corporation, AP Dairy Development Co-Operative Federation Ltd and Acharya NG Ranga Agricultural University, Dr. YSR Horticultural University, Sri Venkateswara Veterinary

University, all Banks etc. are stakeholders in Rythu Bharosa Kendralu. The digital kiosk through which the agri inputs are indented by the farmers undertakes payments/transactions through UPI mode with biometric authentication. The State Govt. has appointed 3 Nodal Agencies i.e AP AGROS (Andhra Pradesh Agro Industries Development Corporation Limited) for the supply of Pesticides, A.P. MARKFED (Andhra Pradesh State Co-operative Marketing Federation Ltd) for the supply of Fertilizers, Micronutrients, Animal Feed, Bulk Feed etc., and AP SEEDS (Andhra Pradesh State Seeds Development Corporation Ltd) for the supply of Seeds through RBKs. Retail Fertilizer Licenses were issued to all the RBKs to get Fertilizer stocks on FOL. RBK 2.0 Android Mobile App is integrated with iFMS Android Mobile 3.1 App. DBT through ePoS Machine with Aadhar Biometric Authentication has also been made possible.

As a result of RBKs, stabilization of Market Operated Prices of farm inputs has been observed. Pre-tested quality assured choice input supplies of reputed MOU entered firms and input supply at fair prices at farmer doorsteps have been made possible. Hoarding, price escalation and panic situation in Fertilizer supplies/distribution is unheard of in our state. Farmers are saving cost towards logistics/transport resulting in decreased overhead charges in cost of cultivation. About Rs.15.88 Cr. was saved by the farmers by purchasing 3.97 Lakh MTs of Fertilizers at RBKs during 2020-21 to 2021-22.

### What future do you foresee for agriculture in the state?

All needed services of the farmers need to be made available at village level. Realisation of proportionate income for his production and assured protection from climatic vagaries should also be high on cards. Organic farming would lead to healthy food and healthy environment. Feel Good Governance can spread happiness among the farming community.





# RYTHU BHAROSA KENDRALU A GAME CHANGER IN AGRI & ALLIED SECTORS



**Sh H Arun Kumar, IAS**  
Commissioner, Agriculture

**A**griculture is one of the Paramount sectors in Andhra Pradesh. 60% of the population is engaged in Agriculture and Allied sector activities. The total geographical area of the State is 162.97 lakh ha, of which, 60.48 lakh ha. is the net sown area. The gross irrigated area is 37.30 lakh ha. Agriculture and allied sectors contribute 10.78% State's Gross Value Added (GVA).

Despite Agriculture sector playing an imperative role in shoring up the economy of the entire state and the advances made in technology, farmers' life has remained intact and they had been leading a "Hand to Mouth"

existence. The hardships they were undergoing since ages to feed the nation were largely unnoticed.

Trekking long ways to Mandal Head Quarters for inputs, spending whopping amounts on unwarranted inputs, relying on fellow farmers advices, non dissemination of technology from research authorities to farmer level, deprived of remunerative prices for their crops, fleeced by middlemen, low yields, mounting of debts and resorting to extreme steps were the pictures of the pathetic situations of the farmer.

I consider it as a great honor that i had an opportunity to serve the farming community as a Civil Servant. As soon as I assumed charge as Commissioner of Agriculture couple of years ago, I took the onus of Government vision and embarked my journey towards decentralization of Agriculture system with an intention to augment farmer incomes, livelihood and see happiness on their face under the dynamic leadership of Hon'ble CM.

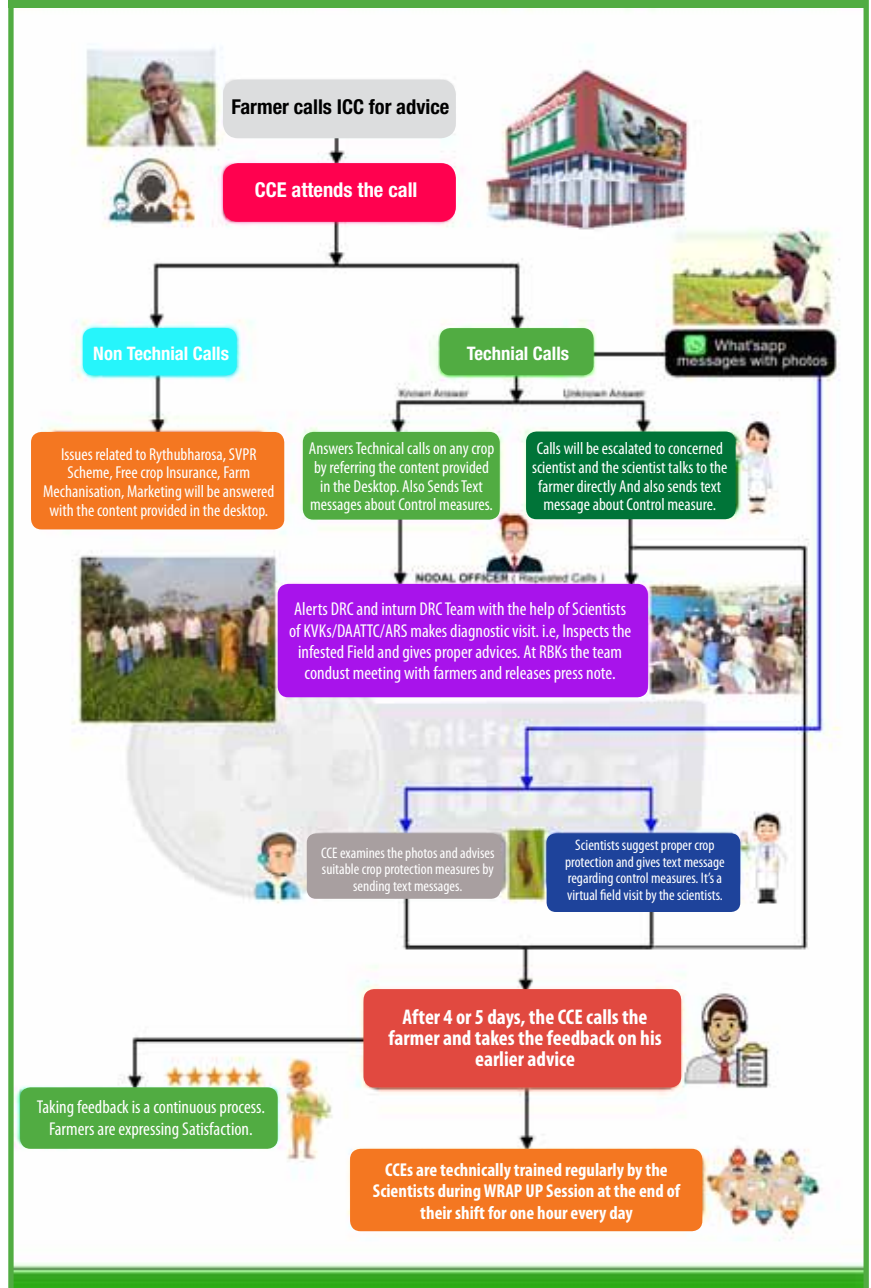
To bail out from the difficulties confronted by farmers, thousands of qualified staff were recruited and 10778 Dr.YSR Rythu Bharosa kendralu was established in the year 2020. RBKs, in coterminous with the village secretariat, provided amenities such as Kiosks and Smart TVs at village level across the state of Andhra Pradesh. Rendering relentless services from "Seed to Sale" of Agri & Allied sectors in transparent manner, it is the first of its kind in the entire nation and I consider it as one of the stupendous achievements in my career.

Since its establishment, these RBKs chiefly function through four verticals shouldered by qualified staff Village Agriculture Assistants/ Village Horticulture Assistants/Village Sericulture Assistants & Village Animal Husbandry Assistants/Village Fisheries Assistants to ensure any kind of services/ schemes reaches the farmer's door steps without any hindrance.

In addition, Social audit is stepped up at village level duly displaying beneficiaries list of various schemes/ programmes to ensure that none of



## WORK FLOW OF INTEGRATED CALL CENTER, GANNAVARAM





the eligible farmer is missed out from enjoying the benefits of the Government scheme, and for immediate redressal of grievances based on the availability of legitimate information.

Integrated Call Center facilitates instant remedies, immediate redressal of farmer field problems through their toll free number and also trigger alerts to forecast the freak outbreak of pest/disease, District Resource Center to conduct field diagnostic visits, provide remedies based on WhatsApp images and cater to the training needs of officials & farmers. RBK Channel telecasts need based and latest technical Content through Smart TVs at RBKs and also has the provision of live interaction with officials of Agri & Allied departments, Scientists & progressive farmers on innovative methods & recommended practices to enhance net farm income of a farmer. Rythu Bharosa Ratham endowed with video calling facility provides the “services of RBKs on wheels” & screens of short videos on pest and disease management practices of various crops, latest technologies at major centers of a village.



To safeguard the interest of farmers, Agri Advisory Boards are constituted with Department & University officials along with progressive farmers at State, District, Mandal & RBK level for better crop planning & making their own decision.

To reinvigorate economy of rural

farmers and motivate the younger generation to consider Agriculture as the career options, farmer are motivated to adopt modern technology through Community Hiring Centers, integrated to RBKs at Village level.

We are glad to say that small and marginal farmers, who constitute major



Rendering relentless services from “Seed to Sale” of Agri & Allied sectors in transparent manner, RBKs are the first of their kind in the entire nation.

farming force in rural areas, make a beeline to the RBKs for any kind of service at village level without venturing to Mandal Head quarters. Availability of various services viz., Quality inputs at farmers’ door steps, 160 Integrated Agri Labs for quality check, Price stability in open market etc have enhanced their confidence levels and brought happiness to their lives.

We are very much delighted that RBKs not only bagged nationwide awards & laurels for acting as one stop center for all Government schemes but

also earned ISO Certification for excelling in engaging in multifarious services to farmers at their door steps at village level and stands as torch bearer to other states in the country.

There is no iota of doubt that “If farmer is happy, the entire state would be hale and hearty”. Government has many plans afoot viz., Weather forecasting, FAQ norms, Scrolling of MSP, to be facilitated at village level through Kiosks. With the unflinching commitment, the plans will materialize and further increase the satisfaction levels of our farmers.

# ENSURING SEED SECURITY IN ANDHRA PRADESH

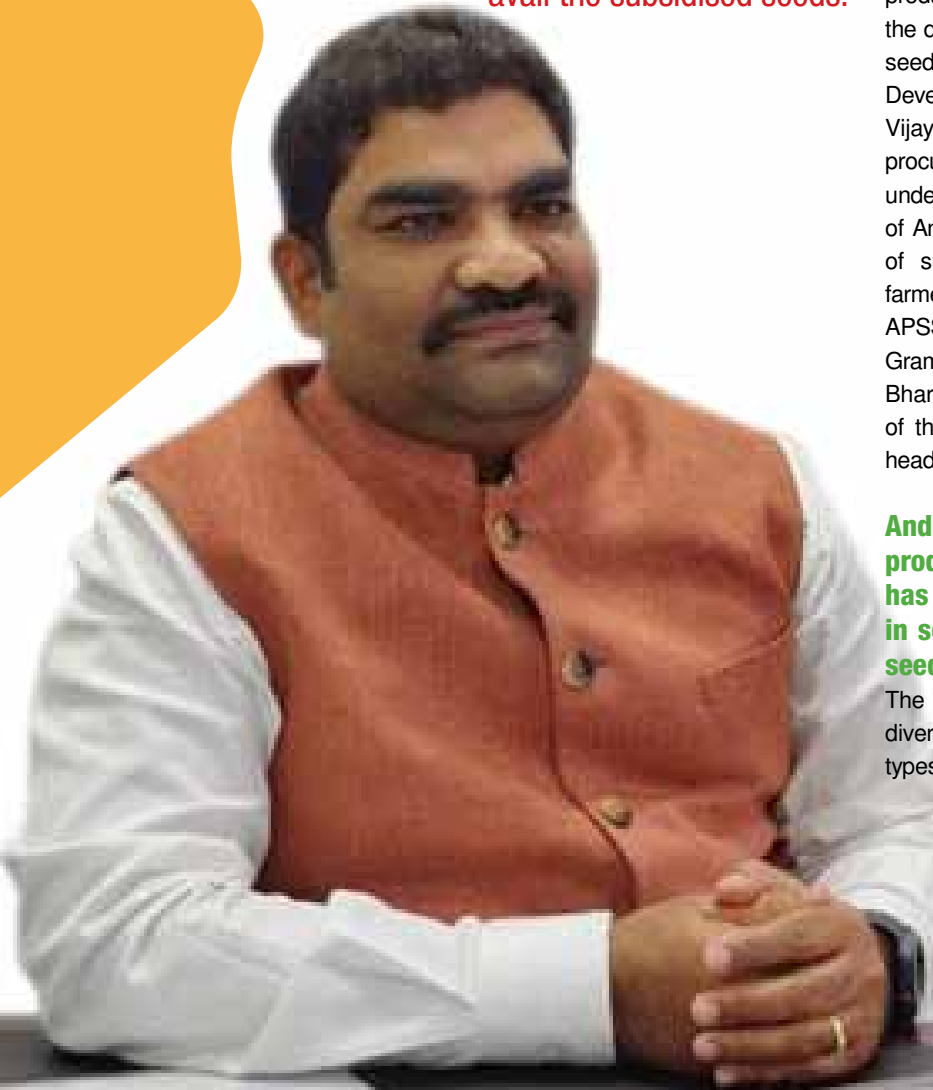
APSSDCL has started making seeds available at Grama Panchayat level through Dr. YSR Rythu Bharosa Kendralu, putting an end to the hardship of the farmers of going to Mandal/Block/District headquarters to avail the subsidised seeds.

Andhra Pradesh is an agrarian state where farmers need a genetically diverse portfolio of improved crop seed varieties/hybrids suited to a range of agro-ecosystems and farming practices to sustain the productivity of the crops and survive the climatic change. Seed is a basic input to start agriculture. Quality Seeds alone contribute to about 15 - 20% to the total production. Making quality seeds available at the door step of the farmers is one way to ensure seed security to the farmers. The AP State Seeds Development Corporation Ltd. (APSSDCL), Vijayawada, the nodal agency for production, procurement, processing, and distribution of seeds under different subsidy schemes of Government of Andhra Pradesh, has taken the novel initiative of supplying seeds at the door step of the farmers. From the Kharif 2020 season onwards, APSSDCL has started making seeds available at Grama Panchayat level through Dr. YSR Rythu Bharosa Kendralu, putting an end to the hardship of the farmers of going to Mandal/Block/District headquarters to avail the subsidised seeds.

**Andhra Pradesh is one of the leading seed producing States in the country. How has APSSDCL guaranteed AP's position in seed production? What is the present seed production in the state?**

The State of Andhra Pradesh is bestowed with diversified agro climatic factors and varied soil types favouring seed production in various crops.

**Dr. Sekhar Babu Geddam, I.F.S**  
Vice Chairman & Managing Director,  
Andhra Pradesh State Seeds  
Development Corporation Ltd





The government owned APSSDCL is the major seed producer in crops viz., Paddy, Groundnut, Pulses and Millets. Majority of the private seed companies and government agencies like National Seeds Corporation (NSC) and other State Seeds Corporations undertake seed production in the state of Andhra Pradesh and market across the country. Andhra Pradesh is most favourable for hybrid seed production in crops like Maize, Cotton, Sunflower, Bajra, Sorghum and Vegetables. Currently APSSDCL annually organizes seed production of about 10 lakh Quintals of Seeds and the Private Seed Companies and other Govt. agencies organizes another 10 lakh Qtls of Seed production in various crops for production of both varietal and Hybrid seeds.

### Which are the crops for which APSSDCL undertakes seed production and stocking?

APSSDCL takes up seed production in crops viz., Paddy, Groundnut, Redgram, Blackgram, Greengram, Bengalgram, Sesame, Finger Millet, Foxtail Millet, Kodo Millet, Proso Millet, Little Millet, Sunnhemp, Pillipesara, Cowpea, Horsegram, Rajma, Chillies, Bhindi, Tomato etc. The APSSDCL also maintains buffer stocks of Seeds



**The Seeds produced by the APSSDCL under brand name AP SEEDS is highly popular among farming community not only in the state but also outside the state**

produced in various crops after due processing and packing for supply to the farmers during the sowing season. The APSSDCL maintains seed stocks of about 10 lakh Quintals annually.

### What is the Seed Replacement Rate (SRR) of AP? How receptive are the farmers in accepting new varieties?

The prescribed norms of Seed Replacement Rate are 33% for self-pollinated crops, 50% for cross-pollinated crops, and 100% for hybrids. In the state of Andhra Pradesh the current SRR for Self pollinated Crops is 85%, for cross pollinated crops it is 90 % and for Hybrids it is 100%. The state of Andhra Pradesh is at best in SRR performance in the country. The farmers of the state are always receptive in accepting the new varieties. The newly released varieties/ hybrids having improved yield, quality and resistance/tolerance to abiotic and biotic stress are well accepted by the farmers of the state. The Improved varieties that are released by the State Agriculture Universities and ICAR Institutes are popular among the farmers apart from the Hybrids released by the Private Seed Industry.

### How does APSSDCL ensure seed supply during contingency situations like drought, flood etc.?

The APSSDCL has got very scientific system of seed production, processing, packing and storage. The APSSDCL maintains seed reserves with scientific warehouse management to meet the seed requirement under contingencies viz., floods, cyclone, drought etc. With the support of the state government, APSSDCL supply seed during contingency situations with enhanced subsidies to help the farmers in distress. Currently 80 % subsidy on seed cost is extended to farmers during the





contingency situations.

**Quality control in seed production is an important aspect. How does APSSDCL manage quality of the seeds produced?**

Yes. The APSSDCL gives top most priority to maintain the Quality Standards for every packet of seed that is produced, processed and packed. APSSDCL has got a very robust system of Seed Quality analysis. The Seed Quality is assessed at all stages from Seed Production till Sale point. During the Seed Production at field level, the officers of APSSDCL, Department of Agriculture, Scientists and officers of AP State Seed Certification Authority conducts inspections of the Seed Production plots from time to time to ensure that they meet the prescribed field standards as per Indian Minimum Seed Certification Standards. The samples drawn from each seed lot brought to the Seed Processing plants are tested at the regional seed testing laboratories of the APSSDCL and APSSCA. The lots conforming to the Seed Quality parameters prescribed for each crop as per Indian Minimum Seed Certification Standards are only finally packed for distribution/sale. The Department of Agriculture also conducts seed analysis by drawing samples and conducting seed

**The state of Andhra Pradesh is at best in SRR performance in the country.**

analysis at Dr. YSR Integrated Agri. Labs and Notified Seed Testing Laboratories of the Department. Seed testing facilities are also created at Gram Panchayat Level by the APSSDCL for farmers and village level functionaries for checking the seed quality before sowing. Even the Farm Saved Seed can be tested using this village level seed testing facility. The multiple levels of Seed Quality analysis ensures that the farmers use only quality tested seeds and the farm yield and productivity levels are enhanced. The APSSDCL engages qualified trained man power in the Seed Analysis Wing.

**AP seeds are in great demand inside and outside the state. According to you what must be the reason for the popularity of the seeds?**

The Seeds produced by the APSSDCL under brand name AP SEEDS is highly popular among farming community not only in the state but also outside the state. The only reason for the popularity is Seed Quality. The APSSDCL has been into scientific seed production since its inception in 1976. The Management gives highest priority to the Seed Quality. At all stages i.e., from Seed Production to Marketing, Seed Quality is ensured. The seeds supplied by APSSDCL are known among the farming community for assured and higher yields. Currently the seeds produced by the APSSDCL are in great demand not only within Andhra Pradesh but also in states such as Tamil Nadu, Kerala, Karnataka, Telangana, Odisha and Puducherry.

**How do you set the production targets every year? How much are you expecting to produce for the next year?**

APSSDCL very systematically assess the market demand of seeds in advance. We have various marketing channels for seed supply such as Dr. YSR RBKs in the state, dealership network within and outside the state and interstate marketing channels. The demand under each channel of marketing is assessed critically & scientifically and the seed production targets are fixed for the district level functionaries every year in the form of Seed Production Plan. For the year 2022-23, the Seed production target is 11 lakh Quintals.

# “A RIGHT ADVICE AT RIGHT TIME WILL SAVE THE CROP”

It has been an eventful thirty one years of being an agricultural professional. When I was an Agriculture Officer in 1991, I witnessed heart wrenching travails of farmers. Trekking 15 to 20 kms bare foot from their villages to Mandal Head Quarters to fetch Agriculture inputs, spending whopping amounts on ferrying inputs to fields, difficulties in carting farm produce to procurement point etc., were a common sight. During those days, Agriculture officers could visit farmer fields & cater to their needs only once in a fortnight owing to dearth of staff and their tour schedule. By the time Agriculture officer rushed to the spot, the infestation would have exacerbated & inflicted massive yield loss to farmers. Consequently debts of farmers mounted and forced them to resort to extreme steps.

Our Hon'ble Chief Minister had a vision to rescue the farmers from the hitches confronted in the past & transform their lives, duly digitalizing agriculture and ensuring the availability of pretested, certified quality inputs at farmer's door steps and dissemination of latest technology



**Sridhar Valluri, Joint Director, RBK**  
Department of Agriculture, Govt of Andhra Pradesh

from research level to village level. The vision of CM became reality with concerted efforts of the thousands of qualified field staff, who are the real knights who strived hard braving all odds without any protective armour, in the wake of lockdown, to contain the pandemic and established 10778 Dr.YSR. Rythu Bharosa Kendras (RBKs) in the year 2020 with amenities viz., Kiosks & Smart TVs etc. Since then, these RBKs have rendered plethora of services right from “seed to sale” to farmers at village level across the state & prevailed over many hurdles. These RBKs not only scripted history in the entire Nation but also earned nationwide awards & laurels for excelling in providing multifarious services to the farmers.

Besides RBKs, Integrated Call Center at the state level is just a ring away and addresses farmer field problems & provide instant remedies over telephone. RBK Channel at state level, on the other hand, telecast need based and latest technical Content through Smart TVs at RBKs & live interaction with Officers and Scientists. District Resource Centers at District level impart trainings, aid in capacity building of farmers and organize diagnostic field visits with scientists 160 Integrated Agri Labs at constituency level check the quality of inputs. Alerts on out breaks of pest/disease from Integrated Call Center had many times thwarted a catastrophe. Devastation of Fall Army Worm in Maize in Pathakunkuma of Srikakulam District was completely quelled within no time based on an alert from ICC and thus its spread across the state was averted which is an outstanding achievement. “A right advice at right time will save the crop”

I strongly believe that agriculture extension has been digitalized tremendously and this has in fact helped to reach out to the farmers in every nook and corner of the state with innovative concept of RBKs. There isn't an iota of doubt that the farmers are enjoying the fruits of the RBK services. It is a great honor & I offer my sincere gratitude to the Special Chief Secretary & Chief Commissioner (RBKs) and the Commissioner of Agriculture for facilitating an opportunity to work in tandem under their dynamic guidance and serve the farming community.”

# HORTICULTURE

## ANDHRA PRADESH'S GROWTH ENGINE

The State Ranks 1st in the productivity of Oil palm, Papaya, Lime, Cocoa, Tomato, Coconut and Chillies, 2nd in Mango, Sweet Orange & Turmeric in India.

**T**he State Government of Andhra Pradesh has identified Horticulture Sector as one of the growth engines with a focus to increase the production, productivity and quality of various Horticulture Crops coupled with value chain development and marketing linkages for better price realization which will help



**Dr. S. S. Sreedhar, I.F.S.**  
Commissioner, Horticulture & Sericulture



Kisan Rail from Ananthapur District



INAUGURATION OF RBK BY HON'BLE CHIEF MINISTER

The Department of Horticulture is implementing the following schemes to improve production, productivity and quality improvement of Horticulture crops for the welfare of horticulture farmers.

- 1) Mission for Integrated Development of Horticulture (MIDH)
- 2) National Mission on Edible Oils (NMEO-OP) Oilpalm
- 3) Pradhan Mantri Krishi Sinchayee Yojana (PMKSY-APMIP)
- 4) Rashtriya Krishi Vikas Yojana (RKVY)
- 5) Promotion of Horticulture Activities (State Development Plan)

in increasing net returns of the farmers.

Government is committed to revamp delivery of services at doorsteps in the State with an aim to improve living standards of the people through the concept of Village Secretariats and NAVARATNALU as core theme of Governance to achieve the objective. For better extension network and timely delivery of services Village Horticulture Assistants (VHAs) were recruited at Village Secretariats. State Government has established Rythu Bharosa Kendras at Village Secretariats as one stop shop for agri and allied services in Hub and Spoke model.

**Area and Production of Horticulture Crops (Final Estimates of 2020-21)**

Sl. No	Crop	Area in Lakh Ha.	Production in Lakh MTs
1	Fruits	7.39	178.86
2	Vegetables	2.35	72.92
3	Flowers	0.17	2.80
4	Plantation Crops	5.44	43.52
5	Spices	2.55	16.54
6	Medicinal & Aromatic Plants	0.04	0.14
	Total	17.94	314.78

**Major Horticulture Crops Area & Production**

No	Crops	Area in Hectares	Production in MTs
1	2	3	4
1	Mango	376494	4517928
2	Oil Palm	193395	3949712
3	Chillies (Dried)	190221	1160348
4	Cashewnut	136720	340161
5	Coconut (No. of lakh Nuts)	118979	16382
6	Sweet Orange	110970	2663280
7	Banana	97245	5834700
8	Coffee	64294	29575
9	Tomato	58404	2450670
10	Limes/Lemons	43044	688704
11	Onion	42007	777334
12	Cocoa	28672	28672
13	Turmeric	24370	292440

**The Department of Horticulture, GoAP was awarded as “Best Horticulture State in India” in the Agri Food Empowering India Awards 2020-21 for the innovative activities.**



Andhra Kashmir Tribal Farmers and Marketing Producer Company Ltd., (FPO) Visakhapatnam District, A.P



Sri. Vigneswara Farmer Producer Company (FPO) Krishna District, A.P



Sri. M. Balarami Reddy, (Farmer) Y.S.R. Kadapa District, A.P

Country's first ever Banana Fruit Train from Tadipatri, AP to JNPT, Mumbai for Banana Export was started in partnership with CONCOR



Establishment of Ripening Chamber and Functional Infrastructure under Post Harvest Management by M/s. Annamaiah Raithu MAC Society Ltd., Konduruvaripalem, (V), Piler (M), Chittoor (D), A.P.

### Horticulture - At A Glance

Total area under Horticulture crops is 17.95 Lakh Hectares with a production of 314.78 Lakh MTs (Final Estimates of 2020-21). Most of the horticulture crops are estimated to register an increase in production during 2021-22 also.

Horticulture Sector has recorded 10.17% Growth over previous year and contributed Rs. 49,189 Crores during 2020-21 (AE) to GVA of Andhra Pradesh. Andhra Pradesh stands top in the country with a strong foundation in Horticulture. The State Ranks 1st in

the productivity of Oil palm, Papaya, Lime, Cocoa, Tomato, Coconut and Chillies, 2nd in Mango, Sweet Orange & Turmeric in India. Andhra Pradesh Registration of Horticulture Nurseries (Regulation) Act, 2010, covers only fruit nurseries. Government of Andhra Pradesh amended the Act and the said Act came into force from 18th January, 2022 to include Shade net / Poly House nurseries, raising Chilli, Tomato, vegetable seedlings etc., and Tissue Culture nurseries for ensuring production and supply of quality plant material to the farmers in the State.

### Milestones

The Department of Horticulture, GoAP was awarded as "Best Horticulture State in India" in the Agri Food Empowering India Awards 2020-21 for the innovative activities.

Six Horticulture Farmers and Two Horticulture FPOs received YSR Life Time Achievements Awards during 2021.

The Compound Annual Growth Rate (CAGR) of Horticulture Production for the year 2020-21 is 12.3% as compared to 2019-20 which was 4.7% and this shows increasing trend of Horticulture Production in the State of Andhra Pradesh.

Andhra Pradesh State has emerged as the largest producer of fruits in the country contributing to 15.6% of the total production at the national level. As per EXIM Bank Report, AP contributes 7.8% of vegetables and Vegetable products in the country.

New crops like Dragon fruit, Taiwan Guava, Mauritius variety of Pineapple, Strawberry, Cinnamon, Nutmeg, Japanese Mint, improved variety of Black Pepper, Turmeric & Ginger, etc., have been introduced for generating higher income to the farmers.

Andhra Pradesh is the largest producer of Cocoa. Every year New Plantations are being taken up in an area of 5000 Ha and Processing Industries for Value-addition are promoted creating employment opportunities.

### Area coverage under Micro Irrigation (MI) System

Sl. No	District	Total Potential Area (Ha)	Area covered under MI Since Inception (Ha)
1	2	3	4
1	Ananthapuramu	459463	329048
2	Chittoor	308526	195819
3	YSR Kadapa	278836	210745
4	Kurnool	180672	123532
5	Prakasam	253190	97130
6	SPSR Nellore	95323	61481
7	Guntur	105592	44508
8	Krishna	109760	51178
9	West Godavari	126378	103919
10	East Godavari	79199	40950
11	Visakhapatnam	59631	29400
12	Vizianagaram	62194	29002
13	Srikakulam	47726	25763
	Total	2166489	1342474

The Government of Andhra Pradesh has entered into MOU with 47 major vegetable seed companies for timely supply of quality seed material on subsidy basis to the farmers through Rythu Bharosa Kendralu.

Under Rashtriya Krishi Vikas Yojana (RKVY), the Department of Horticulture has supported 263 FPOs with a financial achievement of Rs. 18.65 Crore towards Promotional cost, Integrated Pack houses, Collection Centres, Transport vehicles, other infrastructure facilities and marketing etc.

Under Pradhan Mantri Krishi Sinchaayee Yojana (PMKSY-PDMC), 12959 after sales service campaigns were organized covering 1,00,600 farmers for maintenance of Micro-Irrigation systems and its optimal utilization under “Y.S.R Thotabadi Programme”.

AP covered 10% of total area covered under Micro Irrigation and 15% of total area under Drip in the Country. Among top 10 Districts under area coverage in the Country, 2 Districts (Ananthapuramu & YSR Kadapa) are from AP.

During 2021-22, an additional area of 62,271 Ha was brought under Horticulture Crops. Organic farming has been promoted in 11,250 hectares of Mango, Cashew, Turmeric, Chilli and Vegetables through ICCOA & SIMFED. Under Mission for Integrated Development of Horticulture (MIDH), Centre of Excellence for vegetables and flowers with state of the art facility has been created at Kuppam in Chittoor district. About 12.00 lakh grafted vegetable seedlings were produced and distributed to the farmers.

The Horticulture Department is promoting Exotic crops such as Dragon fruit, Avacado, Fig, Passion fruit, Strawberry and Niche crops such as Aonla, Koronda, Jamun, Jack fruit, Tamarind in non-traditional areas in the State.

### Protected Cultivation

As the climate is quite suitable for



Demonstration of new high value Crop/Variety for adoption by the Farmers



Centre of Excellence, Kuppam

Sl. No.	Name of the District	Poly House (Area in Acres)	Shadenet House (Area in Acres)
1	Srikakulam	5.78	0.88
2	Vizianagaram	10.72	13.21
3	Visakhapatnam	3.01	7.85
4	East Godavari	50.91	6.89
5	West Godavari	17.05	11.85
6	Krishna	17.88	49.53
7	Guntur	5.71	275.91
8	Prakasam	1.73	216.71
9	Nellore	5.05	12.69
10	Chittoor	78.70	26.83
11	Kadapa	5.77	27.67
12	Ananthapur	97.45	35.12
13	Kurnool	24.04	49.08
	Total	323.80	734.22

### Strategies for Development of Horticulture Sector:

- ❖ For sustainable growth in Horticulture sector, production, productivity and quality improvement through area expansion, rejuvenation of old orchards, organic farming, supply of improved and hybrid varieties encouraging tissue culture plants, inter cropping etc., are supported by the department.
- ❖ Encouraging efficient and effective utilization of water and fertilizers through Micro Irrigation.
- ❖ Encouraging farmers to form Farmers Producers Organizations (FPOs) for establishing forward and backward linkages for better price realization and to increase net returns.
- ❖ Cluster based approach, multiple cropping and inter cropping is promoted for increasing the returns from the same piece of land as part of productivity enhancement.
- ❖ Fruit care activities and integrated pest, disease and nutrient management are promoted to enhance the quality of horticulture produce.
- ❖ Corporates like Future Group, ITC, ICCOA, DESAI Fruits, Ninja Cart are involved in quality and productivity enhancement in identified clusters for value addition and better net returns.



Capasicum in Poly House, Chittoor District

vegetables and flowers in off season / year round. Major crops grown under Protected Cultivation are Capsicum, English Cucumber, Chrysanthemum, Gerbera, Carnation, Orchids, Roses and Hybrid Tomato.

### Creation of Water Resources

Under MIDH, construction of individual farm ponds and community farm ponds is encouraged among the farmers for storage of water and thereby supplying to fruit orchards, vegetables and flowers during critical periods such as drought, depletion of ground water resource, low rainfall etc. Since inception, 2079 individual farm ponds with 25 lakh cubic meters and 231 community farm ponds with 70 lakh cubic meters capacity were

promotion of Protected Cultivation in Chittoor, Ananthapur, Guntur, East & West Godavari districts, cultivation of High Value Vegetables, Flowers and Plant Material production in Green houses, Shade net houses is promoted which will fetch high income to the farmers and will also help in export of quality produce to the distance markets in india and other countries.

Under MIDH & RKVY schemes, Protected Cultivation (Poly Houses and Shadenet Houses) is being encouraged to meet the requirement of quality fruits,



Creation of water resources through Farm Ponds





Banana treatment in Integrated Pack house

S.No	District	Lead Crop / Product
1	Srikakulam	Coconut
2	Vizianagaram	Mango
3	Visakhapatnam	Millets, Coffee, Sugarcane
4	East Godavari	Aqua, Poultry, Paddy Straw, Coconut
5	West Godavari	Maize, Fish
6	Krishna	Pickles, Mango, Milk, Poultry
7	Guntur	Aqua, Chillies, Turmeric, Maize
8	Prakasam	Spices, Milk
9	SPSR Nellore	Aqua
10	Chittoor	Tomato, Mango
11	YSR Kadapa	Banana, Millets
12	Ananthapur	Sweet Orange, Groundnut
13	Kurnool	Onion

established.

Value chain development of Chilli, under Integrated Agri-Extension Platform (IAEP) in partnership with ITC Ltd. is being implemented in 26,700 Acres against last year achievement of 11,400 Acres in Prakasam, Krishna, Kurnool & Guntur districts.

### Banana Value-Chain Development

The department has implemented

Banana Value-Chain Development in Ananthapur & Kadapa district on PPP Mode. Due to promotion of Tissue Culture Labs, Micro-irrigation and Fertigation Tissue Culture Area increased from 20% of the total Area during 2014-15 - 55% in 2020-21. During the year 2021-22, Government of India approved Cluster Development Programme (CDP) for Banana in Ananthapur, Kadapa and Kurnool

districts. The Programme will focus on Pre-production, Production, Post-Harvest Management, Value- addition, Logistics, Marketing and Branding for the benefit of Banana Farmers.

As one of the parameters in NAVARATNALU, the department has focused to reduce post-harvest losses and in improving the quality of produce by providing 40% financial assistance for establishment of Cold Storages and Minimal Processing Units.

Andhra Pradesh has emerged as the biggest exporter of Banana and was awarded by ICAR- NRC, Banana, Tiruchirapalli, Tamil Nadu for export promotion. 94,571 MT of Banana have been exported from Andhra Pradesh during 2020-21.

Country's first ever Banana Fruit Train from Tadipatri, AP to JNPT, Mumbai for Banana Export was started in partnership with CONCOR.

Through Andhra Pradesh Food Processing Society (APFPS), Government has identified some focus crops that play major role in Food Processing Sector of Andhra Pradesh. Government has designed to promote district as cluster so that value chain development and secondary food processing can be taken up. The district-wise Lead Crops / Products are furnished below:

Rs. 210.28 Crore has been released to the 2,33,270 horticulture farmers towards input subsidy of horticulture crops damaged due to various Natural Calamities through Direct Benefit Transfer (DBT).

Under YSR free crop insurance scheme for Kharif 2019 & 2020, an amount of Rs. 96.09 Crore to 70216 Horticulture farmers and Rs. 155.26 Crore to 64743 Horticulture farmers have been released respectively through Direct Benefit Transfer (DBT).

29195 crop specific "Thotabadi" programmes (Farm School Training) were organized in various horticulture crops covering 8,75,850 farmers for productivity and quality enhancement in Horticulture crops.

# HORTICULTURE EXCELLENCE THROUGH EDUCATION, RESEARCH & EXTENSION

# DR.YSR HORTICULTURAL UNIVERSITY

**T**he only university in Andhra Pradesh conducting research on Horticultural crops, Dr.YSR Horticultural University, has been developing human resources through Education, Research and Extension in Horticulture since its inception in 2007.

Offering B.Sc (Hons.) Horticulture, M.Sc (Horticulture) and Ph.D in Horticulture with specialization in Fruit Science, Vegetable Science, Floriculture & Landscape Architecture, Plantation, spices, Medicinal & Aromatic Crops, Post Harvest Technology, Plant Pathology and Entomology, besides two year Diploma in Horticulture, Dr.YSRHU is also involved in evolving varieties and technologies in Horticultural crops suitable to Andhra Pradesh through coordinated research services of nineteen Research Stations established throughout the state of Andhra Pradesh.

Dr.YSRHU has awarded horticultural degrees so far to 2654 students (2125 in B.Sc (Hons.) Horticulture, 467 in M.Sc (Horticulture) and 62 in Ph.D in Horticulture), besides 2281 in Diploma in Horticulture. University has organized Coconut & Citrus Graduate Readiness programmes for the benefit of students at



**Dr.T.Janakiram**  
Vice-Chancellor  
Dr.YSR Horticultural University  
Venkataramannagudem  
West Godavari district, A.P

National level.

For transfer of latest technologies in Horticulture, the university relies on the elaborate network of Krishi Vigyan Kendras (KVKs), Horticultural Research Stations (HRSs), Colleges of Horticulture and Horticultural Polytechnics for the

benefit of farmers, rural youth and women directly and Rythu Bharosa Kendrams (RBKs), District Resource Centres (DRCs) and Department of Horticulture, Government of Andhra Pradesh.

## **Towards Higher Productivity of Horticultural Crops**

University has released 27 varieties in various horticultural crops and 13 released varieties were notified at National Level Vide Gazette No.1369, dt:7 April, 2021 of Ministry of Agriculture and Farmers Welfare, Government of India namely Turmeric (Lavanya), Coriander (Suruchi), Chilli (LCA-620, LCA-625, LCH-111), Colocasia (Godavari Chema), Fenugreek (Lam Methi-2), Banana (Godavari Bontha), Cassava (PDP CMR-1) and Coconut (Vasista Ganga, Gauthami Ganga, Abhaya Ganga, Vynateya Ganga)

## **Technology Support for Horti-Farmers & Value Addition**

On the technology front too, the university has delivered some important interventions

- Developed Bio-control management practices for major pests and diseases in horticultural crops.

Dr.YSR Horticultural University (Dr.YSRHU), a state university, 2nd of its kind in the country was established by the Government of Andhra Pradesh on 26th June, 2007

This university is functioning with a mandate to develop human resources through Education, Research and Extension in Horticulture and allied sectors through forty two institutes i.e., constituent Colleges of Horticulture (4), constituent Horticultural Polytechnics (4), Horticultural Research Stations (19), Krishi Vigyan Kendras (4), affiliated Colleges of Horticulture (4) and affiliated Horticultural Polytechnics (7).

### “The students would be benefitted if there is early implementation on National Educational Policy (NEP) in the universities”

- Developed Organic farming protocols for Turmeric, Ginger, Colocasia, Dioscorea, Sweet Orange, Acid Lime, Elephant Foot Yam, etc.,
- Standardized Fertigation schedules in Acid lime, Sweet orange, Oil palm, Banana.
- Standardized protocols for production of Bio-fertilizers in solid and liquid forms.
- Standardized Tissue Culture protocols for Banana (local varieties), Tuber crops.
- Established Cocoa model nursery funded by DCCD at HRS, Vijayarai.
- Established Model Nursery at Horticultural Research Station, Chintapalli for Black pepper – funded by DASD, Kozhikode.
- Standardized IPM/IDM technologies in Sweet Orange, Banana, Mango, Vegetables, Spices Crops and Chilli.
- Identified Bio-control agents i.e., *Dichocrysa astur* a predator against Rugose Spiralling White fly and standardized protocols for mass multiplication for supply to farmers.
- Standardized protocols for value added products (Palmyrah Neera, Syrup, Jaggery, Jaggery powder, Sugar, Crystal, Chocolate, Fruit bar, Fruit flour, Tuber flour and Spongy endosperm flour) in Palmyrah with FSSAI certification with license authorized to manufacturing/ Repack/ Re-label from Govt. of Andhra Pradesh.
- Established Bio-technology labs at CRS, Tirupati, HRS, Kovvur and HRS, Lam
- DNA finger printing of varieties released by Dr.YSRHU in Acid Lime(Balaji, Pettur Selection -1), Coconut (Gouthami Ganga, Vasista Ganga, Vynateya Ganga, Abhaya Ganga), Turmeric (Lavanya), Colocasia (Godavari Chema), Banana (Godavari Bontha) and Tapioca (PDP CMR-1)
- Released varieties of different crops registered with NBPGR and got IC numbers.

### Academic Excellence during COVID Pandemic

University during COVID period delivered curricula through e-learning. Students were taught regular theory classes through online and in turn assignments practical records submitted by students. Practicals were conducted through virtual classes and models, etc., as per ICAR guidelines.

### Dr.YSRHU Success Stories

**Assured Income Generation Through Integrated Farming Systems (IFS) For Livelihood of Tribal Folks:** Through IFS, an assured net income of Rs. 90,000 to 1,20,000/ha was recorded as against Rs. 40,000 to Rs. 50,000/ha before its implementation. With the intervention of Dr. YSRHU – KVK, Venkataramannagudem, tribal women farmer, Smt. T. Ramana of Rekulakunta village received ICAR award, “Pandit Deen Dayal Upadhyay Anthyodaya Krishi Puraskar-2019” at zonal level for her excellent contribution towards IFS model adoption.

**Management of cashew orchards for sustainable livelihood of tribal farmers:** A total of 57.8 tonnes of cashew nuts were marketed by 223 tribal farmers with an average price of Rs.123.5 per kg. Twelve percent yield increase was recorded over the last year (51.6 T). The farmers realised an average increased income of Rs.31,250/- per acre.

**Improved vegetables cultivation in tribal areas of West Godavari District:** The technology is spreading in tribal areas of West Godavari District and now at present the area under improved vegetable cultivation is about 200 acres with a net income of Rs:40,000/- to Rs:1,20,000/- per acre

**Cultivation of Multiple Crops in Organic Farming:** Organic method of cultivation has reduced dependence on external inputs and created high market demand and motivated nearly 35-40 farmers to adopt organic farming.

**Apiculture -A successful skill based intervention:** Honey was extracted @ 20-25 Kg from each box from December to June. Honey extracted from these colonies was sold @ Rs. 300/- to 500/- per Kg. depending on the season and demand.

**Millet processing as an income generating activity:** The tribals are empowered to market various products in open and online markets. Business of an amount of Rs.2,00,000/- per month is realised by the groups through this activity, with a regular income of Rs.5,000 to 6,000/- per month for each member

**Livelihood Improvement of Rubber Growers in Tribal Area of East Godavari District, A.P:** On an average, each tribal rubber grower earned Rs.35,295/- (Rupees Thirty five thousand two hundred and ninty five only) over a period of 160 days with intervention of Dr.YSRHU-KVK, Pandirimamidi.

**Introduction of Colocasia variety KCS-3 for higher yields:** Net income for one hectare was Rs.6,90,000/- in demo plot where as in farmers practice it was Rs.4,25,000/- Percentage increase in the yield was 11.76%.Cost benefit ratio was 1:5.3.

**Integrated Farming System Module in Tribal Area of East Godavari district:** Horti based Integrated Farming System has doubled the income of tribal farmers and motivated to shift from mono cropping of paddy to IFS.

**Value addition** University intervened in strawberry cultivation by tribal farmers of Lambasingi agency area and trained them to prepare strawberry jam and dehydrated strawberry fruits, resulting in fetching income to tribal farmers.

As part for the RHWEP (Rural Horticultural Work Experience Programme), villages were allotted to respective B.Sc (Hons.) Horticulture students as per the guidelines of the ICAR and attached to the respective village secretariat. The students were monitored, both online and offline, by the college administration / research and extension staff of university as well as department of horticulture. For P.G. and Ph.D. students curricula were delivered through e-learning. For final year students the comprehensive oral examination was conducted through online / virtually by external examiner and students were allowed to work in college laboratories for research work and thesis writing. Submission of thesis also took online mode by external examiner during this period as per ICAR guidelines. Final year Ph.D students thesis final viva-voce exam was also conducted via online as per the ICAR guidelines.

### Outreach Programmes for the farmers

The university has developed good agricultural practices for many major horticultural crops of Andhra Pradesh which is transferred to farmers through Farmers Advisory Cell (FAC), Plant Protection Advisory Cell (PPAC), OFTs, FLDs, Trainings and Skill trainings besides mass communication strategies viz., Dr.YSRHU Udyana Mitra, Farmers

#### Challenges for Horticulture of Andhra Pradesh

- Production and supply of quality planting material
- Invasion of new insect pests and diseases
- Post harvest losses
- Lack of skilled personnel & mechanization
- Introduction of new crops & varieties by farmers
- Climate change



The students would be benefitted if there is early implementation on National Educational Policy (NEP) in the universities. New courses/curriculum on Organic Horticulture, Tribal Horticulture, Integrated Farming Systems, Marketing Strategies Market Intelligence, Farm Mechanization / Artificial Intelligence and Digital Extension should be introduced in the colleges.

### University has released 27 varieties in various horticultural crops and 13 released varieties were notified at National Level



Awareness Creation Centre (FACC), Electronic Wing, Community Radio Station (Dr.YSRHU Udyana Vani), Vice-Chancellor to Village Programme, Our University – Our Organic Village programme, Dr.YSRHU year of Coconut 2020-21, Dr.YSRHU year of Citrus 2021-22, Dr.YSRHU Phone-in programmes, TV Phone-in-Live programmes, Year round Training Calendar, Dr.YSRHU you tube channel, Dr.YSRHU – Dr.YSR RBKs : Dr.YSRHU Udyana Bandhu and Dr.YSRHU Udyana Sandarshana etc.,

### Remunerative Horticultural Crops and Technologies to A.P

University with available state of the art facilities and in collaboration with National institutes and Department of Horticulture, Government of Andhra Pradesh has introduced several new horticultural crops in the state such as Nutmeg, Dragon fruit, Moringa, Black Pepper, Strawberry, *Avacado*, *Annona muricata*. University also working on crop diversification, organic farming, farm mechanization, validation of farmers technologies and creation of awareness on exotic crops in co-ordination with Department of Horticulture, Government of Andhra Pradesh

# DR. YSR POLAMBADI, AMARTHALURU, YELAVARRU, GUNTUR

**A**marthaluru Mandal in Rabi invariably cultivates improved varieties of either blackgram or green gram. The crop rotation followed in this region is that of Paddy in Kharif followed by black gram in Rabi season. Pravallika, the Village agriculture assistant associated with the RBK conducts Polambadi (Farmer schools) for the farmers in this region. LBG 752 variety of black gram is cultivated here and she has been conducting different sessions for the farmers helping them identify gaps and introducing them to new techniques. A diploma holder in agriculture, she has been looking after the entire activities of RBK with assistance from Mandal Agriculture officer, Smt. Lokeshwari. She has meticulously kept the records of all the activities carried out in the Polambadi with photographs of each session and a neat description of the event.

Through polambadi, several technologies have been implemented in this village. Before commencing the polambadi, ballot box tests are conducted to assess the knowledge level of each farmer. "We want to reduce the cost of cultivation by using natural resources. Only need based application of chemical pesticides is resorted to. We mostly promote ecofriendly practices such as growing trap crops, catch crops, installing pheromone traps and yellow sticky traps to reduce the pest population. We also follow Integrated Crop Management and routinely conduct Agro Ecosystem Analysis. Agri ecosystem analysis is conducted early in the mornings, a group of 30 farmers



are split into groups of 5 or 6. These groups go to the field and analyse the crop. They study the pest and diseases, look for the presence of friendly insects for which they have undergone prior training. They are taught to calculate pest and defender ratio. If the ratio is small, pesticides are not applied. This is mainly done to develop expertise among the farmers in their own fields," explains Pravallika.

There is a Polambadi for 10 hectares of land and the school consists of 30 farmers. Two acres are maintained as collaborated farmer field where experiments are conducted for the benefit of the farmers. Every Friday, they meet at a fixed time for Polambadi activities which is carried out by the village agriculture assistant. "First we had conducted Gramasabhas for selecting the farmers. Then in the next meeting the ballot box test was

conducted. Then one by one, every week, a new activity is introduced." Pointing to the pheromone traps and yellow sticky traps Pravallika says that they are currently undergoing sessions on agro ecosystem analysis.

Ram Babu, the collaborator farmer, voluntarily has chosen to part with his two acres. His land had road frontage and was easily accessible for other farmers too. Many farmers have adopted the practices that are experimented in this field. For instance, the efficacy of phosphate solubilizing bacteria in increasing the field was once demonstrated in the collaborated farmer field and it caught the attention of another farmer. Since then he has been using this in his field and finding it very beneficial corroborates Dr Ganga Devi (Agronomist), KVK Scientist and Smt Vijay Bharati, Joint Director of Agriculture.

# SEEDING ANDHRA'S AGRICULTURE



**Dr. A. Trivikrama Reddy,**  
Director, Andhra Pradesh State Seed Certification Authority,  
Guntur

**S**eed is recognized as prime catalyst for increasing productivity. It is cheapest source, yet most critical single input. Use of good quality seeds can result in as much as 15-20 % yield increase. Seed certification is a legally sanctioned system and regulatory process to ensure and make available good quality seeds to the farming community. Andhra Pradesh State Seed Certification Agency was registered to carry out the function of Seed certification in six phases under Seeds act, 1966 in Andhra Pradesh w.e.f. 01.07.1977. The APSSCA is administered by the Governing board constituted by the Government with 15 members with special chief secretary to the Government (Agriculture) as Chairperson and Director, APSSCA as its Member – Secretary.

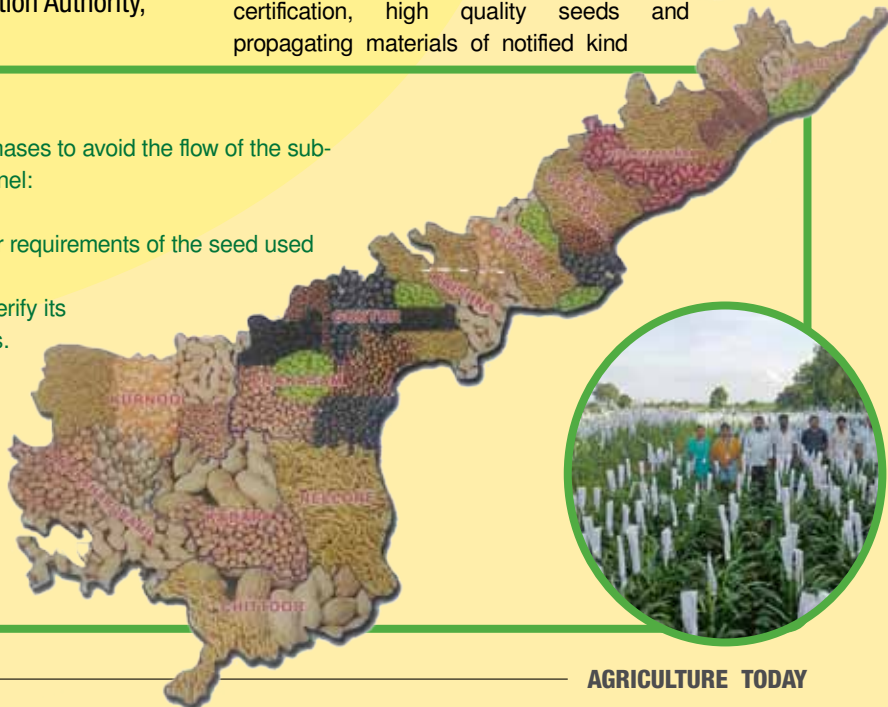
The APSSCA with its head office at Guntur has two Zonal offices located at Kurnool and Guntur, seven Divisional offices situated at Ananthapuramu, Kurnool, Nandyal, Kadapa, Ongole, Guntur and Tanuku ; two notified seed testing Laboratories at Kadapa and Guntur (ISTA member laboratory INML 4200) and one Grow -Out Test Farm at Reddipalli, Ananthapuramu.

The purpose of seed certification is to maintain and make available to the public, through certification, high quality seeds and propagating materials of notified kind

## PHASES OF SEED CERTIFICATION

Seed Certification is carried out in six broad phases to avoid the flow of the sub-standard seed lot in the seed distribution channel:

1. Receipt and scrutiny of application
2. Verification of seed source, class and other requirements of the seed used for raising the seed crop.
3. Inspection of the seed crop in the field to verify its conformity to the prescribed field standards.
4. Supervision at post-harvest stages including processing and packing.
5. Drawing of samples and arranging for analysis to verify conformity to the seed standards and
6. Grant of certificate, issue of certification tags, labeling, sealing





Dr.A.Trivikrama Reddy, Director, APSSCA addressing the training programme on Online and Organic Certification at RARS, Tirupati.

and varieties so grown and distributed as to ensure genetic identity and genetic purity. Seed Certification aids in production of Certified seed which is the starting point to a successful crop as well as an important risk management tool. Improved traits such as better yield, pest resistance, drought tolerance, herbicide tolerance, and much more are delivered to farmers in certified seed. Years of research and development has went into these traits and they can only be reliably accessed through certified seed.

### PROGRESS OF SEED CERTIFICATION

APSSCA is involved in Certification of wide range of crops and varieties. The major crops offered for Certification are Paddy, Groundnut, Bengalgram, Jute, Jowar, Bajra and Pulses. It has got paramount importance on account of large scale certified seed production in the Country, duly meeting the requirement of Andhra Pradesh and other States like Telangana, Maharashtra, Madhya Pradesh, Karnataka, Rajasthan, West Bengal and Haryana.

During the year of inception 1977-78, an area of 23,493 acres was offered for certification and 95,000 q. of seed was certified. APSSCA certified 7,77,532 q. of seed from an area of 2,07,674 acres during the year 2020-21. The APSSCA stands as one of the best Seed certification agencies in the Country helping State of Andhra Pradesh to emerge as "Seed bowl of the Country"

S.No.	Year	Area Registered (ac.)	Quantity of Seed Certified (q)
1	2018-19	2,84,198	18,13,409
2	2019-20	2,46,591	9,68,935
3	2020-21	2,07,674	7,77,532

and has been providing yeomen service to the farming community for the last 45 years.

### INTRODUCTION OF ONLINE SEED CERTIFICATION

APSSCA has digitalized all its seed certification procedures making it online (<https://apssca.org/>) from Kharif 2021 onwards, promoting the genuine registration of Seed production areas so as to promote the flow of quality seed into the market in a transparent way. It also helps the organization as well as farming community for easy and early traceability and for proper accountability.

### INTRODUCTION OF INTERNATIONAL SEED CERTIFICATION

International Seed Certification through OECD seed Schemes was introduced from Rabi 2020-21. This will not only boost International Seed Trade but also will consolidate the position of Andhra Pradesh as Seed hub. India has the potential to become leading player in seed business sector in the developing world but its present share is just 2 % in the global seed market. African, SAARC as well as South East Asian countries are potential export markets, where India can achieve the target of 10 % in the near future.

### STRENGTHENING DIVISIONAL OFFICES

All Seven divisions have been computerized with advanced



Convening of Pre- seasonal meeting to create awareness about seed certification to the Seed Producers



Director, APSSCA inspecting Seed Production plots of different crops



Visit of NABARD Team to Seed Testing Laboratory, Guntur.

specifications, internet facilities, web cameras, printers and other facilities to cope up with online certification works and e-Office from Kharif, 2021. APSSCA recruited 20 Seed Certification Officers (On Contract Basis) during January, 2021 to cope up with the ongoing seed certification activities. This recruitment helped the organization to conduct field inspections in time and also to attend processing and sampling activities effectively from Rabi, 2020-21.

### STRENGTHENING OF SEED TESTING LABORATORIES

APSSCA's two notified Seed Testing Laboratories (STLs) at Guntur and Kadapa, were renovated and strengthened by new scientific equipment and controlled guard storage rooms to the Seed Testing Laboratories for analyzing

#### The tests which are conducted at STLs of APSSCA are

1. Physical Purity test
2. Moisture test
3. ODV (Other Distinguishable Varieties)
4. Germination test and
5. Genetic Purity test

Certification seed samples and Service seed samples.

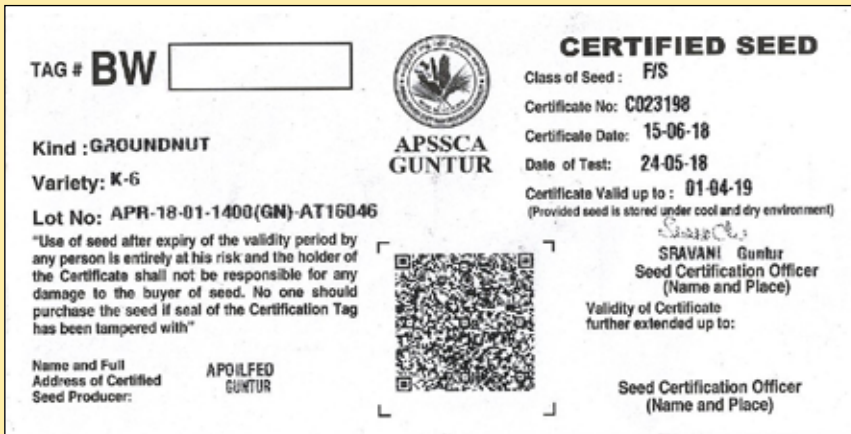
Grow-out test of the seed is done for assuring genetic purity of the Certified Seeds. Grow-out test are conducted for Blackgram foundation seed, Jowar and Bajra foundation lines and also Jowar hybrids at GOT Farm Reddipalli, Ananthapur district.

### INTRODUCTION OF QUICK RESPONSE (QR) CODE:

From the ensuing Kharif 2022 season, QR Code has been introduced for better Seed traceability and genuineness of seed production programme. The QR Code printed Seed Tags display Identity of Seed growers, Month-year code, Production location code, Processing plant code, Seed Produce code, Validity of the Seed lot and Seed quality parameters like Physical Purity & Germination % of the Certified seed Lot. The QR Code also safeguards the seed chain, prevents the duplication of seed tags and minimizes the movement of spurious seed in the market .

### INITIATIVES FOR PROMOTION OF SUSTAINABLE AGRI- FOOD SYSTEMS IN AP





Certified Seed Tag with QR code having certification details.

**FAO TECHNICAL CO-OPERATION PROGRAMME**

APSSCA is identified as Nodal agency to implement Technical Co-operation Programme (TCP) for strengthening the capacities of the Government of Andhra Pradesh and to support the Farmers for adopting sustainable Agri- food systems. It will help to produce certified safe and hygienic food with minimum pesticide residues by the famers and also to supply good quality food to the public. This inturn can decrease cost of cultivation and increase crop yields & net returns thereby benefiting farming community of AP State.



Meeting with Food and Agricultural Organisation (FAO) Team at New Delhi.

**GOOD AGRICULTURE PRACTICES (GAP) AND ORGANIC CERTIFICATION:**

APSSCA has been expanding its horizons to Good Agriculture practices (GAP) certification and Organic certification thereby promoting sustainable Agri-food systems in the state. The APSSCA has submitted proposal to State Government for initiating Good Agricultural Practices (GAP) Certification by establishing Crop Certification Division as separate wing in APSSCA, to help the farmers of the State by adopting norms and modalities of Quality Council of India (QCI) for GAP certification.



Delivering speech on "GAP Certification" during State level workshop on Dr. YSR Polambadi and Road Map for Good Agricultural Practices (GAP).

There are no Government Organic Certification Agencies in Andhra Pradesh, causing inconvenience to the individual / group of farmers, processors and traders for certification of their organic products. Further, there is vast scope to bring significant areas under Organic farming like Fruits, Vegetables, food grains and oilseeds in Andhra Pradesh for production of chemical free organic food products. Hence, the APSSCA has requested the Government of Andhra Pradesh to establish "Andhra Pradesh State Organic Certification Authority (APSOCA)" as separate wing, to facilitate the farming community in Andhra Pradesh State through certification of their organic produce at lesser price and getting benefit through remunerative price for Organic products by following NPOP standards.

# ANDHRA PRADESH A NATURAL LEADER IN FISHERIES



**Sri K Kannababu, IAS**  
Commissioner, Fisheries

the victim fisher families in the event of accidental death/ permanent disability while in fishing also comes under the scheme.

## **Institutional / Welfare Measures taken up for Aqua farmers**

Quality power 24x7 at concession rates of Rs. 2.36 ps per unit as a front ended subsidy and power at Rs. 1.50 ps per unit is being provided by the government. During 2020-21, 58,000 aqua farmers benefitted with subsidy of Rs. 844.00 Crores. 27 integrated aqua labs were set up at village level. In Rythu Bharosa Kendras (RBKs) 738 Village Fisheries Assistants were recruited for supply of certified and quality aquaculture feed to aqua farmers through Rythu Bharosa

**A** leader in total fish and prawn production in the country, Andhra Pradesh contributes a major share of 29.5% towards the country's production. Having a lion's share in seafood exports in the country, the state was able to export seafood worth Rs. 15,832 Cr, which translates to 36% share in terms of value and 24% in terms of quantity during 2020-21. The Sector provides livelihood opportunities for over 16.50 lakh stakeholders of fisheries sector.

Understanding the potential of the state in generating income, the state government has developed several initiatives for the welfare and economic development of fishers and fish farmers.

## **YSR Matsyakara Bharosa**

The YSR Matsyakara Bharosa provides an amount of Rs.4,000 to Rs.10,000/- per family to coastal fisher during marine fishing ban period. The relief was also extended to fishers of traditional boats as

lean period relief from 2019-20. During 2021-22, 97,619 coastal fishers were benefitted with Rs.97.619 Crores. The scheme also looked into meeting the fuel requirements of the boats. In accordance with this enhanced subsidy on diesel oil for fishing boats from Rs.6.03 to Rs.9.00 per litre were sanctioned benefitting 17,770 registered boats. During 2021-22, subsidy of Rs. 41.00 Crores provided to motorised and mechanised boats. Besides this the ex-gratia was enhanced Rs. 5.00 lakhs to 10.00 lakhs to assist



## Fish Production

S. No	Item	Fish and Prawn Production							2021-22 TARGET
		2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	
1	Key performance Indicators:	Production in M.Tonnes and GVA in Rs. Crores							
1	Marine Fish	406249	436723	471692	479626	475092	440425	459867	475000
2	Inland Fish	1276817	1424891	1617483	1994871	2407617	2552260	2901715	3043798
3	Marine Shrimp	69152	83551	108551	125324	125325	124510	133904	135000
4	B. W Shrimp (Coastal area)	105162	231375	317270	416475	528983	580082	592778	661075
5	F.W. Prawn	121198	175723	251197	433262	455341	478234	535035	770247
6	Total production (in MT)	1978578	2352263	2766193	3449558	3992358	4175511	4623299	5085120
7	Growth rate on Production	11.86	18.89	17.60	24.70	15.74	4.59	10.72	10
8	GVA Rs. Crores (Current prices )	22707	32085	42190	58721	67885	76309	81924	95316
9	GVA Rs. Crores (Const. prices)	17620	24479	30999	41452	48226	50660	55294	60817
10	Growth Rate in GVA (Const. Prices)	13.56	38.93	26.64	33.72	16.34	5.05	8.12	10.9

As on January, 2022, achieved 39.80 LMT during 2021-22 against the annual target of 50.85 LMT.

Kendras, training on innovative and advanced technologies, E-crop (e-fish) booking for aqua farmers to facilitate remunerative prices for their produce, access to insurance, credit support etc.

YSR Matsya Sagu Badi, a "Farmers Field School" is a notable initiative organized for providing extension services and crop advisories to aqua farmers and dissemination of knowledge and technical skills to marine/inland fishers. Integrated Call Centre with toll free number "155251" also has experts from fisheries segment answering to the queries raised in the fisheries segment. During COVID-19 pandemic lockdown restrictions, stringent measures were taken for effective functioning of all aquaculture activities and post harvest operation by issuing security passes to workforce, transport vehicles and ensuring remunerative price to farmers for their aqua product and monitoring regularly at District level.

For Promotion and sustainability of Aquaculture sector acts were enacted. AP State Aquaculture Development Authority (APSADA) was established

under the Chairmanship of Hon'ble Chief Minister, GoAP through APSADA Act 2000 for Regulation, monitoring and promoting aquaculture and aquaculture business operations in the State. AP Fish Feed (Quality Control) Act, 2020 and AP Fish Seed (Quality Control) (Amendment) Act, 2020 were enacted to ensure quality of inputs used in the aquaculture. AP Fisheries University, 2020 was established to generate required number of technical manpower and also to support R & D activities in fisheries and aquaculture sectors.

Brood Banks for supply of quality brooders and seed were established. Govt. Fish seed farm, Badampudi, West Godavari; Indian Major Carps Breeder Seed Rearing Centre, Govt. FSF, Kovvali, West Godavari and Satellite Breeding Centre for GIFT Strain Tilapia, Ananthapur have been envisaged. To promote diversification in brackish water aquaculture and to supply quality seed of highly commercial species of Seabass and Mud crab, hatcheries have been proposed. Aquatic Quarantine Facility

(AQF) Centre for L.vannamei shrimp has also been envisaged.

The government is also working on developing aqua-park in Guntur district. Aqua Park concept is the best option where hatcheries, nursery and grow-out of various species can be cultured and it will be the first model in the Country.

### Construction of Fishing Harbours

The Government has taken up construction of nine Fishing Harbours on par with International standards to provide safe berthing facilities for deep sea fishing vessels and mechanised boats and four Fish Landing Centres with all berthing and post harvest facilities with a total of Rs. 3,507.57 Crores. This marine infrastructure will help in providing better livelihood to coastal fishers, hygienic handling of fish harvested and enhancement of seafood exports from the State. In addition to these, Modernisation of Fishing Harbour at Visakhapatnam is proposed with estimated cost of Rs.150.00 Cr under PMMSY and Kakinada Fishing Harbour under RKVY with Rs. 5.00 Cr.

# MATSYASAGUBADIES

## STRENGTHENING THE FISHING COMMUNITY



**A**ndhra Pradesh has 5.17 lakh ha of fresh water ponds and tanks, 11,514 kms of Rivers and Canals, 4.58 lakh ha of Reservoirs and 1.50 lakh ha of potential area suitable for brackish water aquaculture. As on date, both fresh water and brackish water farming is practiced in about 2.00 lakh ha and the annual fish and shrimp production stands at 46.00 lakh tonnes from all the water sources. In comparison to South Asian countries like Vietnam and Thailand, AP holds more potential in its Inland waters and Aquaculture. In marine fisheries sector, mesh regulation is one of the major concerns.

This has led to technological interventions for improving the productivity

To achieve the optimum production levels in inland water bodies, Reservoirs, Aquaculture Farms, Good Aquaculture Practices (GAP) like supply of quality inputs, water quality management, disease management and surveillance, and in Marine fisheries “code of conduct for responsible fisheries” are of paramount importance

and production in all water bodies, Good Aquaculture Practices (GAP) and regulatory/conservancy measures in marine fishing practices. To achieve the optimum production levels in inland water bodies, Reservoirs, Aquaculture Farms, Good Aquaculture Practices (GAP) like supply of quality inputs, water quality management, disease management

and surveillance, and in Marine fisheries “code of conduct for responsible fisheries” are of paramount importance.

To achieve these objectives the following activities are proposed.

- Conduct of Fisheries & aquaculture farm schools (MatsyaSagubadi) in the areas of Inland water bodies, Aquaculture and



Marine sector on regular basis for dissemination of knowledge and skills to the stakeholders.

- Accreditation and certification of all aqua inputs under APSADA, 2020 to reduce inputs costs and for getting better yield.
- Capacity building to all field functionaries on emerging technologies to sustain aquaculture.

### Conduct of Dr.YSR MatyasaguBadies

In the Matyasagubadies, hands on training on various productivity enhancing technologies with primary focus on learning by doing will be provided. The Matyasagubadies include demonstrations, trainings, exposure of farmers on various emerging aquaculture practices and validating them under their own management.

### Principles of Matyasagubadies

- To get better yield
- To protect environment
- To promote Sustainable Aquaculture
- To conserve and sustain marine resources
- For capacity building of all stakeholders
- For optimum utilization of the natural water bodies.

### Strategies

Matyasagubadies will be conducted based on the needs at selected RBKs.

### OUTCOME OF MATSYASAGUBADIES

- Increase production and productivity
- Adapting good Aquaculture Practices
- Awareness creation on usage of antibiotics and pesticides and their hazards.
- Awareness creation on AMR issues
- Eco friendly culture practices
- Promotion of organic farming in fish culture
- Conservation of Marine resources
- Strengthening capacities of farmers and fishers.

The Matyasagubadi will be conducted by concerned VFAs under the supervision of Assistant Inspector of Fisheries / Fisheries Development Officer. During conduct of Matyasagubadies, activities will be selected as per the sector needs. While conducting Matyasagubadies, services of expert resource persons will be utilized as per the need. The duration of Matyasagubadi depends on the sector. Entire activity will be monitored through separate App and regularly reviewed based on the online progress.

### Monitoring Mechanism

For effective conduct of Matyasagubadies, all the Mandal Level, Divisional Level staff will be involved under the guidance of Joint Collector (RBK) at District Level. The IT cell of Commissionerate will monitor the performance of each functionary and guide them to achieves the objectives in the conduct of Matyasagubadies. The

progress will also be reviewed from time to time by the Head of the Department and suitable suggestions will be given for further improvement.

### Evaluation of Matyasagubadies

An external agency will be entrusted for evaluation of Matyasagubadies and grades will be awarded to each Matyasagubadies. The process also involves identifying gaps for rectification. The agency will also be conducting impact assessment of Matyasagubadies on the livelihoods of the stakeholders in addition to productivity and production.

### Capacity Building to staff members

A series of trainings will be organized to field functionaries from VFAs to ADFs on Good Aquaculture Practices, strengthening of existing societies and new and emerging trends in Aquaculture in addition to managerial skills.

# DEVELOPING DOMESTIC FISH MARKETS



**F**ishery production in Andhra Pradesh mostly caters to trade and exports to other states and countries. Only 10% of the fish produced in the state is utilized for domestic fish consumption. At 8 kgs per capita consumption and a bountiful fish harvest, the local market presented untapped opportunity. During the outbreak of COVID-19, the fisheries sector came under immense pressure resulting in distress harvest & over-supply and slump in prices of fish and shrimp in the entire country.

The learnings from the frequent outbreaks in the fisheries sector metamorphosed into efforts to make fisheries sector more resilient to such shocks. The Government promoted formation of Aqua Farmers Societies/ Fish Farmer Producers Organizations (FFPOs) in marketing, pre-processing and processing sector and establishment of infrastructure to reduce the hardships faced by the farmers and fishermen during the distress and slump in fish and shrimp prices.

A dedicated programme to develop a fish and fishery products value chain to enhance the domestic fish consumption within the state by utilizing minimum

**At 8 Kgs per capita consumption and a bountiful fish harvest, the local market presented untapped opportunity**

30% of the fish and shrimp production within the state is on the anvil. It has been envisaged that the total fish consumption would be enhanced up to 15 lakh MT by 2025 from the current consumption of 4.36 Lakh MT. A Hub & Spoke model has been proposed for establishment of 100 Aqua Hubs and 14000 retail outlets across the length and breadth of the state on saturation mode. The model will augment per capita domestic consumption of fish by ensuring easy access to live, fresh, frozen fish and aqua products along with marinated and processed products to the end consumers.

Further, the Government has also planned to promote the pre-processing and processing units for aqua products to strengthen the backward linkage and to provide guaranteed market and remunerative price for the fish farmers and fishermen. AFS/ FFPOs will develop

and manage Pre-processing units and will be responsible for sourcing aqua products including live fish/fresh fish/shrimps and other aqua products from the farmers and fishers. These units will then supply the processed/semi-processed products to the processing units run by AFS/FFPOs, Aqua Hubs and exporters as required. The Processing units will further process the products and make them available to the nearby towns and cities thus strengthening the forward linkage and facilitating guaranteed market and remunerative price realization to the farmers and fishermen. This in turn increases the domestic consumption, revenue of the sector, employment and the ecosystem of the districts of the state of Andhra Pradesh.

23 pre-processing and 10 processing units will be established across the coastal areas of Andhra Pradesh considering the potential and demand. The pre-processing units will be developed in the potential production clusters for uninterrupted supply of products/raw materials to the existing and new processing units. These pre-processing units will enable uninterrupted supply of semi-processed products, will increase the utilization capacity of the processing units, will reduce the labour demands at the processing units and will help in keeping the freshness of the products. The Pre-processing/Processing units will procure the aqua produce from the local aqua farmers/fishermen which will safeguard them from distressed selling, especially during pandemic or other disasters. As the proposed units will increase the marketing channels, this may also help in fetching remunerative prices to the aqua farmers/ fishers. These units will also create additional livelihood opportunities to the men and women in the local areas.



# KRISHNA PRASAD'S ORGANIC DAIRY FARM, PEDAPALEM, DUGGIRALA MANDAL, GUNTUR DISTRICT

**K**rishna Prasad the Sarpanch of the village is the proud owner of forty cows of Gir breed which he had acquired through the PKVY scheme. The scheme emphasises on promotion of local breeds, local breed products and organic farming. A unit of 20 cows and one bull costs Rs 30 lakhs. Under the scheme fifty percent subsidy is given to the farmers. Shed and some equipment are also provided through the scheme. Only byproducts such as ghee and buttermilk are generated and marketed here. Cow dung and urine produced in the farm are used in the preparation of jeevamrutham and ghanajeevamrutham which turns into valuable organic manures for his 40 acres of land comprising of paddy, black gram, green gram and turmeric. The products from this farm are marketed under the brand name, 'Sanathana'. Certified organic by TQ cert, the product is marketed in Hyderabad and Vijayawada.

"These cows have been brought from Gujarat. An amount of 1.5 lakh per month is spent on the maintenance and upkeep of the farm. So far the venture has been profitable. We get about 8-12 liters of milk per day. We do not sell milk. Only ghee and butter milk are sold. But mostly butter milk is absorbed in to our organic farm for preparation of biopesticides. Initially we attended a few training programmes on organic farming organised by the government. Later on we researched on our own and found many information that we applied on our farms," Prabhu, son of Krishnaprasad is a computer engineer who has chosen dairy farming over engineering. "I did engineering for my parents but farming is my passion."



Winner of best farmer award, Krishna Prasad avers that it is a viable project. However, he has realised that it is wise to go for value added products. "Organic farming is not viable without having your own dairy farm. Earlier we bought cow dung alone for Rs. 4 lakhs. "

Venkata Dhanalakshmi, wife of Krishnaprasad too participates in the activities of the farm. In fact she is the one who supervises the preparation of ghee and butter milk. Along with her sister, she has also diversified into pickle making where she uses only organic products sourced from their farm. Mango, tomato, chilli and ghonghura pickles are marketed under the brand, 'Akshaya aahar'. They also

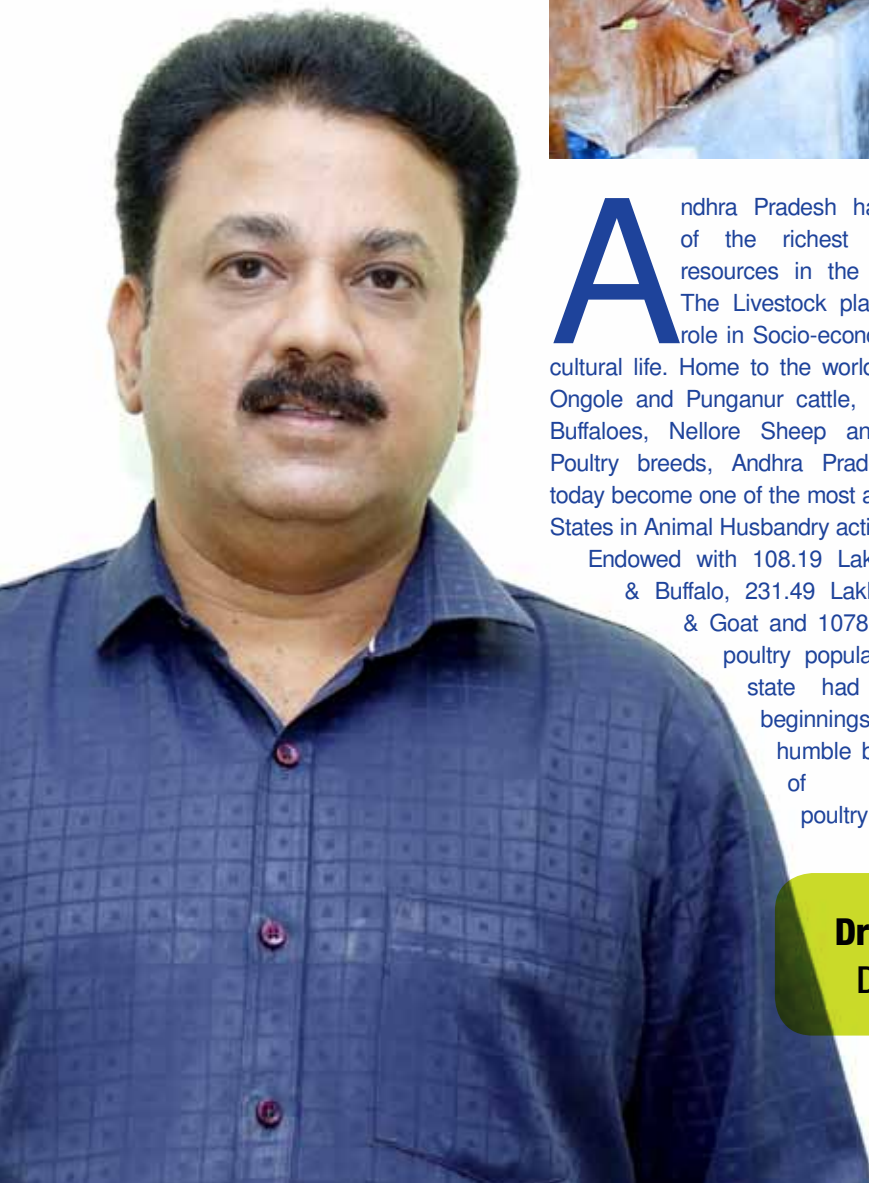
market Jaggery. "We have tied up with other organic farmers and source products from them. Our farmer grows sugarcane in 15 acres of land , make jaggery and sell it to us. We market it under our brand. The farmer has organic certification", says Prabhu.

Cows are housed in large sheds under ample shade. Fans whirling keep mosquitoes at bay. Food for them- both dry and green are sourced from their farms itself. Concentrated feeds are also given through total mixed ration.

The cows are monitored and get regular visits from Dr. Venkata Suresh, the veterinarian Surgeon. Deworming, preventive vaccination are regularly given.

# ANDHRA'S ANIMAL AFFLUENCE

To boost the animal husbandry and veterinary sector in Andhra Pradesh, the state government has set up "India's first government-run ambulance network" for animals



**A**ndhra Pradesh has some of the richest livestock resources in the Country. The Livestock play a vital role in Socio-economic and cultural life. Home to the world famous Ongole and Punganur cattle, Godavari Buffaloes, Nellore Sheep and Aseel Poultry breeds, Andhra Pradesh has today become one of the most advanced States in Animal Husbandry activities.

Endowed with 108.19 Lakh Cattle & Buffalo, 231.49 Lakh Sheep & Goat and 1078.63 Lakh poultry population, the state had humble beginnings. From a humble beginning of backyard poultry, the

sector has grown into a dynamic industry producing 2496.39 Crore lakh eggs per annum thereby assuming first position in the country. The Milk production too has made a quantum leap from 18.08 lakh tonnes in 1979-80 to 76.24 lakh tonnes during 2005-06. Meat production increased from 0.96 lakh tonnes (1979-80) to 147.14 Lakh MTs becoming the fifth biggest producer. With 9.54 Lakh MTs of meat production, the state stands second in the country. The contribution of livestock sector to the state economy is Rs.112972 Cr. which is 11.80% of GVA at current prices. Effective Veterinary and Animal Husbandry services rendered over the years have been the main instrument in achieving these spectacular production levels.

The Livestock Development has

**Dr R Amarendra Kumar**  
Director Animal Husbandry





attained the status of an Agro-based industry generating economic growth, gainful employment and livelihood to many weaker sections in the State. Small and marginal farmers and landless poor contribute to 62% of total milk production and own 70% of livestock in Andhra Pradesh. Women provide nearly 60% of livestock farming labour. Similarly rural shepherds own 90% of sheep population and entire piggery development is the monopoly of weaker sections. Owned by 62.54 lakh households, livestock wealth continues to be a powerful tool for socio-economic change and an important priority component in rural development and poverty alleviation programmes in the State. Realizing this potential the government's goal is to place the State of Andhra Pradesh as one of the leading state in milk, meat and egg production. Several initiatives have been conceived and implemented to achieve the same and increase the income of farmers through productivity enhancement of animals.

### **Rajanna Pashuvaidyam and Raithu Bharosa Kendraalu**

Veterinary Health Care Services remains the cornerstone for a vibrant livestock sector. The government therefore has made provisions to provide quality services to the livestock farmers by making available drugs and medicines, AI equipment and First Aid Kits at all Raithu Bharosa Kendras under Rajanna Pasu Vaidyam. Besides this government certified feeding inputs like certified fodder seed, TMR blocks, Mineral mixture are also made available at these centers. Chaff cutters have also been made available to the livestock farmers of

**The government therefore has made provisions to provide quality services to the livestock farmers by making available drugs and medicines, AI equipment and First Aid Kits at all Raithu Bharosa Kendras under Rajanna Pasu Vaidyam**

the state.

### **Dr. Y.S.R. Cheyutha**

Dr. YSR Cheyutha aims at empowering the families through women and helping them in creating a steady income generation avenue. Under this scheme distribution of Milch Animals and Sheep & Goat Units have been undertaken. So far 164266 milch animal units and 93111 Sheep & Goat Units have been supplied. Through this scheme the state government is focusing on lending a helping hand to women in age group of 45-60.

### **Dr.Y.S.R. Livestock Loss Compensation scheme**

Livestock Loss Compensation Scheme has been under implementation since 2019 wherein, compensation shall be paid to the farmers, in case of mortality of Cattle / Buffaloes and Sheep / Goat in the State. In the event of death of Cattle / Buffaloes, a compensation of Rs.30,000/- per head for improved & indigenous breed and Rs.15,000/- per head for Non Descript breed shall be paid to the farmers. In the event of death of Sheep / Goat, the compensation of Rs. 6,000/-per

Sheep/Goat (6 months and above age) shall be payable. So far, an amount of Rs.51.76 Cr been credited in the farmers' bank account towards compensation of the livestock losses.

### **Local Breed Conservation Cow Farms**

Conservation of local breeds has been high in the agenda of the state government. Establishment of 113 Dr.Y.S.R. Desiya Gojathula Pempaka Kendramulu (58 in 1st phase and 55 in 2nd Phase) for conservation of Desi cows and promotion of sustainable Organic farming is an important step in this direction.

### **Mobile Ambulatory Veterinary Clinics**

To boost the animal husbandry and veterinary sector in Andhra Pradesh, the state government has set up "India's first government-run ambulance network" for animals. A total of 175 mobile ambulances (veterinary) clinics will be placed at Assembly Constituency Level on the lines of 108 Services for providing Veterinary services at the doorstep and provision for another 165 Mobile Ambulatory Veterinary Clinics in 2nd phase from April 2022 has been planned. These mobile ambulances shall provide veterinary first aid services along with spot diagnosis and attending to emergency cases. One of the major facilities these ambulances will provide is the 'Hydraulic Lift' facility to lift animals and shift them to the nearest Government Veterinary Facility in case of emergency. One veterinary doctor, One Para-veterinary worker, will be assigned to every ambulance. These ambulances will also have a 24/7 toll-free call centre.

# RAWEP

## MAKING STUDENT READY



**T**he Acharya N.G. Ranga Agricultural University is the first Agricultural University in the country to introduce RAWEP in the year 1979 in its undergraduate course curriculum. This programme has been appreciated by the ICAR and had become a role model for other State Agricultural Universities. As per the fifth Dean's committee recommendations, the revised curriculum for B.Sc. (Hons) Agriculture degree is under implementation from the academic year 2016-17 in which STUDENT READY programme has been recommended as a new initiative during the final year to provide rural entrepreneurship awareness and practical experience in real life situation. Among the five components of STUDENT READY, Rural Awareness Work Experience Programme (RAWEP) is one of the crucial components that enable the students to experience the rural milieu. Accordingly the RAWEP manual is modified in tune with the objectives of STUDENT READY. Under this programme, every student is expected to work for one semester with farmers in villages within the vicinity of Research Stations / KVKs / DAATT Centers of the university. This is a unique opportunity for the students to work with the farmers at their farms and identify various production,

RAWEP develops competency in the areas of technological, managerial and communication skills among the students.

protection and marketing constraints. In addition, RAWEP (with a semester load of 14 credits) develops competency in the areas of technological, managerial and communication skills among the students. The main components of the programme include Crop Production, Plant Protection, Rural Economics, Extension Programme and Research Station / KVK / DAATT Center activities. Duration of the programme shall be for

14 weeks corresponding to Kharif / Rabi including NSS Special camp.

A group of about twenty students shall be allotted to each Research Station / KVK / DAATT Center. The students in turn shall be allotted in batches of three to five boys or six to eight girls to selected village in the vicinity of the Research Station / KVK / DAATT center and attached to one host farmer each. The students shall have to make their own arrangements for boarding and lodging in the village and they will be paid a stipend of Rs.3000/- per month during the programme.

### **RAWEP Students with Rythu Bharosa Kendras (RBKs)**

The University has developed Methodology for involvement of

S. No.	District	RBKs	ANGRAU Institutions	No of RAWEP students allotted	District wise total students
1	Anantapuramu	867	DAATTC, Anantapuram	20	55
			KVK, Reddipalle	27	
			KVK, Kalyandurgam	8	
2	Kurnool	877	DAATTC, Kurnool	18	64
			KVK, Banavasi	46	
3	YSR Kadapa	639	DAATTC, Utukur	38	61
			KVK, Utukur	23	
4	Chittoor	946	DAATTC, Kalikiri	29	50
			KVK, Kalikiri	21	
5	SPSR Nellore	680	DAATTC, Nellore	21	42
			KVK, Nellore	21	
6	Prakasam	906	DAATTC, Ongole	30	42
			KVK, Darsi	12	
7	Guntur	865	DAATTC, Guntur	55	55
8	Krishna	814	DAATTC, Uyyuru	36	110
			KVK, Garikapadu	31	
			KVK, Ghantasala	43	
9	West Godavari	948	DAATTC, Undi	23	23
10	East Godavari	1137	DAATTC, Peddapuram	24	24
11	Visakhapatnam	627	DAATTC, Anakapalle	16	38
			KVK, Kondempudi	22	
12	Vizianagaram	634	DAATTC, Vizianagaram	20	35
			KVK, Rastakuntabai	15	
13	Srikakulam	838	DAATTC, Srikakulam	23	29
			KVK, Amudalavalasa	6	
	Total	10778		628	628

and preparation of plans based on the problems identified. It can also help in assessment of training needs of the farmers and conduct of the training programme. They can also study the ongoing Central/ State Government programmes/ schemes.

They in turn document database pertaining to the RBK i.e., farming situations, farming systems, cropped area, irrigation sources, cropping pattern etc. The students are expected to involve in all RBK activities and should gain first hand knowledge on e-crop booking, polambadi, seed village programme, crop insurance, input booking, Kiosk operation, advisory services to the farmers, procurement of produce from the farmers and all other government schemes implemented through RBKs. The students should maintain an information corner at RBK for displaying the information on need based recommendations.

All the extension programmes conducted by RAWEP students should be brought to the notice of RBKs and the VAAs of RBK should also be made a part in their programmes. Herbarium specimens should be collected pertaining to insect damage, plant disease; nutritional disorder, weeds and physiological disorders in the standing crops and needs to be displayed at RBKs. The linkages should be utilized for dissemination of improved technologies, weather based agro advisories etc. by keeping information display board at RBK and Students should prepare information materials related to crop production, plant protection, rural economics and extension programmes and can be displayed in RBKs.

Student should submit a chapter in Extension record on the RBK through documenting all the information they have collected through schedule on jurisdiction, farmers' profile, RBK functioning and feedback from 40 farmers. Student should develop one video module on RBK where they have studied by recording the farmers interaction, local issues related to farming activity and also functioning of the RBK.

Agricultural University students in functioning of the Rythu Bharosa Kendras (RBKs) and to link RAWEP Programme formally in the Academic Session of the students for benefit of both the students and Farmers in the technical Knowledge up gradation. During academic year 2020-21, a total number of 628 students from five constituent and six affiliated Agricultural colleges were allotted to DAATTCs and KVKs in Andhra Pradesh and all RAWEP students are linked to RBKs (2 students per RBK).

Students utilize RBKs as platform for identification of major agricultural problems of the village, gap analysis



# ANGRAU – ANDHRA'S BASTION OF AGRICULTURE EDUCATION

The Andhra Pradesh Agricultural University (APAU) established in 1964 at Hyderabad was renamed as Acharya N. G. Ranga Agricultural University (ANGRAU) on 7<sup>th</sup> November 1996 in honour and memory of an outstanding parliamentarian, Kisan leader and freedom fighter, Acharya Gogineni Ranga Nayakulu. With the bifurcation of the state in 2014, head quarters of ANGRAU was established at Lam, Guntur in 2016

Among the 74 agricultural universities in the country, ANGRAU has been ranked eleventh. ANGRAU also works on the triple mandate of education, research and extension. The university involved in training human resource needed for Agriculture, Agricultural Engineering & Technology and Community Science, constantly strives to generate technologies for increasing production in agriculture, home science and allied sectors. The university has also been in

**A. Vishnuvardhan Reddy**  
Vice Chancellor



ANGRAU was the first university in the country to introduce Rural Agricultural Experience Programme (RAWE) in under graduate courses for the final year students

the forefront of dissemination of knowledge by assisting in the process of transfer of technology in collaboration with the development departments of the Government.

## Education at its best

ANGRAU has five constituent colleges of Agriculture, two colleges each of Agricultural Engineering and Food Science and Technology and one Community Science college. Twenty Agricultural polytechnics, one each of Organic Agriculture, Seed Technology and Agricultural Engineering polytechnics are functioning. The university also has six affiliated Agricultural Colleges along with 80 Agricultural Polytechnics.

The undergraduate, post graduate and doctoral programmes are accredited by ICAR for a period of five years. ANGRAU was the first university in the country to introduce Rural Agricultural Experience Programme (RAWE) in under graduate courses for the final year students which was later adopted by NARES. Besides this, the university is also credited for introducing Personality Development Programmes for UG students and *anti plagiarism* policy from the





More than 50% area of Groundnut in the country is occupied by ANGRAU varieties

Delhi, Mumbai and Kharagpur. In Community Science, 21 students secured admission in different SAUs across the country

During the COVID-19 pandemic when lockdowns were imposed and the educational institutes around the world switched to the online mode, ANGRAU too organized online classes for the UG/ PG and Ph.D students. The university used this as an opportunity and invited guest lectures with illustrious faculty from National and International Institutes of repute for the benefit of Postgraduate students.

The University is alma matter for several illustrious alumni who occupy/ have occupied very high positions in Global Research Institutions, Civil Services and has shown remarkable impact on the society at National and International level.

Four teachers of ANGRAU had received ICAR outstanding Teachers Award and 17 scientists have bagged Jawaharlal Nehru Award.

The university itself has received several awards. ICAR Best Institution Award was presented to ANGRAU in 1999. During 1999-2000, ANGRAU received ICAR Excellent performance Award. Third National Youth Parliament Competition Award, 1999-2000; Sixth national Youth parliament Award, 2002-2003 and ICAR JRF Award, 2004 and 2011 are also some of the organization's accomplishments. ANGRAU was also the recipient of ICAR Award for securing 2<sup>nd</sup> position in PG scholarships at National level for 2018,2019 and 2020

### Research accolades

ANGRAU has six Regional Agricultural Research Stations in each zone of AP. 27 Agricultural Research Stations,28 main centres and 9 sub centres AI-



Academic year 2019-20. Smart classes, virtual class rooms, acoustic lab and central instrumentation cells have raised the quality of the level of education imparted in the campus. ANGRAU was also the first to introduce Participatory Agricultural Management Program (PAMP) for the students of Diploma in Agriculture

On the education front, ANGRAU students have fared well in All India PG seats(ICAR-AIEEA-PG)-2020 securing a total of 207 seats in various reputed Institutes/SAUs spread throughout the country. About 40 students from Agricultural Engineering, Food science & Technology got admitted in management programs of prestigious institutions like IIMs, MANAGE and in different IITs at





ICAR Vasantha Rao Naik Award (2016-17) for development & application of dry land technologies in farmer fields

### Extending Extension

ANGRAU has 13 Krishi Vigyan Kendras (KVK's), 13 District Agricultural Advisory and Transfer of Technology Centres (DAATTCs), 5 Extension Education Units, one each Farmer's Call Centre (FCC) and Agricultural Information and Communication centre (AI&CC). ANGRAU regularly conducts field demonstrations, Field schools etc., in farmers fields with new technologies developed at research stations. Every year, ANGRAU conducts Kisan melas and Rythu Sadassus in different Agroclimatic zones of Andhra Pradesh involving farmers and line departments.

On farm trials, front line demonstrations are conducted in farmers' fields and training offered for farmers, extension personnel. Scientists also participate in a number of programs in TV and Radio. ANGRAU in convergence with Rythu Bharosa Kendras (RBKs) has conducted 752 trainings for 36078 RBK staff, 999 Diagnostic field visits covering 22780 farmers, 80 field days with 1791 farmers, 888 field schools with 10851 farmers and 41 scientists participated in 89 TV contents during 2021.

ANGRAU produces breeder seed and foundation seed of various improved varieties released from the University and supplies to farmers of the state of not only Andhra Pradesh but at National level to about 16 states. It also supplies planting material mostly through its KVK. Further, ANGRAU has signed MOUs with leading research institutions in the country and abroad to benefit Post Graduate students for pursuing their research work in those institutes.

With inputs from ANGRAU functionaries International Commission on Irrigation, and Drainage (ICID) for World Heritage structures selected Porumamilla Tank, Cumbum tank and Kurnool Cudapah (KC) canal from Andhra Pradesh assigned them the status of world heritage structures.

CRP schemes (funded by ICAR) and 3 Gol schemes are operating under ANGRAU. The university has released more than 480 varieties of various crops like cereals, millets, oilseeds, pulses, commercial crops like cotton.

One-third of rice area in the country is occupied by ANGRAU varieties. Mega rice varieties (cultivated in more than 1.0 m.ha) of ANGRAU include MTU 7029 (Swarna), MTU1010 (Cotton dora sannalu), BPT 5204 (Samba Mahsuri) and MTU1001-Vijetha. More than 50% area of Groundnut in the country is occupied by ANGRAU varieties like Kadiri -6, K-9, Dharani and Kadiri Lepakshi.

Centre of Excellence for Organic farming has been established at Regional Agricultural Research Station, Chintapalli in Hill and Tribal area zone of Andhra Pradesh. ANGRAU's annual biofertilizer production stands at 710 MT and it is spread at four of its research stations in the state of AP.

ANGRAU has standardized agricultural drone technology for application of pesticides, seed sowing, fertilizer application in 9 major crops in AP

The university has also received three patents. First one is for Machinery and process of manufacturing of cane jaggery in crystal form (Patent No.361025) for PHETC, RARS, Anakapalle. Second one in association with

## One-third of rice area in the country is occupied by ANGRAU varieties

S.V. University for preparing dehydrated fruit bar from prickly pear fruits (*Opuntia ficus indica*) and product. (Patent No.367043). The third patent was received for Mechanized jaggery granulator for preparing jaggery granules (Patent No.382165)

ARS, Vizianagaram received "ICAR - Fakruddin Ali Ahmad Award" For Outstanding Research In Tribal Farming Systems for 2020. The institute was also adjudged the 'Best Performing AICRP Centre' for over all performance from 2017-20 under AICRP Small millets and 'Best AICRP - IFS under On Farm Scheduled Tribe Component category' for biennium 2018-20. AICRP on Sugarcane of RARS, Anakapalle received the award for excellence in 2019-20. The AICRP on MULLaRP at RARS, Lam secured the best center for development of Blackgram varieties during 2019. Indian Society of Genetics and Plant Breeding recognized the MTU 1010 as land mark rice variety during 2019. AICRP on FIM got Choudary Devi Lal outstanding AICRP Award for the year 2018 from ICAR. ARS, Anantapuramu received





# AP MARKFED EASING MARKETING AND REALISING PROFITS

**A** federation of Co-operative Marketing Societies in Andhra Pradesh, AP Markfed's main objective is helping the farmers to secure better price for their produce by taking care of their market needs and providing agricultural inputs. Mainly involved in the sale of farm inputs like chemical fertilizers, pesticides & seeds, maintenance of godowns & procurement of Agricultural Commodities through its member societies, AP Markfed follows Pancha Sutra- the new procurement strategy

- Procurement is done only at Rythu Bharosa Kendralu (RBK). No farmer goes outside RBK limit to sell their



**Sh PS Pradyumna, IAS**  
Managing Director, MARKFED

- produce.
- Aadhar based Biometric authentication to ensure procurement

is done only from farmers.

- Priority is given to small and marginal farmers for procurement.
- Quality assaying at procurement center to ensure only FAQ or better material is procured
- Payment directly to Farmer's bank account with a TAT of 15 days

### CM APP

Continuous Monitoring of Agriculture Price and Procurement (CM APP), the state of the art inhouse procurement software, is an end-to-end software solution covering the entire procurement process, with an online Dashboard and MIS monitoring system with real-time data.





### Salient features of CM APP

- Price data and related analytics for real time decision support
- User friendly & real-time Dashboards
- Scheduling based on proposed harvest date
- Preference to small and marginal farmers in scheduling
- Integrated third party audit module for quality monitoring
- Fully automated workflow based on the roles & tasks assigned.
- Integration of data with e-Crop to cross check only predefined percentage of produce is bought
- Aadhar authentication to make sure produce is bought only from registered farmers.
- Geo-fencing ensures loading and truck sheet generation only in the geo-fenced area
- Establishing E-signature by CDAC for payment approvals
- Aadhar linked bank accounts to establish a tracking mechanism to ensure timely payments, Visibility leading to accountability and transparency
- Disposal mechanism integrated to provide real time inventory details
- CM APP Farmer Payment Status: Dedicated farmers app to have in hand tracking of payment status,

### AP Markfed follows Pancha Sutra- the new procurement strategy

nearby procurement center details and latest MSP rates.

#### AI based quality assaying:

AP Markfed has conducted Meity startup Hub (MSH) Challenge to encourage startups to provide innovative solutions to their existing software systems under four categories - Big data analytics, AI based automated quality assaying, Natural language processing for better customer service and Geo tagging and Geo fencing.

Three startups were chosen for pilot after through evaluation. They are running a pilot at different locations and will present the solutions implemented, impact of the solution on the procurement process, value the solution has created and rollout plan at the end of pilot. One successful pilot would be declared the winner post

which they will be called upon to discuss the full scale role out starting from rabi procurement.

#### MarkRay – Markfed’s own e-Auction Platform:

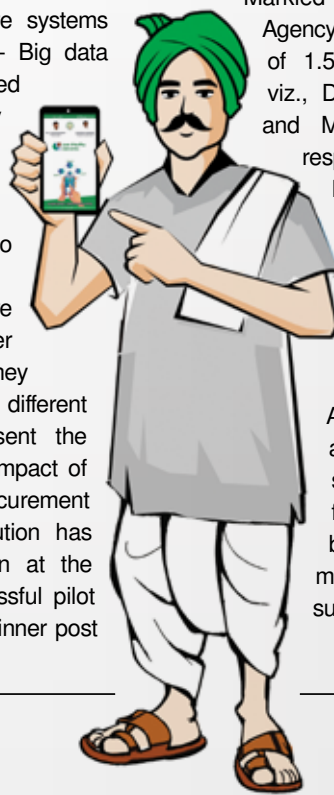
Markray creates healthy competition and hence results in fair price discovery. It benefits the buyers by enhancing transparency and speeding up the auction process without any intermediaries

#### AP Markfed Fertilizer operations:

Markfed was chosen as Nodal Agency for buffer maintenance of 1.50 lakh MT of fertilizers viz., DAP, NPKs, PACs UREA and MOP and entrusted the responsibility of RBKs and PACS. Markfed maintains buffer fertilizers in all the 13 districts.

#### CM AID

Taking the cues from the success of CM APP, AP Markfed has developed a completely integrated system for managing fertilizer distribution business. With closed monitoring of Fertilizer supply chain through CM





AID, Markfed aims to serve the farming community by supplying quality fertilizers at their doorsteps well below the MRP rates through RBKs saving lot of time and money to the farming community.

CM AID helps in continuous monitoring of Agri input distribution at RBK level and tracking payment cycles closely to ensure timely payments. It has also helped in timely delivery of inputs at the doorstep of farmers, monitoring logistic costs and placing supplier indents and supplier payments.

### What were the key reforms introduced in the APMC ecosystem?

To decentralize the market yards and bring better coordination, the APMC have been reorganized in co-terminus with assembly constituencies in the state. As a result, the number of market yards has increased from 191 to 218, which will benefit the farmers. The rule of reservation has been introduced in the constitution of market committees. 50% of the Chairpersons of APMC in the state are reserved for women and 50% reservation to SC/ST/BC/Minorities. When all APMCs are Constituted, Andhra Pradesh shall be the only state in the country having 109 women APMC Chairpersons out of 218 APMCs. Out of 218 APMCs, at present 206 APMCs are constituted, and 102 Women were nominated as Chairpersons. In addition

CM APP, the state of the art in-house procurement software, is an end-to-end software solution covering the entire procurement process, with an online Dashboard and MIS monitoring system with real-time data

to the above, the market committee consisting of 15 members will have 50% women reservation and 50% reservation to SC/ST/BC/Minorities.

### What is the general method of marketing in Andhra Pradesh? Mandis have generally been regarded as exploitative. How is the case in Andhra Pradesh?

Department of Agricultural Marketing has provided flexibility to producers, in Andhra Pradesh. It is not mandatory for producers to bring their produce to market yard, they can sell outside market yard as well. Unified licenses were issued to ease the documentation for those operating at multiple markets. Direct purchase centers were allowed, enabling traders / processors to buy directly from farmers avoiding middlemen. Necessary amendments in APMC Act were made to allow establishment of private mandis and Private e-mandis in AP. In line with these amendments eFarmarket, to provide market linkages at farmgate has

been initiated. All these initiatives have resulted in transparency in trading, hence there is a very limited chance of farmers being exploited. All major markets are integrated to eNam and trades are routed through eNam platform. Farmer brings their produce to APMC and register their lot for auction. Quality of the lot is assessed and the same is uploaded in eNam. Interested traders quote for these lots, and payment is done to the farmers within 24 hours. Nevertheless, to address any grievance of farmers a strong grievance redressal system is in place.

### How have Rythu bazaars ensured that the farmers got the right prices for their commodities?

The objective of setting up Rythu Bazaars in the state is to facilitate farmers to sell their vegetable produce directly to consumers without any intermediaries. This is helpful for both farmers and consumers as the margin share of intermediaries are shared between both farmers and consumers. Different commodity prices

are fixed by the Estate Officer of the Rythu Bazar based on the local prices, demand, and supply. The prices are set in a way that they are less than retail prices but greater than what farmer would have got by selling to intermediaries. It is the case that farmers always fetch better prices by selling their produce at Rythu Bazars.

### Are farmers utilizing the online marketing system introduced by the government?

Since the implementation of eNam, all trades in APMCs happen through eNam. This system helps in bringing transparency in the trading process. Trading through eNam is restricted to APMCs only, hence farmers need to bring their produce to the market yard. To facilitate trade from farmgate, the state government is developing eFarmmarket platform to connect farmers directly with traders across India. It is a trusted and transparent online trading platform for the farmers of AP easing Farmer / Sellers' efforts in trading Agri & Horti produce directly from the Farm gate. It helps in building direct market linkages between Farmers, FPOs and Buyers. It is an end to end support of trading activity through integration of superior services such as quality assaying, logistics and storage services. It has helped in transforming the state's agri marketing value chain into a next generation platform for digital business in agriculture

### Under the present government,

**CM AID helps in continuous monitoring of Agri input distribution at RBK level and tracking payment cycles closely to ensure timely payments**

### how has the infrastructure for marketing and storage improved?

To improve the income of farmers in the state, Government of Andhra Pradesh has come up with a concept of Multipurpose Facility Center (MPFC) for development of farmgate infrastructure in the state created in coterminous with RBK in each village. These MPFCs consists of pre-harvest and post-harvest infrastructure for agriculture and allied sector activities intended to provide services to the farming community at the farmgate level. The key component of these MPFCs is storage facility with a minimum capacity of 500 MT at farmgate level. This investment is planned to be developed at RBKs level across the state and were proposed through PACS. GoAP is supporting PACS towards establishment of these infrastructure by providing 10% margin money. GoAP is handing over the required land (0.5 acre to 1 acre) in every village free of cost for establishment of the infrastructure. The total financial outlay of projects proposed under AIF is Rs. 2,693 Cr. Various marketing infrastructure is

being developed at APMCs across the state. Under the present government, since 2019, developmental activities worth Rs. 60.22 Cr were carried out and works worth Rs. 189.65 Cr. are in progress.

### What are the support systems provided by the government for farmers who are exporting? Are there any incentives or infrastructure support provided to the farmers?

The Government of Andhra Pradesh is supporting the export of Agricultural and Horticultural commodities from the state through incentives. The state government provides exemption of 100% market fee for Rice exported to other countries. 75% of market fee for prawns exported to other countries is also waived. Also, there is no market fee collection for all fruits and vegetables.

### Market information is important for ensuring profitable returns to the farmers. Are there any market information dissemination services extended by the government? Please elaborate.

CM APP, one of its kind systems was developed by the Dept. of Agricultural Marketing for gathering commodity wise local market prices from all RBKs in the state. Village Agricultural Assistants (VAAs) working at every RBK gathers the local prices and uploads the same in the app. The data gathered is monitored at the department level to identify any dips in the prices. This helps the government to intervene in case market prices are too low. In terms of dissemination the information at Market Yards, price display boards are placed at various prominent locations in Market yards for displaying market prices at major markets across the nation. Taking one step ahead in the state of Andhra Pradesh MSP is declared at the time of sowing itself and is displayed across all RBKs for efficient dissemination among farmers that help them in making cropping decision.



# COORDINATING CREDIT FLOW

The State Level Bankers' Committee (SLBC) was constituted in Andhra Pradesh to act as a consultative and coordination body of all financial institutions operating in the State. The committee is expected to discuss issues, consider alternative solutions to the various problems in the field of banking development, and evolve a consensus for coordinated action by the member institutions. The State Level Bankers' Committee (SLBC) was conceptualized in April 1977, as an apex inter-institutional forum to create adequate coordination machinery in all States, on a uniform basis for development of the State.

In Andhra Pradesh, Andhra Bank was the convener bank from 1984 till 2014. Post amalgamation of the bank with Union Bank of India, the amalgamated entity assumed convenorship from 1 April 2020. The main function of SLBC is to conduct RBI mandated quarterly SLBC meetings where representatives of commercial banks, RBI, NABARD, heads of Government departments and representatives of financial institutions operating in a State, come together and sort out coordination problems at the policy implementation level.

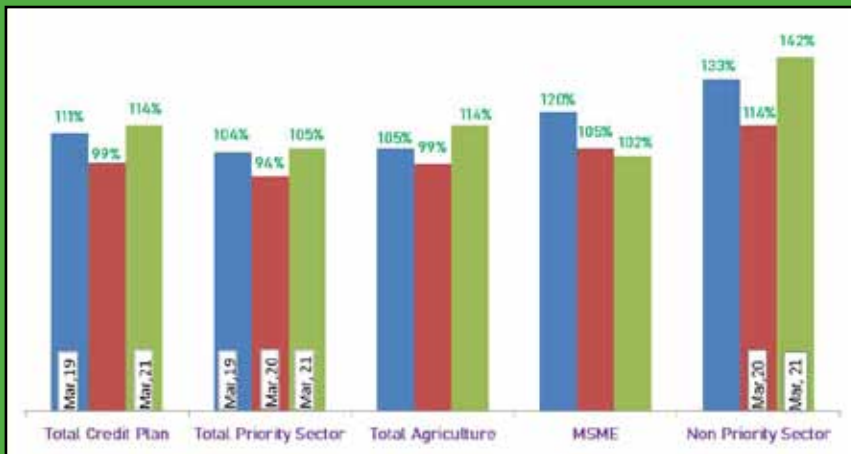
During the SLBC meetings, review of financial inclusion initiatives, expansion of



**Sri V Brahmananda Reddy**  
Convener, SLBC & CGM, Union Bank

banking network and Financial Literacy will be held. There will also be discussion on policy initiatives of the Central/State Government/RBI (Industrial Policy, MSME Policy, Agriculture Policy, Start-Up Policy, etc.), and expected involvement of banks. Review of credit disbursement by banks is also an important topic of the meetings. Status of opening of banking outlets in unbanked villages, CBS-enabled banking outlets at the unbanked rural centres (URCs), Review of Operations of Business Correspondents – hurdles/issues involved, Progress in increasing digital modes of payment in the State, status of rollout of Direct Benefit Transfer in the State, Aadhaar seeding and authentication, Review of inclusion

## ACP - Achievement (%) for last 3 years – AP State



Review of Hon,ble Chief Minister in SLBC meeting

## Advances in the state - last 3 years



Credit Deposit ratio of 140% is one of the highest in the country ensuring that adequate credit flow to the thrust areas

of Financial Education in the School Curriculum, financial literacy initiatives by banks (particularly digital financial literacy), Creating awareness about various schemes, subsidies, facilities e.g. crop insurance, renewable energy and review of efforts towards end to end projects involving all stakeholders in the supply chain are also held. The constant review and follow up helps in increasing the reach of banking services to the masses. Honourable Chief Minister is invited as Chief Guest in the meetings.

The highlight of the SLBC meetings in the state is, the active participation of Hon'ble Chief Minister along with concerned Ministers, top administration of State, top level executives from RBI, NABARD and Banks where a close review takes place on banking and policy issues.

Credit Deposit ratio of 140% is one of the highest in the country ensuring that adequate credit flow to the thrust areas.

Banks have registered a 13, 12, 17 & 7 % growth in Total Advances, Priority sector, Argil, MSME advances during FY 20-21 respectively.

AP has a dense bank branch network with 7500 branches above the national

average per one lakh population (AP – 15, India – 14). Out of that, 66% of the branches are in rural and semi urban areas. Apart from this, around 21,000 Bank mitras are extending banking services.

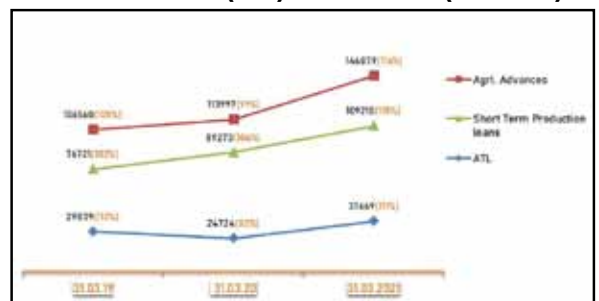
## Agriculture lending in AP

The overall agriculture portfolio has been

## Agriculture lending outstanding position (Amt in Cr)



## Annual Credit Plan (ACP) Achievement (Amt in Cr)



steadily increasing for last 3 years which registered a 17% growth as on 31.3.2021 over previous year.

Of the total agriculture advances, short term production loans constitute 66% followed by ATL.

The banks achieved the ACP 105%, 99% and 114% under agriculture sector for last 3 years, where a consistency



A Branch Manager of UBI, participating in awareness camps at one RBK Location in Prakasam district

growth of ACP achievement observed in Short term loans.

Percentage of loan accounts against number of farmers (85.24 laks land holdings) is 120.97% as on 31.3.2021 in the state with an outstanding finance of Rs 1,84,585 cr.

The share of small and marginal farmers of total number of farmers in the State is 88.5% where the percentage of the loan number to the number of small and marginal farmers is 121.07% with an outstanding credit of Rs 1,17,992 cr.

The total farmers who availed finance for allied activities are 7.36 lakh with credit outstanding of Rs 11,458 cr. The KCC facilities to AH and Fishery farmers during the financial year 2021-22 is for almost 0.8 lakh farmers, to the tune of Rs 1245 cr.

AP leads in tenant farmer finance with an average of Rs 1000 cr loan disbursement covering around 2.5 lakh farmers annually.

Online loan charge creation module in AP has facilitated Bankers and farmers in speedy credit decision and loan disbursement besides curbing the incidences of finance against fake land records. Almost 50.98 lakh (95%) loan accounts have got online charge in WebLand portal.

E-Panta portal is a transformational initiative of Govt to capture standing crops in digital mode. This helps in identifying the original cultivator to extend government benefits along with bank credit.

### Sunna Vaddi Panta Runalu scheme

It is another flagship programme, that has helped in inculcating prompt repayment culture among the farmers and also to reduce the debt burden of small and marginal farmers, by reimbursing total interest on the crop loans up to Rs. 1.00 lakh, on prompt repayment. Claims are being paid by the Government every season on submission of data in specified portal by Banks.

### Integration of Business Correspondents (BCs) at RBKs

### SHG Finance in the AP State

Year	Total (Amt in Cr)			
	Target	Disbursements		
		No.	Amt.	% Ach
2018-19	13373	503925	19370	144.84%
2019-20	16819	624239	22271	132.42%
2020-21	16505	755998	20623	124.95%



Sri. Raj Kiran Rai MD & CEO along with Hon'ble MP, Machilipatnam visit to product exhibition of members trained at RSETI, Machilipatnam

AP has a dense bank branch network with 7500 branches above the national average per one lakh population

SLBC took the initiative to make use of 10,700 network of RBKs for banking penetration and facilitating services to the farmers at their doorsteps. Banks integrated BC services at RBK location, enabling the farmers to access banking services. Enabling the ATM services at RBK locations is also under consideration. Banks and Agriculture department have been conducting awareness camps across the state at all RBK locations to get deep penetration of bank credit and other FI activities besides PM Jeevan Suraksha schemes.

### Mapping of Village Secretariat and Ward secretariat staff with bank branches

This concept has ushered in a new era of decentralization, where public are able to avail 500+ Government services at grassroot level. The banking system is also synchronized with the concept where the secretariat staff is permanently mapped with their nearest bank branch for coordination and collective delivery of bankable schemes. This resulted in smooth flow of huge volume of funds under various welfare and developmental schemes through DBT mode in a seamless and successful manner. The system has also immensely helped in extending Bank credit support to the large number of people like petty traders, artisans, handicraft etc., under



PMSVANIDHI and Jagananna Thodu scheme.

### YSR Cheyutha Scheme

As part of economic empowerment of women, and encouraging micro entrepreneurship among SC ST BC and minority, in the age group 45-60, government rolled out the scheme by providing Rs 75000 financial assistance in 4 annual tranches. Govt channelized these funds into sustained and long term advantage by encouraging entrepreneurship among them by entering into MoU with reputed MNCs like Amul, Reliance etc, and established forward and backward linkages in agri allied and other activities. Banks are providing additional working capital for the beneficiaries to establish livelihood activities like dairy, retail etc. Almost 0.35 lakh, 0.27 lakh and 0.24 lakh beneficiaries have received bank finance under the scheme.

### Digital Districts Project for deepening of the Digital payments Ecosystem

AP leads in tenant farmer finance with an average of Rs 1000 cr loan disbursement covering around 2.5 lakh farmers annually

Under phase 1, Kadapa district has been declared as 100% digitally enabled. The objective is to provide at least one digital product to the account holders.

Under phase 2, the project is in implementation in Srikakulam and Guntur districts. The digital district concept has helped to educate the farming community on usage of various digital banking channels and also bringing awareness about the possible frauds in digital banking activities.

AP state is prominent in SHG lending where almost 11 lakh groups (1.10 crore members) have received finance to the

tune of Rs 35000 cr. This movement has helped the credit flow to the farming activity since 70% of the group members have utilised loans for agriculture and allied activities.

### Financial & Digital Literacy camps through NABARD support

Banks in AP state are efficiently using NABARD grant support and conducting camps at villages to bring awareness about various bank loan products and services and motivating farmers towards institutional finance.

### Role of RSETIs in developing entrepreneurs skills

There are 16 Rural Self Employment Training Institutes (RSETI) established by PSBs in AP state in all districts, and are transforming unemployed rural youth into confident self-employed entrepreneurs through need-based training programmes followed by handholding support and bank linkage. Almost 5000-6000 rural youth are getting training on various agri related activities annually.

# FROM PROCURING TO DISTRIBUTING INTACT AND SECURE



Awareness about procurement process through banners in RBK premises

**P**addy is an important crop of Andhra Pradesh. The state ranks third in production contributing 12% of total rice produced in the country.

Andhra Pradesh State Civil Supplies Corporation (APSCSCL), a state government undertaking, APSCSCL handles complete paddy procurement under Minimum Support Price (MSP) in Andhra Pradesh and is entrusted with farmer payments, monitoring paddy transport to mills, custom milling of the procured paddy through rice mills, storing the resultant Custom Milled Rice (CMR) required under PDS and other welfare schemes in buffer godowns,

**Periodical curative and prophylactic treatments are given to the stocks to keep the stocks free from infestation**

moving them to the Fair Price Shops (FPS), and finally delivering the excess CMR to Food Corporation of India (FCI). Other commodities such as sugar, dal, oil are also procured by APSCSCL as per instructions of the Government. It also monitors and ensures maintenance of adequate quantity of stocks and timely movement of CMR and other commodities

### Procurement during last Kharif season

During the previous Kharif season (2020-21), 47.32 LMT (lakhs MT) of paddy was procured from 5.14 lakhs farmers, and INR 8868 Crores were paid to the farmers as MSP. The top three districts with respect to paddy procurement were East Godavari (10.54 LMT of paddy), West Godavari (9.44 LMT of paddy) and Krishna (8.36 LMT of paddy) which together accounted for 28.35 LMT of paddy worth INR 5312 Crores, from 3.15 lakhs farmers.





Registration of farmer in e-crop portal in the PPC at RBK



Issuing moisture meter slip to the farmer

to FP Shops.

## Procurement Operations

To conduct paddy procurement at farm level, required infrastructure is set up by the Paddy Procurement Centres (PPCs). Procurement Support Agencies (PSAs) such as PACS, SHGs etc., will be engaged by Joint Collector (RB&R) and District Managers, (APSCSCL/AP MARKFED) and they take up and run paddy procurement operations in all Rythu Bharosa Kendras (RBK). Village Agricultural Assistants (VAA) of the RBK function as supervisors of PSA to organize efficient and hassle-free procurement operations. The entire procurement operation can be divided into three phases – Pre-procurement, Procurement, and Post procurement activities.

## Pre procurement activities

This involves feeding the farmer details in e-crop portal, e-KYC process, arranging for and training of the human resources involved in the procurement activities, mapping of mills with paddy growing farmers, mapping of Sortex mills with Sortex variety growing farmers and non Sortex mills with non Sortex growing farmers, Gunny collection from millers and FP Shops. Planning and scheduling for the field visit, quality testing of the crops to be procured also has to be performed prior to commencement of procurement activities.

## Procurement activities

After quality testing is performed, procurement is carried out by packaging, weighing, and loading of the procured paddy in the appointed transport vehicles. The transportation of procured paddy from the farmgate to the mill premises is carried out by the appointed transport

contractors.

## Post Procurement activities

The transported bags of paddy are weighed in the mill premises using a weighbridge under the supervision of PPC staff, followed by the acknowledgement of the stocks by miller in the presence of ASO/RI at the mill. DM (APSCSCL / AP MARKFED) validates the stocks on its acceptance/receipt from the miller, sharing recommendation for farmer payment within 24 hours. CMR activities such as Quality testing inside the mills to ensure the Sortex norms, and movement of the Sortex quality rice to APSCSCL stock and non Sortex type rice to FCI godowns are also conducted.

## Checkpoints to protect the beneficiaries

The beneficiary farmers are assured of their MSP payments by thorough monitoring of the whole procurement process by APSCSCL and robust checkpoints at every level. At mill premises, the acknowledged quantity will be verified by a Civil Supplies department employee positioned at mills to monitor the weighing process, to ensure no mishaps take place during the weightment. The Technical Assistant (TA) will ensure the accuracy in paddy FAQ norms – both at mill gate and during procurement at farmgate, so that it doesn't affect the farmer payments. The Joint Custodian Officers periodically verify



Loading of procured paddy into the transport vehicle

## Storage infrastructure

- Civil Supplies Corporation (CSC) Investor Godowns (IG) and Own Godowns
- State Warehousing Corporation (SWC) Investor Godown (IG) and Own Godowns
- Central Warehousing Corporation (CWC) Own Godowns
- Food Corporation of India (FCI) Godowns and Private Godowns.
- Stacking is done properly as per the standard norms being adopted in the FCI godowns
- Follow FIFO (First in First Out) method while issuing the stocks.
- Tags for the stacks as mandated under the godown procedure for traceability.
- Periodical curative and prophylactic treatments are given to the stocks to keep the stocks free from infestation
- Similar protocols are followed in the MLS points and FP shops as well, so that the paddy / CMR are stored safely and handled with care to retain their original quality and minimize the storage loss.

the paddy / CMR stocks in the premises of designated rice mills and submit the Physical Verification (PV) reports. In case of non-availability of paddy/ rice during inspection, it is treated as misappropriation and action is initiated for recovery of the amount, thus ensuring that all the beneficiaries of PDS are assured of their allocated rice. The officials of Civil Supplies department will attend to all the grievances at mill gate and storage points and resolve them amicably to ensure seamless acknowledgment of the paddy.

After DM's approval for the acceptance of stock in mills, payment will be initiated within a time span of 24 hours from the Head office and within

21 days from the procurement, the farmers will realize the payment in their bank accounts through Aadhar based transactions. If the farmers face any difficulties in selling their produce, they can contact toll free number 1902. The rejected payments will be regenerated by MD APSCSCL in coordination with Commissioner Agriculture.

## Checking pilferage and black marketing

The Joint Collectors ensure that the Inter-state borders are closed, to prevent the inflow of paddy from other states and ensure that only the local farmers are benefitted as per the intention of the

overall procurement process. The Rice Millers are restricted from purchasing and recycling the PDS rice for delivery as CMR, nor CMR shall be used or cause to be used for sale in the open market in the guise of non PDS rice/super fine rice or export to the other countries either by reconditioning or changing the bags, etc. Violation of this condition shall attract the meaning of "Mischief" under Sec.425 of Indian Penal Code, (45 of 1860) and the Agent shall be liable for criminal action by imposing Prevention of Damage to Public Property Act, 1984, and Andhra Pradesh Revenue Recovery Act, 1864, to recover the CMR dues equivalent penal value besides blacklisting. If any shortage in stocks is found, the miller is liable to pay one and half time (1½) the value of CMR stock in shortage and liable for criminal action under section 405, 420 of IPC, etc. for criminal breach of trust and misappropriation of Government stocks. Also, if any miller wants to purchase paddy in open market, the procured data must be entered through VAAs in the paddy procurement software and ensure that the survey number and transactions of the farmer is closed for Paddy procurement, so that all transactions are registered properly. This is how pilferage and black marketing are prevented and strict penalty will be imposed on the breachers.

Agriculture is considered to be the primary occupation for about 60% of the population of Andhra Pradesh and forms the backbone of the state's economy. But among all the farmers, 65.4% are marginal farmers, 19.3% are small farmers, and together they account for around 58% of the total cultivable land. To support these small and marginal farmers and to keep them motivated to produce more paddy, they must be assured a fair price to ensure their sustenance. Field-level procurement operations directly benefit small and marginal farmers and assure a Minimum Support Price (MSP) for their produce despite price fluctuations in the open market. MSP has thus played an instrumental role in assuring the farmers to produce more paddy.



Transportation of procured paddy to mill premises

# MAHILA DAIRY ASSOCIATION CENTRE, AMCU, CHINNAAGIRIPALLI

Since its inauguration on 14th December, 2021, the association has recorded a steady increase in the number of women farmers pouring milk into the unit. Out of total 291 women farmers in the village, 125 members are suppliers of milk to the centre. Membership is free.

To empower women farmers and provide them with better incomes, the state government had entered into an MoU with AMUL. Before AMUL's collaboration, with dairy farmers in Andhra, the local milk collection groups paid the farmers a blanket amount without assessing the fat or SNF (Solids-Not-Fat) content. Jaganna Palavelluva- AP Amul Project brought a marked change to this situation. Earlier when the milk supplied by the farmers fetched 50 or 60 rupees, this milk collection center has been able to give them upto Rs. 74 per litre, says Ms. Suhasini, In-charge MPDO. On an average, they fetched between 60-74 rupees, depending on the fat and SNF content.

"Inspired by the AMCU (Automatic Milk Collection Units) in Chinnaagiripalli, every gramapanchayat is demanding a milk collection unit. The women here are happy as they have got the highest ever price. There are 291 women dairy farmers here. There is a volunteer system in practise here. Each volunteer is allotted sixty houses to collect data about the family members, their financial condition, schemes they are availing etc. After registering members, we conduct a gramasabha where we select level promoters. Secretary will



also be selected. She should not be a farmer," explains Suhasini.

The milk collection unit consists of stirrer and analyser who assess the quality of the milk. AMUL collects from the AMCU. Slips are generated in the AMCU which carries the name of the farmer, her unique code, quantity, quality parameters and the amount. AMUL credits the amount within ten days to the farmers' bank account.

Since the formation of the centre, women have come forward with great enthusiasm. In this centre, Kasulamma is so far the biggest contributor to the association. She has poured 403 litres in 59 days and received Rs. 23,598. The second largest contributor is Jangam Rangamma who has poured 374 litres so far and received Rs. 20,477. She has four buffaloes of local breed. Jangam Rangamma is also one of the eleven promoters. They spread awareness about this collection unit and the benefits associated with it.

Since the amount received is

proportional to the quality of the milk, members are learning to take good care of their animals. Seven members had availed a loan of Rs.30,000 for providing better feed and maintenance of the buffaloes. They have also started giving their livestock AMUL feed and has found that it increases the amount of fat in the milk. About thirty one members have moved on to AMUL feed.

As part of creating awareness, milk samples are also collected from the non-members. The quality of that milk is assessed and based on the parameters the price of their milk is calculated. This is the amount of money they would have received, had they chosen to pour the milk in the ACMU. Some of them have expressed their desire to be the members of the unit after that.

Trainings are conducted to educate the farmers about the upkeep of animals. However, the farmers felt that one veterinary doctor per 25 villages is not enough to meet the demand

# INCREASING YIELD DROP BY DROP



So far an area of 13.43 lakh ha has been covered under Micro irrigation in all the 13 districts in the state



the state.

The cost of the micro irrigation system varies with the spacing of the crops and type of system.

**Dr.C.B.Harinatha Reddy,**  
Project Officer, APMIP, Guntur

**A**ndhra Pradesh Micro Irrigation Project (APMIP), a Special purpose vehicle set up in the State in order to streamline all the institutions responsible for Micro Irrigation scheme implementation on one platform, facilitates farmers to implement Micro Irrigation easily in the fields. With a staff structure till Village level, APMIP can effectively monitor utilization of Micro Irrigation scheme.

APMIP is primarily responsible for increasing the area under Micro irrigation through improved technologies and to enhance water use efficiency. Increasing productivity of crops and farmer income, savings in energy consumption and higher fertilizer use efficiency are associated

benefits of micro irrigation.

So far an area of 13.43 lakh ha has been covered under Micro irrigation in all the 13 districts in the state since inception i.e. from 2004-05 to 2021-22, benefitting 11.90 lakh farmers ,with a financial out lay of Rs. 6793.98 crores. There is a potential area of 8.24 lakh ha to be covered under Micro Irrigation in

## Crop diversification is the way forward

Farmers have diversified from traditional crops to high value remunerative crops like Vegetables, Melons, Banana, Papaya, Pomegranate, etc. due to the introduction of microirrigation

Adoption of Micro Irrigation integrated with technological interventions like Farm ponds, mulching, staking, shade net,

Additional area brought under Irrigation	- 18-20%
Productivity enhancement	- 35 to 60%
Electricity saved	- 35 to 40%
Fertilizer saved	- 40 to 45%
Labour savings	- 35 to 40%
Cost of cultivation	- 18% reduction
Gross income	- 32% Increase
Net income	- 75% Increase

tissue culture, fertigation and high yielding varieties as a holistic approach has made the horticulture sector remunerative and sustainable.

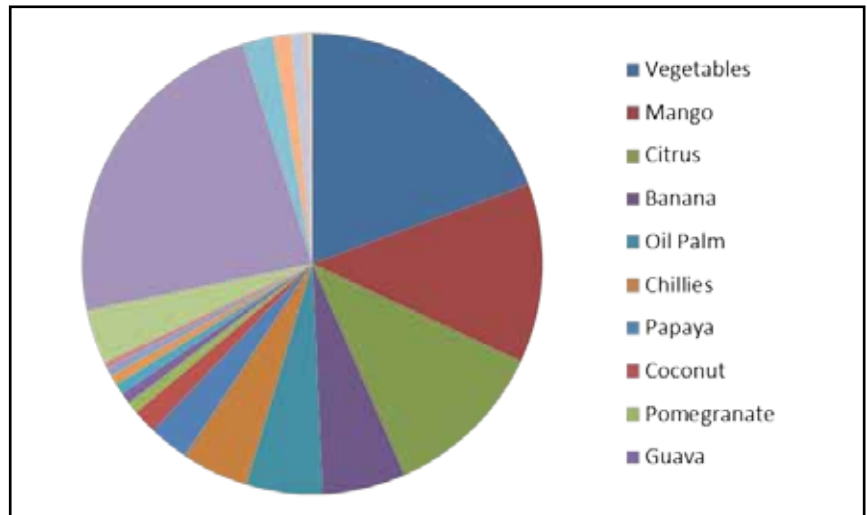
**Quality Micro Irrigation components**

All the micro irrigation components supplied under APMIP should have BIS and CIPET certification. In case of Online Drip system, a Manufacturer of Laterals (IS 12786:1989) & Emitters (IS 13487:1992) and in case of Inline drip system manufacturer of Emitting pipe (IS 13488:2008) should possess respective BIS standards. In case of portable Irrigation system, the manufacturer should be either coupled HDPE pipes or sprinklers and possess respective BIS Certificate. In case of other sprinkler irrigation system, viz. mini, micro sprinkler systems, the manufacturer should be either HDPE/PVC/PE pipes/nozzles and should possess respective BIS certification.

**Entire process of implementation is paper-less**

Farmers easily can register to avail micro irrigation through Mobile app

**Crop Wise Area Covered Under Micro Irrigation**



**All the micro irrigation components supplied under APMIP should have BIS and CIPET certification**

(APMIP), field staff of APMIP and Rythu Bharosa Kendras (RBKs) through Village Agriculture Assistants (VAAs) / Village Animal Husbandry Assistants (VAHAs) / Village Horticulture Assistants (VHAs)

/ Village Sericulture Assistants (VSAs). Farmers are given wide choice in selection of MI companies and registration process is Aadhar based through Biometric authentication of the farmers. The land details also have been integrated with webLand portal. The eligibility of the farmers to avail micro irrigation facilities will be known immediately during registration itself. At the time of sanctions and final inspections, geo – coordinates of water source and field will be captured. SMS alerts will be given to the farmers at every stage of implementation, and field inspections will be carried out by field staff. 15% of MI systems at random will be verified and evaluated by 3rd party agencies and quality testing of micro irrigation components will be done by Central Institute of Petrochemicals Engineering & Technology (CIPET). Information in telugu on Micro Irrigation system maintenance, fertigation and irrigation schedules has been provided in the APMIP web portal.

**Call center**

A call center has been established in the office of Project Officer, APMIP



with toll-free number: 1800 425 2960 for the purpose of redressal of grievances of the farmers, in case of a defective installations and lack of after sales service

**The Districts wise area covered under Micro Irrigation since inception**

Sl. No	District	Physical Achievement (Area in ha)		
		Drip	Sprinkler	Total
1	2	3	4	5
1	Srikakulam	11468	14295	25763
2	Vizianagaram	18496	10506	29002
3	Visakhapatnam	18199	11201	29400
4	East Godavari	28938	12012	40950
5	West Godavari	87770	16149	103919
6	Krishna	34993	16185	51178
7	Guntur	20599	23908	44508
8	Prakasam	70320	26809	97130
9	Nellore	39916	21565	61481
10	Chittoor	177306	18513	195819
11	Kadapa	169926	40819	210745
12	Anantapuramu	242228	86820	329048
13	Kurnool	70128	53404	123532
<b>Total</b>		<b>990284</b>	<b>352184</b>	<b>1342470</b>



Cultivation of Turmeric with Micro Irrigation by Sri. N. Pedda Gangi Reddy, Peddapalli, Siddhout, Y.S.R. Kadapa



Cultivation of Chilies with Micro Irrigation and Mulching by Sri.koli Krishna rao, Tantadi, Atchuthapuram , Visakhapatnam



### Impact of AP Micro Irrigation Project calculated based on 3rd party reports

S.No	Component	1 lakh ha	10 lakh ha
1	Water saving	15 TMC	150 TMC
2	Power saving 1,553 kWh/Ha Worth @ 4/ unit	1553 lakh kWh Rs.62 Crores	15,530 lakh kWh Rs.620 Crores
3	Labour saving 52 Mandays per Ha Worth @ 200/day	52 lakh Mandays Rs.105 Crores	520 lakh Mandays Rs.1050 Crores
4	Fertilizer saving 50 Kg / Ha	5000 Tons	50,000 Tons
5	Reduction in cost of cultivation Rs.21,500 / Ha	Rs.215 Crores	Rs.2150 Crores
6	Additional Net Income Rs.1,15,000 / Ha	Rs.1500 Crores	Rs.15,000 Crores

(Source: 3rd party report by NABCONS)

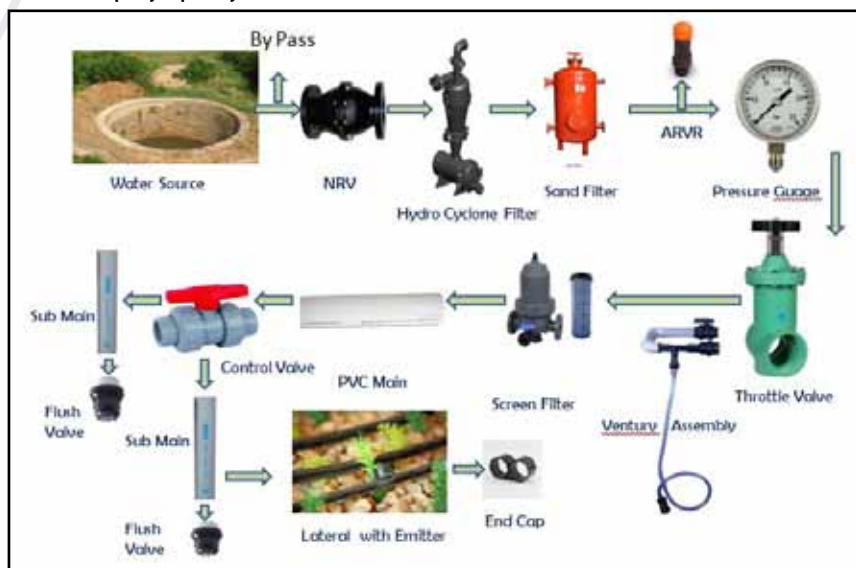
by micro irrigation companies concerned. An online module has been developed, so that if proper assistance is not given, the issue will be escalated to next higher authority for taking appropriate action.

### Training Programmes

Training programmes are being conducted regularly for micro irrigation farmers by integrating micro irrigation with agronomic practices and fertigation by involving technical staff of department and scientists from Agriculture and Horticulture universities. Key areas of training of fertigation, micro nutrient application, operation and maintenance of the system and adoption of latest package of practices under micro irrigation are covered in the training programme.

### After Sales Service campaigns

It is mandatory for the micro irrigation



companies concerned to organize regular service campaigns to render effective continuous after sales service to the farmers for a period of seven years

from the date of micro irrigation system installation systematically in such a way to cover all the farmers who have adopted micro irrigation.

**Subsidy Pattern**

Sl. No.	Category of farmers	(GoI) subsidy pattern (%)	State Share			Total % of subsidy
			Matching State Share (%)	Additional State share (%)	Total State Share %	
<b>DRIP IRRIGATION</b>						
1	SC/ST under SF/MF Category	33	22	45	67	100
2	SF/MF category other SC/ST	33	22	35	57	90
3	Medium farmers of Coastal Districts ( 5 to 10 Acres)	27	18	25	43	70
4	Medium farmers of Rayalaseema Districts (5 to 10Acres)	27	18	45	63	90
5	Others	27	18	5	23	50
<b>SPRINKLERS IRRIGATION</b>						
1	Marginal and Small Farmers (< 5 Acres)	33	22	10	55	45
2	Other famers (5 to 12.5 Acres)	27	18	10	45	55

The MI company concerned will provide detailed operational and maintenance manuals printed in Telugu language (farmer diaries) at the time of installation of the system to the beneficiaries, supply spare parts if any required by the farmers and ensure satisfactory performance of the system during the warranty period. The MI companies will provide technical guidance on system maintenance, fertigation and irrigation schedules.

After sales service campaigns being conducted in presence of farmers concerned, field staff both department and micro irrigation companies and the same will be uploaded in the APMIP web-portal. This activity is closely monitored by the Project Director concerned in the districts as well as by the office of Project Officer, APMIP.

**Way Forward**

The state government is committed to cover the balance potential area i.e., 8.24 lakh Ha in the next five years under Micro Irrigation.



# ATMA DISSEMINATING LATEST TECHNOLOGY AT THE EARLIEST

**E**xtension Reforms (Agriculture Technology Management Agency-ATMA) scheme is under implementation in thirteen districts of Andhra Pradesh to disseminate the latest technologies to farming community and also to address the gaps in adoption of technologies through Bottom up planning.

## Objectives of the programme

- To develop an efficient, effective, demand driven, research integrated and financially sustainable public extension system
- To revitalize the Agricultural Technology Generation Assessment refinement and Dissemination Systems
- Reforming Public Sector Extension. Promoting private sector to effectively complement, supplement and wherever possible to substitute public extension.
- Mainstreaming Gender Concerns in Extension.
- Capacity Building/ Skill up-gradation of farmers and extension functionaries.
- Increase the Quality and Type of Technologies being disseminated by the Extension System.
- Strengthen Research-Extension-Farmer (R-E-F) Linkages

## ATMA's Institutional set up

The Special Chief Secretary to Govt., Agriculture & Cooperation Department, as the Chairman, Inter Departmental Working Group and Commissioner of Agriculture, Andhra Pradesh as State Nodal Officer monitors the implementation of Scheme at State level. At District level, under the Chairmanship of the



District Collector; the Governing Board of ATMA looks after the implementation of the project activities. One separate Project Director in the Cadre of Joint Director and one Deputy Project Director in the cadre of Deputy Director deputed from Agriculture and other allied sectors observe the implementation of the ATMA project activities at District level. Besides this, in each block one Block Technology Manager and two Asst. Technology Managers support the implementation of the scheme. At present 74 Block Technology Managers and 54 Assistant Technology Managers are working in the districts.

## ATMA is a district level autonomous institution having membership of all key stakeholders

ATMA aims at Capacity Building/ Skill up-gradation of farmers and extension functionaries and strengthening of Research-Extension-Farmer (R-E-F) Linkages. It has the linkages with all the line departments, research organizations,

non-governmental organizations and agencies associated with agricultural development in the district and farmer organizations. Research and extension units within the district, such as KVKs, ZRSs, Department of Agriculture, Horticulture, Animal Husbandry, Fisheries, Sericulture, Marketing, etc. are its constituent members.

ATMA facilitates the preparation of Strategic Research and Extension Plan (SREP) of the district which contains detailed analysis of all the information on existing farming systems in the district and research – extension gaps required to be filled-up. Based on the research-extension strategies given in the SREPs, the Block / district level plans are developed and inturn consolidated to State Extension Work Plan.

The district level activities are categorized in four groups namely,

1. Farmer oriented activities: Include development of SREP, mobilization of farmer groups, training/ exposure visit of farmers, field demonstrations, all aimed at empowering the farmers and improving their participation in technology dissemination process
2. Farm information dissemination: Includes farm information dissemination, local level agricultural exhibitions, information dissemination through printed materials and development of technology packages in electronic form are covered
3. Research-extension-farmer (R-E-F) linkages: Includes R-E-F linkages based activities include organization of Farmer-Scientist Interaction at local level, organization of Field-days and Kisan Goshties and support for local level researchable issues emanated from the SREP.
4. Administrative expenses.





## Major focused areas

- Promotion of Millets.
- Importance of micronutrient management in field crops.
- Post harvest technologies in different crops.
- Organic Farming methods in different crops.
- Integrated Farming System.
- Crop diversification with high yielding varieties of Maize, Jowar, Bajra and Ragi as alternate to Paddy crop in tail end areas.
- Creating awareness on new paddy varieties.
- Poly cropping system.
- Growing pre Kharif Millets in upland areas.
- Inter cropping of Groundnut in Redgram.
- Line sowing in Groundnut with Gypsum application.
- Five layer model of cropping system.
- Promotion of Coconut, Cashew Nut, Oil palm and vegetable production.
- Promotion of Azolla production, fodder production and Silage making.
- Promotion of value addition to Fish and Prawns.
- Promotion of Bivoltine Silk worm and Chawki rearing.

Provide support for running ATMA and block level Farm Information and Advisory Centers.

### Adoption of Lessons learnt through ATMA and Scaling up

Field day will be conducted for each demo where neighboring farmers will be invited to participate and there by motivated to adopt the same technology in their fields working on the principle – 'Seeing is believing'. Farmers will be taken to exposure visit to places where technology has been successfully adopted motivating them to replicate same on the field. Achiever farmers will be invited to share their experiences during trainings and given an opportunity to disseminate their knowledge through farm schools.

### Selecting beneficiaries for different ATMA activities:

Beneficiaries are identified through Grama sabhas, awareness camps and training programmes. Mandal Agricultural Officers (MAOs) and Block Technology Managers / Asst. technology Managers will identify the farmers. Willing FAC members will also be identified. Under PPP mode NGOs will identify the beneficiaries.

### Innovative Activities identified

- Promotion of Integrated Farming System by growing of Horticultural crops and vegetables on farm pond bunds and Pisciculture in farm pond to assure regular monthly income for farmers
- Encouragement of Backyard Poultry

for additional income and balanced nutrition for the family through distribution of Kadaknath, Asil and rajasri chicks

- Encouraging establishing seed processing units
- Distribution of honey bee boxes and Extractors to promote apiculture for additional income to farmers
- Promotion of cultivation of super Napier grass for production of fodder for cattle all round the year.
- Encouragement of Terrace gardening for vegetable production for house hold consumption
- Distribution of incubators to promote backyard poultry
- Distribution of mobile shadenets for raising vegetables nursery
- Cultivation of perennial Redgram variety Columbo
- Promotion of minor millets like Korra and Variga before rabi Bengal gram.
- Inter cropping in Cotton and Orchard crops
- Promotion of mixed cropping/36x36 model
- Fodder grass production through Hydroponics cultivation
- Value addition to agricultural produce
- Varietal trails of newly introduced high yielding, disease and pest resistant varieties in different crops
- Soil test based fertilizer application.
- Management of pink boll worm in Cotton
- Training on Drudgery Reduction to farm women
- Cultivation of Tapioca on Sugarcane bunds

- Promotion of Farmers Producers Organisations

### Benefits of the programme

It helps in the development of well integrated technology and transfer system. It involves decentralized decision-making with bottom up planning. A financially sustainable extension system, ATMA has involved increased use of Information Technology. It also emphasise on In-Service Training and is keen on developing New Public-Private Partnerships. Strengthening Key Institutions is another important outcome of this programme. A Broad based extension delivery makes it more effective and useful

# COOPERATIVES CREDITING THE FARMERS



**Sri Y Madhusudhan Reddy,**  
Special Secretary to Government,  
Marketing and Cooperation

**C**ooperatives have traditionally been promoted and organized in a democratic and structural frame work for social and economic betterment of people. The department of Cooperation is mainly concerned with the administration of Andhra Pradesh Cooperative Societies (APCS) Act, 1964, the A.P. Mutually Aided Cooperative Societies (AP MACS) Act, 1995. At present 55,837 societies are functioning under the control of the Registrar of Coop. Societies, AP and 15,510 societies are functioning under the control of the Functional Registrars.

## **The three tier Rural Credit Cooperatives**

The Rural Credit Cooperative structure is a three tier structure with the



Andhra Pradesh State Cooperative Bank (APCOB) at the APEX level with 13 District Cooperative Central Banks (DCCBs) at the District level and 436 branches. 2049 Primary Agricultural Cooperative Credit Societies at village level provide credit and other services to farmers. During the year 2021-22, APCOB provided Rs.6397.82 Cr (Kharif Rs.5516.98 Cr and Rabi Rs.880.84 Cr) as Short term loans to farmers through the PACSs and DCCBs under Seasonal Agricultural Operations. An amount of Rs.2453.9 Cr to the DCCBs under Long Term Agriculture Credit as against the loaning programme of Rs.3495 Cr allotted to all the 13 DCCBs. An amount of Rs.172.51 Cr has been disbursed by the DCCBs to tenant farmers so far.

## Implementation of HR policy to PACS employees

Government issued orders for implementation of HR policy to PACS employees vide G.O.Ms. No. 36, A&C (Coop.IV) Dept., dt.01.03.2019 and G.O. Ms. No. 90 A&C (Coop.II) Dept., dt.04.12.2020. Operational guidelines and model service byelaws were issued to 1992 PACS affiliated to DCCBs in the State for adoption, out of which 1976 PACS adopted the Model Byelaws. Action is being taken to enable the APCOB and DCCBs to arrive the District Level Support Fund (DLSF) required to support the weak PACS for a period of 3 years.

## Revival Of Cooperative Societies

NABCONS Pvt. Ltd was engaged to study the existing structure and recommend reforms to revive the Cooperatives. The Consultancy firm submitted its recommendations on Governance, Business development and internal systems and procedures of Cooperatives. The corresponding draft amendments to the APCS Act, 1964 are presently being examined by the Government. A few recommendations on business development and internal procedures are being implemented.

## Utilizing Agriculture Infrastructure



## Fund

Government of AP with an objective to develop farm gate infrastructure at RBK level and develop PACS as Multi Purpose Facility Centers, proposed to avail the Central Government Agriculture Infrastructure Fund scheme through PACS in the State. NABARD approved Total Financial Outlay of Rs. 1,661.16 Cr, out of which, Rs.736.03 Cr sanctioned in the first phase to (1262) PACS and Rs.925.13 Cr sanctioned in the second phase to (1305) PACS. Under the scheme, along with Godowns construction, agri processing equipment are also being provided. Government provided support in the form of margin money (10%) loan and allotted lands on lease for godown construction. Out of (1166) RBK Godowns, 1158 (99.4%) sites have been allotted for the construction of Godowns and 340 sites grounded.

## Computerisation of PACS

Gol was contemplating a Centrally Sponsored Scheme for computerization and the Government of AP expressed interest to participate in the scheme. The GOI has proposed Rs.4.37 Lakh as the estimated cost for computerization per

PACS under the scheme with a funding pattern Central: State= 60:40. For 2049 PACS, the total cost for computerization would amount to Rs. 89.54 Cr out of which Rs.53.72 Crore is the Central share and Rs.35.82 Crore will be the State share. To establish the benefits of the vertical integration and using a common software across the three tiers, a PoC study was taken up by M/S TCS in 35 PACS and by M/s V soft in 3 PACS. Government has facilitated budget provision in the FY 2022-23 for the scheme.

## Integrated Cooperative Development Projects (ICDP)

ICDP is being implemented by the Department with the financial assistance of National Cooperative Development Corporation (NCDC) with a core objective of improving infrastructure facilities and to provide Margin Money assistance to the Cooperative Societies under various sectors. ICDP Scheme under Phase-I (1989-2016) was implemented in all Districts in the State with outlay of Rs.168.39 Crores. The NCDC has sanctioned ICD Projects under phase II for three Districts with total project outlay for 5 years of Rs.609.39 Crores i.e. in

East Godavari Rs. 198 Cr., Kurnool Rs. 180.22 Cr and Chittoor Rs.230.72 45 Cr. On implementation of the three Projects during the project period, it is estimated that 473 PACS and 1,34,922 members would be benefited.

### Coop. Urban Banks (CUBs)

The objective of the Coop. Urban Banks is to promote thrift by attracting deposits from members and advance loans to the members. There are 46 CUBs working at present with 7,65,300 members having a total turnover of Rs. 18,369.64 Cr. and deposits of Rs. 10,204 Crs.

### AP State Co-Operative Union:

A.P. State Co-Operative Union is an Apex Cooperative institution in the field of Cooperative Education and Training for awareness, building and propagation of Cooperative Principles and Cooperative Movement in the State. The Union is publishing a Cooperative monthly magazine titled as "Sahakaara Samaachaaram"

### AP State Co-Operative Rural Irrigation Corporation Ltd

The AP State Cooperative Rural Irrigation Corporation Ltd., undertakes drilling of bore wells and checkdams etc. in Agriculture sector. This is also a "Nodal Agency" for construction of Farm ponds in Horticulture fields.

### Andhra Pradesh Cooperative Tribunal (APCT)

APCT, Vijayawada is constituted as per the provisions of Section 75 of AP Cooperative Societies (APCS) Act, 1964 to provide a forum of appeal on decisions, orders or awards passed by the Quasi-judicial Officers of the department. It is also having original jurisdiction over the disputes filed under AP Mutually Aided Cooperative Societies Act, 1995.

### Marketing Cooperative Societies(DCMS)

There are 13 District Cooperative Marketing Societies (DCMSs), which supply agriculture inputs, procure



agricultural produce to enable farmers to get minimum administered prices on behalf of APSDC, APMARKFED besides local consumer business. As on 31.12.2021 the total Share Capital is Rs.404.83 Lakhs and having a business turnover of Rs. 35336.46 Lakhs.

### APMARKFED

AP MARKFED, an apex organization for the Cooperative Marketing Societies (CMS) in the State, offers its services to the PACS and RBKs at the primary level and it is the State Nodal Agency for the fertilizers. AP MARKFED played a key role in creation of Price Stabilization Fund with Rs.3000 Cr to protect farmer interest and MSP for certain crops and undertakes procurement of other commodities under commercial account every year depending upon the market situation. "MARKUP", a consumer outlet was also established.

### Rashtriya Krishi Vikas Yojana (RKVY - RAFTAAR)

Rashtriya Krishi Vikas Yojana - Remunerative Approaches for Agriculture and Allied Sector Rejuvenation (RKVY - RAFTAAR) is a flagship programme of the Government of India with 60% grant by the Central Government and 40% grants by the State Plan Scheme for construction of Godowns by PACS. An amount of Rs. 50.00 lakhs was released to the Nellore District, Kammavaripalem PACS.

### Consumer Cooperative Stores & weaker section societies

At present there are 259 Consumer Cooperative Stores, 1821 Primary Level Labor contract societies and 364 Primary Level Coop. Joint Farming Societies are functioning in the State. State level federations are under liquidation.

### Mahila Dairy Sahakara Sanghalu (MDSS)

The flagship programme for the Government – Jagananna Paala Velluva Project was launched on 02.12.2020 to strengthen the dairy cooperative movement in 16507 villages to offer the best possible price to the dairy farmers and the project and is targeted to be completed by September 2022. The Government has decided to form, register and nurture the Mahila Dairy Sahakara Sanghalu in 4796 villages and allot 5 cents of Government land for construction of building worth Rs.20.42 Lakhs each under MGNREGS for establishment of Bulk Milk Cooling Units (BMCU) centers. Automatic Milk Collection Centers are contemplated in 11711 villages for ensuring transparency in milk procurement and payment of milk bills in partnership with Amul. So far the activity was initiated in seven districts - Chittoor, YSR Kadapa, Prakasam, Guntur, Krishna, West Godavari & Anantapuram and collected 229.64 lakhs liters of milk from 39473 farmers in 1741 villages. An amount of Rs.101.19 Crores was directly paid into the accounts of the women farmers as on 28.02.2022 on a 10 day payment cycle completely eliminating the role of the middlemen with the support of a software system developed exclusively for the purpose.

### AUDIT

For the year 2020- 2021, (16838) Cooperative Societies were programmed for audit, of which (5430) are under aided category and remaining (11408) un-aided category. Audit of 4968 Aided Societies and 10706 Un-Aided Societies have been completed as on 28.02.2022.

## DR YSR AGRI TESTING LABORATORY, KANKIPADU, KRISHNA

The constituency level integrated laboratory at Kankipadu conducts testing on Seed and Soil. In this lab RBK samples, farmer samples and trade samples are tested. Germinator, hot air oven, blower, microscope are some of the equipment available here. In this laboratory mainly three parameters are tested for seeds— physical purity, germination and moisture test. “Mositure test is only conducted if the seeds are bought in polythene sheets. Nitrogen, Phosphorous, Potassium, Calcium, Sulphur and micronutrients are tested here. Advanced Kjeldahl unit has made the testing for Nitrogen and Phosphorous estimation easy and accurate”, says Ms. Supriya, Agricultural Officer in charge here.

The lab does not undertake pesticides testing . It merely acts a



collection center. The samples of pesticides collected here will be sent to the district level labs.

Besides this, an aqua lab is also functioning in the premises. Water parameters for fisheries are tested here. Nitrite, ammonia, calcium, magnesium etc are some of the attributes tested here.

On an average about forty samples

are received by this laboratory. With many advanced instruments, the results get ready within an hour or two which is either disseminated to the farmers virtually or physically.

A fish seed analysis laboratory is also functional here. Autoclave, Laminar air flow, distillation unit, hot air oven adds to the infrastructure of the laboratory.

## COMMUNITY HIRING CENTERS, PEDA AVUTAPALLI, UNGUTURU MANDAL, KRISHNA DISTRICT

The idea of Community hiring centers in the RBKs was mooted to enhance the adoption of machinery at farm level. It ensured distribution of farm implements at village level and motivated the farmers in adopting modern technology to overcome dearth of labour. So far, 2348 CHC groups have been constituted and implements were distributed to the tune of Rs 89.06 Crores.

There are two groups of CHCs in the village, Peda Avutapalli – Rythu Nestam and Rythu Raju. Rotavator, 9 Tyne cultivators and sprayers can be hired from Rythu Nestam. Rotavators are available at Rs. 600 per hour, Rotavator at Rs.400 per hour and Sprayer at Rs. 200 per hour. Five members have constituted this group, Rythu Nestam which translates into 'Farmer Friend'. Currently there are two units of rotavator, one unit of cultivator and two sprayers available within the group. These implements are housed in a separate premise away from RBK due to



the space constraints in the rented RBK. Tractors are not currently given through this scheme, while the group has been demanding inclusion of tractors also.

Rythu Raju (Farmer King) is located in a different location. The implements are housed inside a large shed constructed by the group. The shed houses two units of Rotavator, one unit of 9 tyne cultivator and two sprayers.

# MILKING OPPORTUNITIES IN AP'S DAIRY SECTOR

**T**he residuary state of Andhra Pradesh is predominantly an Agro based state where 34% of the states GVA is from Agriculture and allied sectors (Rs.3,36,442 Cr out of Rs.9,86,611 Cr). The contribution of livestock sector to the state economy is estimated at Rs:1,12,972/- Cr. at current prices as per advance estimates for the year 2020-2021 which is 11.45% of the state GSDP and 33.58% of Agri sector GSDP. The value added to the state economy from milk alone is Rs.58,006 at current prices for the year 2020-2021. The annual milk production of the state is estimated at 150.54 lakh Metric Tonnes for the year 2021-2022 and Andhra Pradesh is the 4th largest milk producing state in the country.

The income generated from milk is a primary source of livelihood to the majority of farmers in rural areas of North Coastal districts and Rayalaseema districts. The predominant cattle population in North Coastal districts and Ananthapur & Chittoor districts of Rayalaseema area is cow population whereas, the cattle population of the remaining districts of the state is dominated by Buffalo population. About 65% of milk produced in the state comes from Buffalo population and 24% of milk produced in the state is under organized sector.

The dairying activity in Andhra Pradesh is primarily handled by women folk in rural areas. The dairy cooperatives in dairy sector during early eighties used to offer livelihoods to the several poor and landless labourers in rural areas. Even today the sector offers primary source of income to the several rural families



**Dr A Babu, IAS – MD, Andhra Dairy Development Board**

in districts like Chittoor, Ananthapur, Srikakulam and Vizainagaram. The cooperative dairying in eighties has demonstrated its strength and the milk procured through cooperatives was popular through “Vijaya Brand” throughout the country.

After globalization and liberalization, several private players have entered the

dairy business and due to competition among the private dairies, the cooperative dairies which played significant role in the rural economy were systematically ruined and the activity in cooperative sector had received further setback following the State bifurcation issues. Consequent to the decision at the highest level in government for revival and strengthening



SL	District	Lakh Litres Per Day									
		Dairies		UHT Plants		Powder Plants		MCC's		BMCU's	
1	Ananthapur	1	0.50	-	-	-	-	1	0.20	41	1.19
2	Hindupur	1	0.50	-	-	-	-	1	0.20		
3	YSR Kadapa	1	0.30	-	-	-	-	-	-	22	1.22
4	Prakasam	1	3.50	-	-	1	3.00	-	-	8	0.26
5	West Godavari	1	0.50	-	-	-	-	-	-	27	0.91
6	East Godavari	1	0.30	-	-	-	-	-	-	13	0.58
7	Chittoor	1	0.50	1	0.80	-	-	-	-	17	0.70
8	Krishna	1	0.50	-	-	-	-	-	-	13	0.63
	<b>Total</b>	<b>8</b>	<b>6.60</b>	<b>1</b>	<b>0.80</b>	<b>1</b>	<b>3.00</b>	<b>2</b>	<b>0.40</b>	<b>141</b>	<b>5.49</b>

To support the Women Dairy Cooperatives for their sustainability and to enable the societies to procure only quality tested milk besides making local arrangements to chill the milk immediately after its collection to prolong its self-life, the Mahila Dairy Sahakara Sanghalu are assured with the following support from the State Government:

- 5 Cents of land for BMCU centre free of cost
- 3.5 Cents of land for AMCU centre free of cost
- Rs:20.42 lakhs grant assistance for construction of BMCU building.
- Rs:12.81 lakhs grant assistance for construction of AMCU building.
- Rs:11.00 lakhs per BMCU centre as counter guarantee to avail loan under DIDF for setting up of BMCU & AMCU equipment
- Rs:4.00 lakhs per AMCU centre on counter guarantee to avail loan under DIDF for setting up of AMCU equipment.

This support is given to the MDSS by the Government to create an enabling environment at society level to ensure clean milk collection in order to fetch the best possible price to its milk producers.

of cooperatives in dairy sector, 9899 Mahila Dairy Sahakara Sanghalu are proposed to be promoted throughout the state in Milk Potential Villages involving Women dairy farmers.

### AMUL enters into an MoU with the State Government

An MoU with Amul was signed by the State Government in the month of July 2020 to get marketing support from Amul for the milk procured by the Mahila Dairy Sahakara Sanghalu. To increase the marketability of the milk procured by the societies, the State Government has also entered into further MoU with Amul to make use of the milk procured by the Mahila Dairy Sahakara Sanghalu for production of UHT milk locally to meet the requirement of 107 lakh ltrs of UHT milk for supply to 30 lakh Children & Women

through 55,607 Anganwadi centers in the state under YSR Sampoorna Poshana and Sampoorna Poshana Plus schemes.

The 107 lakh litres of vitamin fortified UHT milk which was hitherto being procured from KMF, Bengaluru every month can now be locally produced henceforth for supply to the target group in Anganwadi centers consequent to the MoU signed with Amul.

The State Government has also decided to make use of the following dead and idle dairy infrastructure of APDDCF which has turned into NPAs for years together with a lease agreement with Amul for revival and utilization of the assets to process the milk procured by Mahila Dairy Sahakara Sanghalu locally in order to reduce the overheads.

### Connecting the Dots with Technology

Arrangements have been made at MDSS with latest equipment with provision for real time data transfer to procure milk only after on-the-spot testing of sample milk. Based on the test results the price payable to the milk pourers is decided by the system without manual intervention. Ultra High Milk Analyzers at strategic locations help to check adulteration of milk. Bulk Milk Cooling Units of different capacities are also being setup at strategic locations to check souring of milk, spoiling & its consequent rejection. Appropriate IT solutions has helped to effect payment of milk bills directly to the bank accounts of the milk pourers once in 10 days which has eliminated middle men in the payment process.

### Financial Assistance for Better Maintenance

Working capital loans of Rs:30,000/- per head is being arranged to meet the finance required for maintenance of animals. An amount of Rs. 17.02 Crore was so far sanctioned as working capital loans from cooperative and commercial banks to support 3623 milk pourers in the state. Similarly, milk pourers have also been supported with 7372 Quintals of quality feed supply under input distribution programme through Mahila Dairy Sahakara Sanghalu on cost to cost basis at an estimated cost of Rs: 157.02 Cr.

# SERICULTURE SPINNING SUCCESS STORIES

**S**ericulture is an important Agro-Industry based activity of Andhra Pradesh. The major activities of Sericulture comprise of cultivation of Mulberry as food plant to feed the silkworms which spin silk cocoons. These cocoons are reeled for unwinding the silk filament by processing and weaving to value added products such as Silk fabric and Silk garments. Sericulture provides livelihood opportunity to millions, owing to its high employment potential, low capital requirement and remunerative income at frequent intervals. Sericulture assures an average income of Rs.1,25,000/- per acre /annum.

Andhra Pradesh produces Mulberry and Tasar Silks. Andhra Pradesh is the 2nd largest Raw Silk producing state in

Mulberry Extent	1,24,983 Acres
Farmers	70,702 Nos
Tasar extent in Tribal area	3000 Hectors
Tasar farmers in Tribal area	1770 Nos

the country, next to Karnataka.

## Sericulture Milestones during 2021-22 (Upto December – 2021)

- An area of 6576 Acres has been newly brought under Mulberry cultivation during the year 2021-22. The total Mulberry gardens have thus reached 1,24,983 acres in the State.

- 8033.3 MTs International Quality Bivoltine cocoons were produced
- 1164.84 MTs of 2 A& above Grade Raw Silk was produced
- 47, 949 MTs of Reeling Cocoons (BV +CB) were produced by the Sericulture farmers



**Mrs C Aruna Kumari, Additional Director of Sericulture**

- 655 new Silkworm Rearing ARM unit were sanctioned under “Silk Samagra” during 2021-22. Establishment of the units are in process.
- 655 new Silkworm Rearing Sheds have been grounded during 2021-22 extending Sericulture activity in the State.
- One (400) ends Automatic Reeling Machine unit and one (200) ends

ARM unit were sanctioned under “Silk Samagra” during 2021-22. Establishment of the units are in process.

- Under SILK SAMAGRA, Rs.1771.378 lakhs received from Central Silk Board (CSB), Bengaluru and

## Tree Mulberry Plantation for Water Scarce Area (8'x8')



**FARMER: Sri Janardhana Reddy, Peddabommanapalli (V), Chittoor Dist.**

### Interventions of the government to increase Sericulture in the state

- Area expansion in Sericulture Potential (1250) RBKs through VSAs / VAAs / VHAs.
- Intensive Training to the farmers through RBKs.
- Dovetailing with MG-NREGS and APMIP.
- Creating demand for the Cocoons through establishment of Multi-End Reeling Units (MERUs)
- Establishment of Automatic Reeling Machines (ARMs) under Private sector.
- Integration of Reeling and twisting activities to increase profit margin to the entrepreneurs in production of Raw Silk to meet indigenous demand.
- Implementation of e-marketing in cocoon transactions at Government Cocoon Markets.



Matching State Share of Rs.844.093 lakhs were received towards implementation of various growth sector schemes for the benefit of farmers and reelers in the State

- Under State Development Schemes sanctions were obtained for Rs. 1228.79 lakhs towards implementation of developmental schemes for Sericulture Farmers, Reelers and Twisters

- MGNREGS is implemented under convergence activities and incurred an expenditure of Rs.7.87 Crores under Sericulture works towards wages and Material components

- 26.80 lakh Tasar reeling Cocoons were produced by the Tribal farmers in the sub- plan areas of East Godavari district earning income of Rs.76.91 lakhs.

### Sericulture Schemes

Different schemes including State Development Schemes (SDS), Centrally Sponsored Schemes like SILK SAMAGRA, Rastriya Krishi Vikas Yojana (RKVY) and Convergence schemes like Mahatma Gandhi National Rural Employment Guarantee (MG-NREG) programmes are being implemented.

### Innovative Sericulture Practices

Farmers are supplied with 100 % Chawkie worms. Through Chawkie Rearing technology farmer can get good, uniformly grown, healthy silkworms and the duration of the silkworm crop with the farmers level is 17 to 18 days only , This impacts the qualitative and quantitative cocoon yield.

Turbo Ventilators & Cooling systems installed in the Rearing Sheds helps in the maintenance of required temperature and humidity during Silkworm Rearing for production of Cocoons.

## Present Status Of Sericulture In Andhra Pradesh During The Year 2021-22 Up To December-2021

S I . No.	Item	Unit	Present Status up to December -2021
1	2	3	4
1	Mulberry Plantation	Acres	1,24,983
2	Sericulture farmers	Nos.	70,702
3	Mulberry Cocoon Production	MTs	47,949
4	Raw Silk Production	MTs	6,487
5	Productivity	Kgs/100 DfIs	75
6	Tasar Cocoon Production	In Lakh Nos	26.80
7	Automatic Reeling Machines Established (ARM)	No. of ends/units	5000 ends - (8) units
8	GVA Realized	Rs. in Crores	855.18

It is proposed to cover 12,000 acres of Mulberry plantations, to produce 76,767 MTs of Cocoon (CB+BV), 10,414 MTs of Raw Silk (CB+BV) and 45.00 Lakh Tasar Cocoon during the year 2022-23.

Shoot rearing system, another intervention has helped farmer in saving time and reducing 40% labour requirement during late age silkworm rearing. Mulberry leaf is also saved up to 15-20% in shoot rearing method. This technology is widely adopted by the farmers.

### Sericulture and R.B.KS:

All VSAs of R.B.Ks are involved in expansion of Mulberry area. RBK acts as the Platform for Technology dissemination to Farmers. Dr.YSR Pattubadi programmes are being organized by the Department Officers with progressive

Sericulture farmers at RBKs. Technical Service Centre (TSC) Staff are organizing Demonstrations and Farmers Meets on innovative technologies.

### Tasar Culture in Andhra Pradesh

Tasar culture is Forest based industry and silk worms are reared in the Forest on Nalla Maddi and Thella Maddi trees (Terminalia arjuna and Terminalia tomentosa) in East Godavari District. It is reared in 3,000 Ha of forest area by 1,770 tribal farmers in 45 villages of Chinturu, Kunavaram Mandals in East Godavari district.

Three Crops can be reared in a year . 50.00 lakh Tasar Cocoons can be obtained resulting in an annual income of Rs.30,000/- to Rs.40,000/- per tribal family. Tasar cocoons are converted into Tasar silk through "Buniyad reeling machines" & Spinning machines. 78 Buniyad and 55 spinning units are functioning in Chinturu and Kunavaram Mandals of East Godavari dist.

### Sericulture Handicrafts made with Cocoons

The Department has also encouraged rural women by training for preparation of Handicrafts such as Garlands, Bouquets, Flower pots etc., through Sri Padmavathi Mahila University, Tirupathi under IOT project.

### Implementation of e - Marketing System in Cocoon Markets:

- Eight Government Cocoon Markets function throughout the year, except on two National Public Holidays, i.e., Republic Day and Independence Day.
- Transparent auction procedure.
- Assures competitive and higher prices to Farmers.
- Equal opportunity to all Silk Reelers (Buyers).
- Global platform for the Cocoon transactions.
- Andhra Pradesh is the 2nd State next to Karnataka in introducing e-marketing.

# Success Stories



Sri DR Sathyanarayana, of Chittoor District earns Rs.50.00 Lakhs to 60 Lakhs per annum from 12 acres of Mulberry Garden with Brushing capacity of 1500 DFLs per month. He has been generating employment to 15 families throughout the year. He is also motivating and training other farmers to take up Sericulture and has paved way to develop V.Kota of Palamaner constituency, Chittoor district as the best Bivoltine Sericulture Cluster at National level. Sathyanarayana has received many awards from State and Central Silk Board of Ministry of Textiles, Govt. He had introduced automation in both Mulberry Plantation and Silkworm Rearing for qualitative and quantitative

improvement in Bivoltine Cocoon production. He also pioneered in converting Silkworm Rearing Waste into organic manure for improvement of Soil fertility in Mulberry Garden. Even in severe drought conditions and fluctuations in cocoon prices, he continued Sericulture activity. He has inspired hundreds of farmers throughout Andhra Pradesh, Telangana, Karnataka and Tamil Nadu to take up Sericulture activity as corporate farming.

Sri M.Venkatarami Reddy of Anantapuramu District, earns Rs.15.00 Lakhs - 20 Lakhs per annum from 4 Acres, (2 Acres Mulberry Bush Plantation and 2 Acres Mulberry Tree Plantation). Initially he started practicing Sericulture activity in 2 acres of land since 1970. He started Silkworm rearing with Cross



Breed Silkworm races and later moved to Bivoltine rearing (Japanese Silkworm Race). A post graduate in Geology, he was Sericulture Activist since 1985, and has been motivating farmers to take up Sericulture and striving for stabilization of Cocoon Prices. He played a key role in mobilizing Sericulture Farmers Associations of various states in enhancing anti-dumping duty (Custom duty) on Silk Import from China to increase cocoon prices. Many a times he had coordinated farmers and reelers to run the Market activities smoothly and in payment of remunerative cocoon prices to farmers. He had been a social activist working on water conservation in drought district like Anantapuramu. To overcome drought situation, during 2019, he has taken up Tree Mulberry Plantation in another 2 acres. He is Andhra Pradesh State Sericulture Farmers Association President for the past 20 years. He acted as Member of Research Advisory Committee of Central Sericultural Research and Training Institute, Mysore, Central Silk Board, Ministry of Textiles, Govt. Presently, he is a Member in Research Advisory Committee of Andhra Pradesh State Sericulture Research and Development Institute, Kerikera, Hindupur, A.P.



## DR. YSR THOTABADI, MANGALGIRI TALUK, NUTAKKI VILLAGE, GUNTUR DISTRICT

**T**hottabadi are farmer field schools focusing on horticultural crops, where farmers are introduced to new technologies which enable them to reduce cost of cultivation and increase production, productivity and quality of the produce. Before organizing thottabadi programmes, village horticulture assistant is entrusted with the responsibility of identifying progressive farmers of the area. With the assistance of the progressive farmers, the village horticulture assistant identifies the core crops grown in the area. Problems faced by the farmers are also identified in village level meetings. A baseline survey is conducted by the group of farmers to understand the prevalent crop cultivation practices right from sowing to harvesting. A parallel is drawn with the scientific practices prescribed by the scientist. The gaps between the two are identified. Thottabadi programme is mainly concerned about the gaps and it strives to close the gaps.

In Nutakki village, turmeric being an important crop the village horticulture assistant was able to identify several gaps. In turmeric, seeds form an important component in terms of cost of cultivation. Total Cost of cultivation of turmeric crop per acre is Rs.1,25,000. 60-70 per cent of the cost is mainly incurred by seeds, and in post harvest operations such as harvesting and boiling and polishing the harvest. 25 per cent goes to the cultivation practices, fertilisers etc.

Turmeric with high Curcumin content fetches better price in the market. The department therefore identified and introduced farmers of this thottabadi to new varieties of turmeric that were high in Curcumin content. Salem varieties, BSR 2, Rajendra sonali, pragati thus became familiar to the farmers.

The thottabadi could also bring in marked changes in the cultivation practices of turmeric farmers. In traditional methods, 1000-1200 kg per acre seed material was used by the farmers. In improved methods where turmeric is planted in raised beds, only 700 kg of seed material was required. This saved around 300-500 kg of seed



material and farmers thus saved around Rs. 12,500 per acre (Rs. 25/Kg).

A major problem of the turmeric farmers especially in the rainy season in the low lying areas is the rhizome root rot and attack by rhizome weevils. Seed treatments can effectively manage the problem. Since the farmers in the village were interested in pursuing organic cultivation they were sensitized about the seed treatment with Beejamritham.

Bed making which is now prevalent among the turmeric farmers, were also introduced through the thottabadi programme. The farmers here use a bed making machine which was developed by Sivaram Reddy, a fellow farmer, who is a keen observer of technologies and who has made it a habit of modifying the existing machines to incorporate the new intervention which he gets acquainted through exhibitions or other sources. Bed preparation was able to reduce rhizome rot and weevil.

Drip irrigation has also been established in the fields. Sunnhemp is broadcasted in the field which after incorporation in the soil adds manure and checks weed growth. They use Panchagavya, biofertilisers, biofungicides, biopesticides and Neem Cake in the field. When the farmers were using the traditional methods, around 60-65 labourers were required for harvesting operations. But with large scale adoption of harvesting machines, half of the number is enough and savings of Rs.7000 per acre has been recorded.

Another major intervention of the thottabadi programme in this area was the post harvest operations. Turmeric rhizomes are conventionally dried in open sun after

cooking them in boiling water. It generally takes 25-30 days for the whole operation. The thottabadi programme introduced steam boiling method where water does not come into contact with rhizomes and the number of days required to dry the rhizomes is drastically reduced to 15. Moreover, this method has been found to increase the Curcumin content in turmeric to 5-6 per cent against the conventionally produced one which falls below 2 per cent. Polishing drums and powder making machinery are locally used for further processing. The organic farmers in the region have branded their turmeric powder under the name "KK Organics" [K-Kallam (farmer's surname); K-Kothapalem (village name)] and are sold at marginally higher prices than the normal ones.

The farmers are in the second year under the PGS organic certification programme which is a quality assurance initiative that is locally relevant, emphasize[s] the participation of stakeholders, including producers and consumers, and (which) operate[s] outside the framework of third-party certification. From third year onwards, their products will be certified fully organic.

The farmers in this group underwent nine days trainings under Subhash Palekar. Subba Reddy along with 8-10 farmers who cultivate in a participatory approach in 40 acres of land believes conventional farming using chemical fertilizers have damaged the soil. "Every year we have to increase the amount of fertilizers. Organic method has also raised the Curcumin content. We haven't found any decline in the yield after following organic method. Cost of cultivation has also reduced."

# REGIONAL AGRICULTURAL RESEARCH STATION, MARUTERU SERVING THE NEEDS OF THE RICE GROWERS

**R**egional Agricultural Research Station, Maruteru situated in typical deltaic soils of West Godavari district of Andhra Pradesh, is the lead centre for rice research in the state and has played a major role in attaining food security of the country, by virtue of its rice varieties and technologies developed. RARS, Maruteru has the credit of developing 60 rice varieties and two rice hybrids including development of the first BPH resistant variety, Vajram (MTU 5249) in the year 1986 and rice hybrids, APHR 1 and APHR 2 in 1993 for first time in India. The rice varieties, Swarna (MTU 7029) released in 1982, Vijetha (MTU 1001) in 1995 and Cottondora sannalu (MTU 1010) in 1999, Sri Dhruthi (MTU 1121) in 2015,



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Madhya Pradesh, Uttaranchal etc. The varieties have also spread to neighboring countries, namely, Sri Lanka, Nepal, Bangladesh and the rice growing African countries. In addition to the above, the rice production and protection technologies developed by this institute accounts for additional benefit to the farming community of the state. Annually, the Institute earns more than Rs.1 Crore revolving fund through the sale of paddy seeds.



Indra (MTU 1061) in 2006, Amara (MTU 1064) in 2009, Tarangini (MTU 1156) in 2016 and Chandra (MTU 1153) in 2015, occupy approximately 25 per cent of total rice area cultivated in the country. With the release and spread of these varieties across the country, rice productivity has been increased considerably.

About 91.63 per cent and 86.33 per cent of the total rice cropped area of Andhra Pradesh State during Kharif and Rabi seasons, respectively, is occupied by Maruteru varieties. The rice varieties are popular in ten states of the country, namely, Tamil Nadu, Karnataka, Telangana, Odisha, West Bengal, Maharashtra, Chhattisgarh, Uttar Pradesh,

**Dr. Jogi Naidu**

## **Development of Organic Package**

Development of organic package in rice started in the year 2008 at RARS, Maruteru under RKVY Programme. During which organic package was imposed with 100% RDN basis organics and organic plant protection was used. Results on organic farming was found promising. Organic nutrient management recorded similar yields as that of inorganic fertilization treatment during Kharif season only. A package was developed for organic farming during *Kharif* season. However, more insight is required on use of organic package in high nutrient demanding *Rabi* season.

Studies on management of plant hoppers (BPH & WBPH) using ecological engineering methods is also be-

ing practiced at RARS, Maruteru since 2010.

#### RARS's Technological Interventions

- Development of burrow smoker- a small compact unit designed and developed by RARS, which utilizes farm wastes like paddy straw for smoking the burrows of rodents with the help of blower.
- Development of ecological non-chemical rodent management technology called Trap Barrier System (TBS) against rodents in rice by manipulating the rat behaviour, which provides 90-100% protection to the crop present inside the TBS and >40% halo protection on the surrounding crop.
- Development of cheap and effective Bait stations with locally available material such as Coconut shell & PVC pipes for effective and safe delivery of poison baits and sustained baiting against rodents.
- Development of Low cost solar fencing against *Macaques* and wild boar in crop fields
- Identification of new resistant donor, MTU IJ 206-7-4-1 (BM 71) for brown plant hopper (BPH) resistance
- Development of dormancy breaking technique in rice for the first time in the country with 0.63 % nitric acid solution.
- Recommendation of Farm Yard Manure + Vermicompost + Neem Cake in equal proportion for improvement of the soil organic carbon content and soil health
- Identification of the remunerative Cropping systems module of Rice-Sweet corn, Rice-Marigold and Rice-Black gram system for Godavari Districts of the state to overcome the problem of irrigation water during Rabi season as part of the crop diversification program
- Establishment of IFS model suitable for wet land cultivation for small and marginal farmers at RARS, Maruteru during 2017-18.

#### RARS Maruteru's Famous Rice Varieties

**Swarna (MTU 7029)**, a high yielding, low input variety, is cultivated widely in other states viz., Uttar Pradesh, Uttaranchal, Bihar, Chattisgarh, Madhya Pradesh, Jarkhand, West Bengal, Orissa and Maharashtra and as well in other Asian Countries viz., Bangladesh, Sri Lanka, China and Myanmar. Swarna is the major rice variety grown in Bangladesh. In Andhra Pradesh, it is cultivated in 2,98,711 ha. and in Telengana, in 1780 ha.

**Vijetha (MTU 1001)** is cultivated in Uttar Pradesh, Uttaranchal, Maharashtra, Bihar, Orissa, Karnataka, Chattisgarh, Jarkhand and Madhya Pradesh

**Cottondora Sannalu (MTU 1010)** has found place in Maharashtra, Orissa, Karnataka, Chhattisgarh, Jharkhand and Madhya Pradesh

**Prabhat (MTU 3626)** is a bold grain type with high yield potential. It is preferred by millers due to its export potential as parboiled rice to Kerala and other regions of the country.

**Indra (MTU 1061)** is a fine grain variety tolerant to BPH and BLB with high yield potential with salinity tolerance.

**Pushyami (MTU 1075)** is a fine grain variety with high yield potential and tolerant to neck blast, sheath rot and non-lodging and can be cultivated both in Kharif and Rabi seasons. This variety was released by the Central Variety release Committee and recommended for cultivation in Andhra Pradesh, Maharashtra, Gujarat and Tamil Nadu.

**Amara (MTU 1064)** is a fine grain variety tolerant to BPH and BLB with high yield potential and can also withstand flash floods.

**Chandra (MTU 1153)** is a high yielding, non-lodging short duration variety with multiple resistance, 2 weeks dormancy and high HRR. This variety is released by CVRC for the states of Kerala, Karnataka, Tamil Nadu, Maharashtra, Madhya Pradesh, Chhattisgarh, Bihar and Punjab.

**Sri Dhruthi (MTU 1121)** is a high yielding, non-lodging short duration variety resistant to BPH and blast with good cooking quality. This variety is highly suitable for direct seeded conditions and most suitable variety for machine planting and harvesting.

**Tarangini (MTU 1156)** is a high yielding, non-lodging short duration variety with multiple resistance, 2 weeks dormancy and high HRR. This variety is released by SVRC for the state of Andhra Pradesh.

**Varsha (MTU 1223)**, a long duration variety with 145-150 days duration, with moderate resistance to BLB, blast and stem borer was identified for release as Varsha for the Rainfed shallow lowland areas in the states of Odisha and Bihar during 54th ARGM held at NRRI, Cuttack in 2019.

**Sravani (MTU 1239)**, a medium duration rice variety with 140 days duration, non-lodging, medium slender grain with test weight of 20.5 g, moderately tolerant to BPH and BLB was identified for release as Sravani in the states of Andhra Pradesh, Tamil Nadu and Maharashtra during 54th ARGM held at NRRI, Cuttack in 2019

**Sujatha (MTU 1210)**, a high yielding culture having 125 days in Rabi and 135 days in Kharif with medium slender fine grain type possessing tolerance to BPH and Blast was released by State Variety Release Committee (SVRC) in 2019.

**Maruteru Samba (MTU 1224)**, a fine grain medium duration (135-140 days) culture with excellent grain quality was released by State Variety Release Committee (SVRC) in 2019. It has strong culm, semi dwarf and semi erect plant type with low shattering. It is moderately resistant to BPH and blast.

Maruteru Mahsuri, a long duration fine grain culture with 150 days is a non-lodging, semi erect plant possessing medium slender grains with good cooking quality. It is moderately resistant to BPH.

# CRS, BAPATLA GIVING A FILLIP TO CASHEW CULTIVATION

Cashew Coastal states in India are the main production centers of Cashew in the country. Andhra Pradesh thus emerges as an important area of cashew cultivation other than states such as Orissa, Tamil Nadu and West Bengal along the Eastern coast, Goa, Karnataka, Kerala, Maharashtra along the Western Coast.

In Andhra, Cashew is grown in an



## District wise area and production of cashew in Andhra Pradesh

S.No	District	Area (Ha.)	Production (MT)
1.	Srikakulam	25473	15620
2.	Vizianagaram	16903	15589
3.	Vishakapatnam	31336	22855
4.	East Godavari	32414	22722
5.	West Godavari	18281	21029
6.	Krishna	122	86
7.	Guntur	1156	783
8.	Prakasam	1113	757
9.	Nellore	1276	562
10.	Chittor	324	267
	<b>Total</b>	<b>1,32,760</b>	<b>1,20,500</b>

## Varieties developed from the AICRP on Cashew, Cashew Research Station, Bapatla, Dr. YSRHU

S. No.	Variety	Nut Weight (grams)	Shelling percentage	Export grade	Yield per tree* (Kgs)
1.	BPP-8	8.0	29.0	W210	21.50
2.	BPP-9	7.2	28.0	W210	24.61
3.	BPP-5	5.2	25.0	W400	20.00
4.	BPP-10	8.1	29.3	W210	20.89
5.	BPP-11**	6.8	28.5	W240	17.20

\* Average yield of the cashew trees at the age of 15 years

\*\* The variety BPP-11 is showing early flowering, cluster bearing and suitable for high density planting

### Dr. J. DILIP BABU

Director, CRS, Bapatla



area of 1.32 lakh Ha with a production of 1.20 lakh MT . The state stands second in position with respect to area and production of cashew after Maharashtra in India. Andhra Pradesh contributes 16.42 per cent of total cashew production in India.

**Technologies developed by the Cashew Research Station, Bapatla**

● The cashew research station discovered that soft wood method of grafting helped in maintaining uniformity in progenies (true to type), and was found to be most easy, quick, economic and suitable for commercial multiplication.

**Adoption of different technologies in cashew by the farmers**

Adoption	Technology	Contribution towards production
Varietal replacement	BPP-4, BPP-5, BPP-6, BPP-8 and BPP-9	25-30%
Adoption of production technology	Nutrient management	15-20%
Plant protection	Integrated Pest Management	20-25%
Extension activities	Training programmes, FLDs, Diagnostic visits, Farmers advisory services and Phone in programmes	20-25%

**Challenges in Cashew Cultivation:**

- Majority of the cashew plantations are Senile and seedling origin of non-descript types with low yields
- Growing cashew under infertile, eroded and degraded lands
- Cashew stem and root borer (CSRB) and Tea mosquito bug are the major pests of cashew in Andhra Pradesh
- Lack of awareness among the farmers about the latest cashew production technologies

The state stands second in position with respect to area and production of cashew after Maharashtra in India. Andhra Pradesh contributes 16.42 per cent of total cashew production in India.

● A total of 127 accessions/genotypes including 32 released varieties have been collected and are being maintained in gene bank for further evaluation.

● Application of fertilizers in a circular trench of 25cm broad and 15cm deep at 1.5m away from the trunk was found to be more effective. Foliar spray with 2% Urea thrice at flushing, flowering and nut formation stage for increased yields.

● Top working at 1.0m height during November-December and grafting with scion during January-February was found to be suitable for successful grafting

## Popular cashew varieties grown in Andhra Pradesh



**BPP-8**



**Full blooming of BPP-8 tree**



**BPP-9**



**BPP-5**



**BPP- 10**



**BPP-11 Cluster bearing with intensive**

and rejuvenation of old unproductive Cashew trees.

- Third leaf from the top of the twig has been standardized for the Leaf nutrient analysis.

- Among the different seasonal and perennial crops studied as inter crops in cashew Ground nut, Horse gram, subabul, eucalyptus and Marigold are found to be best in sandy soil situation of Bapatla.

- For clonal progeny of Cashew, fertilizer dose of 1000g N, 125g P<sub>2</sub>O<sub>5</sub> and 125g K<sub>2</sub>O per tree was found to be optimum for sandy soils of Andhra Pradesh.

- Spray schedule has been evolved viz., three sprays are essential throughout the crop growth, first with monocrotophos 1.6ml/l second with chloropyriphos 2.0 ml/l and third with profenofos 1.0 ml/l coinciding with flush-panicle emergence and fruit and nut development stages for the control of pest complex in cashew.

- Pest calendar depicting the status of the pests in Andhra Pradesh state has been prepared.

- For checking stem and root borer mechanical removal of grubs from the infested trees by chiseling the bark and application of chloropyriphos 20 EC @ 0.2% on the chiseled portion and deep burying the chiseled pieces of bark and the gum away from the tree as curative measure have been worked out for stem and root borer of cashew.

### Popular technologies adopted by the farmers

BPP-8, the promising hybrid of Cashew is a bold nut type, cluster bearing early flowering with big size apple. The kernel count is W210 suitable for export market. This variety is highly popular in Andhra Pradesh with a productivity capacity of 2000 kgs / Ha which was proved in the farmers' fields of West Godavari and East Godavari districts of Andhra Pradesh. This variety is also popular in Telangana, Odisha, Tamil Nadu and West Bengal. This variety fetches premium price in the market due to its high shelling percentage and bold nut size.

BPP-9, medium sized nut with cluster bearing and high yield, is also a leading

variety in Andhra Pradesh and also other states like Telangana.

The adoption of Integrated Pest Management practices in cashew, which was developed by Cashew Research Station, Bapatla has resulted in reduction in cost of cultivation to 10-12 per cent and realized 30-40 per cent more net returns than non adoption of technology.

### Extension activities of the Cashew Research Station, Bapatla

- Conducting district level seminars on cashew, three days state level farmers training programmes on cashew, value addition in cashew apple with the financial assistance from Directorate of Cashewnut and Cocoa Development, Cochin, Govt. of India.

- Introduction of cashew varieties in the farmers' fields through area expansion programme under SCSP and TSP sponsored by ICAR- Directorate of Cashew Research, Puttur, Karnataka

- Continuously attending the diagnostic visits to the farmers' fields to create awareness on technologies and its adoption by the farmers.



# Success story of the Cashew farmer

**S**ri. Muppena Ramana Reddy S/o. Rama Krishna Reddy aged about 45 years, hailing from Gopalapuram village and Mandal, West Godavari District is a tobacco farmer. In his 6 acres of land, tobacco is cultivated in four acres. Old cashew plantation (20 years) with seedling origin plants is present in the rest two acres. For the past twenty years Sri M. Ramana Reddy, is completely dependent on his tobacco crop for this major livelihood. He used to invest Rs. 50,000 -75,000/- per acre per year. Many times, the returns from his tobacco crop was meager and used to suffer losses of Rs. 20,000- 30,000 per acre. He discontinued with the cultivation of tobacco due to fluctuation in price in the market every year. Besides, he had to wait for the returns for long time even after disposal of his produce.

Sri. Muppena Ramana Reddy approached Cashew Research Station, Bapatla during January, 2013 and as per the suggestion of Scientists there, he took up cashew plantation with high yielding grafts of BPP-8 and BPP-9. Sri M. Ramana Reddy procured grafts from CRS, Bapatla during January, 2013 and planted 200 cashew grafts in his 4.0 acres of land.

Following the package of practices as per the guidelines of CRS, Bapatla, Mr. Reddy's cashew grafts started yielding since third year onwards. During the 3rd year itself he got a yield of 1.6 - 2 Kg/ plant. During the 4th year he harvested 6 Kg/ plant i.e. in the year 2016. During the 9th year i.e. 2021 he harvested 15.0 Kg/plant. In total he harvested 25 bags of each 80 Kg from his 150 trees in four acres.

During the year 2021, by selling his raw cashew nuts @ Rs. 125/- per kg he got the Gross income of Rs. 2,81,250/-. The expenditure incurred during the current season (2020-21) was Rs.40,000/-. The net income he got from

## Yield particulars of Cashew orchard of Sri.M.Ramana Reddy (Date of Planting: January, 2013)

Year of Harvest	Spacing (m)	Harvest Number	Yield/Plant (kg)	Yield (kg)/4 acres	Yield/Ha (kg)
2015	8X9	1st	1.60	320	200
2016	8X9	2nd	6.00	1200	750
2017	8X9	3rd	12.80	2560	1600
2018	8x9	4th	12.80	2560	1600
2019	8x9	5th	6.00	960	750
2020	8x9	6th	11.00	2240	1100
2021	8x9	7th	15.00	2250 (150 plants)	1400

(The Average productivity per hectare in India is 750 kg.)



his 4 acres of Cashew orchard is Rs. 2, 41,250/-. With the profits earned, Mr. Reddy constructed the RCC building with an investment of Rs.15 lakhs during the year 2018. Now Sri.M.Ramana Reddy is a model farmer and also inspiration to many of the cashew farmers not only in the district of West Godavari and but in entire Andhra Pradesh. By seeing his garden surroundings of Gopalapuram area, around 500 ha of new cashew plantation was established during the last two years.





