



CHAPTER 5
AGRICULTURE
AND ALLIED ACTIVITIES

HIGHLIGHTS
Area under food grains (2016-17)
41.34
lakh ha.

Agriculture

Transforming the Agriculture into a dynamic, high growth sector which would be the real power house of primary sector in next eight years, remains the prime target for this government. In the process, the plan is to double the contribution of Agriculture sector to GSDP from its current level by 2021-2022. The Government has charted clear vision to increase the farm productivity as part of achieving Sustainable Development Goals 2030.

Net Area Sown **62.08** lakh ha.

Rainfall during the South West Monsoon
(2016-17) **534** mm

Rainfall during the North East monsoon
(2016-17) **85** mm

Cropping intensity (2015-16) **1.24%**

The role played by the agriculture sector in the economy of Andhra Pradesh, remains crucial, despite its volatility centring around unpredictable weather conditions, huge farm expenditure and non-profitability continues to be the mainstay for millions of population in the state. Making the agriculture sector more resilient and helping the farming community is the most important priority for the state of Andhra Pradesh.

The State is committed to transform the Primary Sector with an aspirational goal of making Andhra Pradesh as one of the three top leading states in India through Sunrise Andhra Vision by 2029. The focused areas under the Primary Sector are:

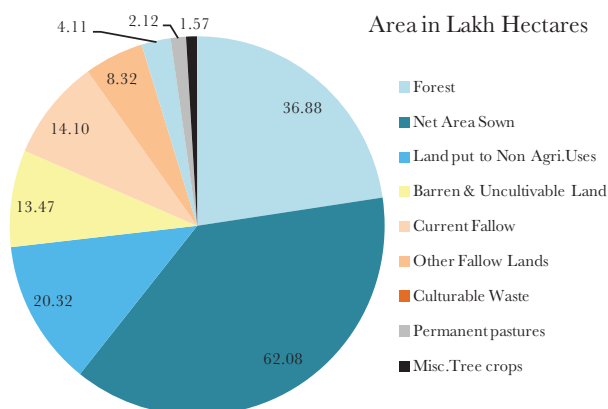
- increasing productivity
- mitigating the impact of droughts through water conservation and micro-irrigation;
- postharvest management to reduce wastage; and
- establishment of processing, value addition capacity and supply chain of the identified crops.

Making agriculture sector drought-proof, the state has come out with various strategies that not only mitigate the distress in agriculture but will substantially enhance the incomes of farmers. Deploying Rain guns during Rabi season and ensuing Kharif as a yield protection measure by placing their services based on the soil moisture assessment is one of the key strategies of the government. Ensuring food security and provision of gainful employment continues to be the essential premise of socio economic development.

Land Utilization

Of the total geographical area of the state of 162.97 lakh hectares, 38.09% is under net area sown (62.08 lakh hectares), 22.63 % under forest (36.88 lakh hectares), 8.65% under current fallow lands (14.10 lakh hectares), 12.47% under land put non-agricultural uses (20.32 lakh hectares), 8.27% under barren and uncultivable land (13.47 lakh hectares), 7.63% (12.43 lakh hectares) is under other fallow, cultivable waste lands like permanent pastures and other grazing lands and the remaining land under miscellaneous tree crops and groves are counted for 2.26% (3.69 lakh hectares). The Land utilisation particulars from 2008-09 to 2015-16 are given in the Annexure 5.1 and district wise land utilisation particulars during 2015-16 are given in Annexure 5.2. The following Chart. 5.1 depicts Land utilisation details for 2015-16.

Chart 5.1 : Land Utilisation in Andhra Pradesh 2015-16



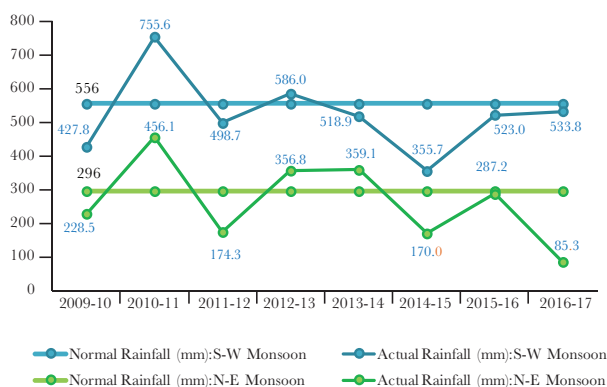
Source: Directorate of Economics & Statistics department

Rainfall

534 mm of rainfall was received in the State during the South West Monsoon period of 2016-17 as against the normal rainfall of 556 mm-- a deficit of 4 %. The deficit is even higher(71%) in the North East monsoon period as only 85 mm rainfall as against the normal rainfall of 296 mm is recorded during this period.

Season wise and region wise rainfall details are given in the Annexure 5.3 and district wise rainfall is given in Annexure 5.4. Rainfall trend over the past 8 years is depicted in chart 5.2.

Chart 5.2: Rainfall during South-West Monsoon and North-East Monsoon



Source: Directorate of Economics & Statistics

Soil Types

There are various types of soils and the formation of a soil is primarily influenced by major factors - climate, altitude and composition of bedrock etc. Disproportion in the distribution of rainfall in the country and excessive heat contribute special characters to the soils. Most of soils in the State are made up of a combination of three basic types, namely, Sand, silt, and clay. Category wise soils are given in Annexure 5.5. Of the 22 categories of soils adding to the total geographical area of the state, six types are predominant and together account for over 88% of the area.

Area and Production (Kharif and Rabi Season – Second Advance estimates 2016-17)

As per the Second advance estimates, the area under food grains showed a marginal decline of 0.02 lakh hectare. The total area under food grains is estimated at 41.34 lakh hectares in 2016-17 as against 41.36 lakh hectares in 2015-16. However, despite decline in area, the total food grains production in 2016-17 is estimated to register an impressive increase of 9.09% from 143.78 lakh tonnes in 2015-16 to 156.85 lakh tonnes in 2016-17. Significant increase in the production of Paddy during Kharif season together with productivity improvement in some of the crops through adoption of best practices largely contributed to this improved production.

Kharif-2016-17

The area under food grains in Kharif 2016-17 is estimated at 21.53 lakh hectares while it was 19.86 lakh hectares in 2015-16 showing an increase of 8.41%. Similarly, the production of food grains in Kharif 2016-17 is estimated at 87.10 lakh tonnes while it was 68.12 lakh tonnes in 2015-16, showing an increase of 27.86%. The area under Paddy in Kharif 2015-16 is estimated at 15.20 lakh hectares while it was 13.99 lakh hectares in 2015-16, showing an increase of 8.65%. Similarly, the production of Paddy in Kharif 2016-17 is estimated at 79.04 lakh tonnes while it was 61.59 lakh tonnes in 2015-16, showing an increase of 28.33%.

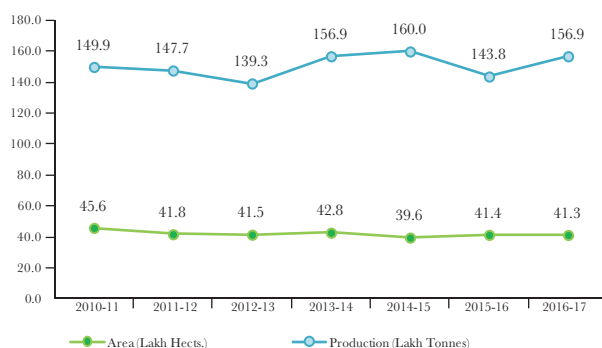
Rabi – 2016-17

The estimated area under food grains in Rabi 2016-17 is expected to be 19.81 lakh hectares while it was 21.50 lakh hectares in 2015-16 showing a decrease of 7.86%. Similarly, the estimates also indicate a fall in production under food grains in Rabi 2016-17 from 75.66 lakh tonnes in 2015-16 to 69.75 lakh tonnes in 2016-17, a decline of 7.81%. The decline in production in food grains in Rabi is largely accounted by fall in Paddy production, which is attributable to deficit rainfall in certain districts.

The estimated area under Paddy in Rabi 2016-17 is expected to be 6.20 lakh hectares while it was 7.62 lakh hectares in 2015-16, showing a decrease of 18.64%. Similarly, the production under Paddy in Rabi 2016-17 is estimated at 41.29 lakh tonnes while it was 50.74 lakh tonnes in 2015-16, showing a decrease of 18.62%.

Details of the area and production of food grains from 2010-11 to 2016-17 are given in Annexure 5.6. Season wise area, production and productivity of selected crops are given in Annexures 5.7, 5.8 and 5.9 respectively. Area and production of food grains details are depicted in chart 5.3.

Chart 5.3: Area and Production under food grains



Source: Directorate of Economics & Statistics

Cropping Intensity

The cropping intensity (the ratio of gross cropped area to net cropped area) is one of the indicators of assessing efficiency of agriculture sector. The cropping intensity for the year 2015-16 is 1.24.

Gross and Net Area Irrigated

The gross area irrigated in the State decreased to 35.47 lakh hectares in 2015-16 from 38.86 lakh hectares in 2014-15. The net area irrigated in the state is registered as 27.43 lakh hectares in 2015-16 as against 29.27 lakh hectares in 2014-15, showing a decrease of 6.29 percent.. The source-wise district wise gross and net area irrigated in the state from 2008-09 to 2015-16 are given in Annexures 5.10, 5.10 A and 5.11, 5.11A respectively.

Land Holdings

The data on land holdings is being collected since 1970-71 through a quinquennial census of land holdings, the latest available data relates to 9th Census and the 10th Census with reference year 2015-16 is under progress. The average size of land holdings in the state has marginally declined to 1.06 hectares during 2010-11 from 1.13 hectares in 2005-06. The number of holdings has increased from 72.16

lakh in 2005-06 to 76.21 lakh in 2010-11. Distribution of land holdings and area according to size classes are given in Annexure 5.12 and District wise distribution of land holdings and area according to size classes are given in Annexure 5.13.

Agriculture Extension Programmes - Mission based approach

The priority of the State is to double the farm income with double digit inclusive growth strategy contributing to higher Gross State Domestic Product (GSDP). The government is working in a mission mode to attain sustainable agricultural production duly competing with the best performing states in the country with minimum cultivation cost, targeting higher net returns to farmer.

It is aimed to transform the Agriculture sector in the state into a dynamic, high growth sector, which would be a agri-powerhouse in the next eight years. Thus, the target is to devise strategies to double the contribution of Agriculture to the GSDP to Rs.60000 Cr by 2021-22 from the current level of Rs.31961 Cr (constant prices 2015-16). The Government has got clear vision to increase the food grain productivity from 2641 Kgs/Ha to 4409 Kgs/Ha, marching towards achieving Sustainable Development Goals 2030.

The following strategies are being adopted for making the mission a reality:

- Involvement of marginal and small farmers in crop diversification and food security are the important aspects to be addressed in accelerating crop diversification in the state.
- Empowering the farmer with advance agricultural practices i.e., promotion of intercropping and location specific crop sequence.
- Promoting poly crop system in the rain fed areas of the state to ensure sustainable income to the farmer in the event of drought situations also which is a common phenomenon of Rayalaseema districts of the state.
- Promoting pre Kharif sowings with pulses in NSP and Krishna Delta.
- Increasing cropping intensity through seasonal discipline especially in Godavari Delta areas where the farmers can take three crops in a year (Paddy – Paddy - Pulse).
- Ensuring timely input supply and new seed varieties.

- Promotion of self- reliance in seed production among farmers.
- Regulation of inputs and quality control.
- Soil test based fertilizer recommendation and Soil Health Management.
- Promotion of Integrated Crop Management through INM, IPM, efficient water management.
- Correcting micronutrient deficiency.
- Promotion of Green Manure crops on a Mission mode.
- Training and awareness programme through Polam Pilusthondhi.
- Involvement of ANGRAU and other National and International Institutes.
- Periodical crop advisories to the farmers through crop specific committees formed both at state and district level.
- Promotion of organic farming to meet the demand of World Market.
- Calamity Management in the event of drought, floods, hailstorms etc.
- Drought mitigation through Rain guns.
- Farm Mechanization – for cost effective farming practices with special emphasis to promote CHCs.
- Provide day-to-day information to farmer on crop production, input supply, and marketing through Internet Services and AGRISNET portal.

Agro Climatic Zones

The following are the Six Agro climatic zones in the State.

Sl. No.	Name of the zone	Districts
1	North coastal zone	Srikakulam, Vizianagaram, Visakhapatnam
2	Godavari zone	East Godavari, West Godavari
3	Krishna zone	Krishna, Guntur, Prakasam
4	Southern zone	Chittoor, Kadapa, Nellore
5	Scarce rainfall zone	Kurnool, Anantapur
6	High altitude & tribal areas zone	High Altitude & tribal areas of Srikakulam, Visakhapatnam, East Godavari districts

Major Initiatives:

- Primary Sector Mission.
- Separate Agriculture budget.
- Chandranna Rythu Kshetram to demonstrate the best practices at village level.
- Focus on farm mechanization.
- Enhancing Agriculture productivity by improving Soil Health by massive soil samples collection by using GPS technology and development of soil fertility maps.
- Special project for supply of micro nutrients.
- Strengthening of agriculture extension.
- Crop specific committees both at state and district level.
- Organic/ Natural farming.
- Empowerment of farmers through Rythu Sadhikara Samsta
- Extensive usage of ICT in agriculture
- Development of drought proofing techniques and implementation in rainfed cultivated areas.

Primary Sector Mission inclusive Double Digit Growth:

Primary sector mission is launched by the state government targets increased productivity in the primary sector, mitigating the impact of droughts through water conservation and micro-irrigation, post-harvest management. It aims to reduce the wastage and establishment of processing, value addition capacity. Action plans have been prepared in collaboration with ICRISAT, keeping in view of double digit growth.

Extension Activities

Polam Pilusthondi:

The main objective of the scheme is to strengthen the extension reach at farmers' doorstep for increasing productivity, profitability, sustainability and explore the possibilities of value addition to increase the income of the farmers.

Strategies:

The key strategies to foster rapid and sustainable agricultural growth and raise increased farm income are: strengthening local service providers, community participation, providing

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effective extension services, promoting farmer led extension, promoting scientific approach.

Conduct of the programme:

The Polam Pilusthondi programme is being conducted for two days in a week along with the officials of the allied departments and scientists of the Agricultural, Horticultural and Veterinary universities with involvement of the people representatives. Grama sabha is organised followed by Farmer-Scientist Interaction programme and field visit. These proceedings of Polampilusthondi are captured through Tablets by the Extension Functionaries to address the same on priority basis. A total no. of 35,891 visits to the villages have been made, sensitizing 9.77 lakh farmers during Kharif 2016.

Trainings and workshops:

In view of the rapid changes occurring in agriculture sector, it is necessary to upgrade the skills and knowledge of the farming community. The basic objective of the trainings is to transfer the latest agricultural technologies to the farmers, farm women and RMGs for their capacity building in agriculture and also to promote women's participation in the overall agricultural development and thereby increasing their income levels.

The trainings will cover all the aspects based on the critical interventions identified in the village action plans with special reference to 1/3rd villages identified in each mandal. During the year 2016-17, it is planned to conduct 2000 trainings with a financial allocation of Rs.100.00 lakhs, about 1, 00,000 farmers. 932 trainings were organized covering 46,600 farmers during Kharif 2016,

Monthly workshops are held regularly at the identified research stations of ANGRAU in all districts on first Saturday of every month. Departmental officers and scientists of ANGRAU discuss the problems and formulate production recommendations for the ensuing month in a structured and systematic way with a definite agenda including field visits to research stations. All the Joint Directors of Agriculture will participate along with extension staff for interaction with scientists. The extension staff will give feedback to ANGRAU scientists and obtain crop wise recommendations on all aspects for coming month, which in turn will be informed to the farmers. ANGRAU has

organized Zonal Research Extension Advisory Council Meetings (ZREAC) for both Kharif and Rabi seasons in all the Agro-climatic zones for the year 2016-17 in the months of March & April 2016.

Chandranna Rythu Kshetralu (CRKs)

In Andhra Pradesh important crops like Paddy, Pulses Coarse cereals, Oil seeds and cotton are cultivated in considerable area. The production and productivity in majority of crops is below the possible potential. There is very need to motivate and sensitize the farmers regarding the best management practices and the importance of location specific critical interventions for achieving enhanced productivity in different crops. In order to enhance the productivity of these crops, special programme involving the gross root level functionaries and farmers, Chandranna Rythu Kshetralu-(CRKs) are being conducted on farm demonstrations with latest technological interventions.

- Chandranna Rythu Kshetralu is the new on Farm demonstration programme implemented in the farmers field itself to promote best agronomic and farm management practices for achieving increase in productivity and reducing cost of cultivation.
- CRK is an on Farm demonstrations of 10 Ha each cluster at field level with an subsidy of Rs 5000/- per Ha.
- CRK demonstration will be selected based on the major crop grown in the village/ Mandal and division. It is proposed to organize a total of 5500 CRKs in all the 13 districts in the State in all the major crops i.e., Rice, Groundnut, Pulses, Maize, Cotton and Sunflower.

Multi Purpose Extension System

The Government introduced Multi Purpose Extension System in place of Adarsha Rythus for every 1000 ha. of cultivable area. 3905 Multi Purpose Extension Officers (MPEOs) are working in the State.

Objectives:

- To facilitate effective extension reach to the farming community.
- To address the immediate needs of the farmers during the season in case of unfavorable seasonal conditions.
- Sensitize the farmers on measures to be taken up to enhance the productivity Levels.

The Performance of MPEOs is being assessed on monthly basis based on the Key Performance Indicators and MPEOs are graded based on the marks obtained viz. The MPEOs who have obtained Grade C & D are provided with an opportunity time of 4 months and 3 months respectively to improve the performance and in case of non-improvement, the concerned MPEO will be terminated from service.

Padi Pantalu Monthly Magazine

The Telugu Monthly magazine 'Padi Pantalu' is printed and distributed every month to farmers and local public representatives by the department. The department wise latest technical information on various schemes, objectives, guide lines, subsidy pattern and suggestions to the farmers related to the concerned season/ month are being published.

Soil samples analysis and soil health cards

Soil sampling and soil testing program is organized in a systematic manner to evaluate the fertility status, identify soil problems and for facilitating optimal soil productivity, improving fertility and reclaiming problematic soils. 16 Soil Testing Labs (STLs), 1 Regional Soil Testing Lab at Bapatla, Guntur district, 9 Mobile Soil Testing Labs and 30 Mini Soil Testing Labs in AMCs are functioning at in the State.

The departmental Soil Testing Laboratories are equipped to analyse 12 parameters i.e., PH, EC, OC, N, P, K, S, Zinc, Iron, Copper, Magnesium and Boron. The results of the soil analysis are being communicated to the respective farmers in the form of soil health cards. Fertilizer recommendations on the available nutrient contents on soil fertility status are to be given to the farmers in the soil health cards. During 2015-16 and 2016-17, 10.43 Lakh Soil samples analysed and 42.38 lakh Soil Health cards were distributed to the farmers. 3rd phase of soil sample collection and analysis is under progress. So far 50,764 samples were collected & 34,309 samples were analysed during 3rd phase. By June 2017, every farm holding (76 Lakhs) in the State will be provided with Soil Health Card.

Soil Health Management - National Mission for Sustainable Agriculture (NMSA)

Soil Health Management in a sub mission under NMSA, which aims to increase soil nutrient status and thus enhance

crop productivity for ensuring food security and sustaining rural development. Integrated Nutrient Management Techniques have been found to be useful to increase nutrient use efficiency by integrating and balancing the nutrient dose in relation to nutrient status and crop requirements.

Project for enhancing Agricultural productivity

Analysis of soil samples has indicated that 42% of soils in Andhra Pradesh are potentially deficient in Zinc(Zn), 22% in Iron(Fe), 7% in Manganese (Mn), 3% in Copper (Cu), 19% in Boron(B) and 11% in Molybdenum(Mo). Basal application to soil of Zn, B, and Mo., and foliar sprays of Fe and Mn have been recommended as the most suitable methods for correcting such deficiencies which has shown significant effect on crop yields. Also analysis studies revealed that 20-24% of soils in AP are deficient in Sulphur. These large scale deficiencies of multiple nutrients such as micro and secondary nutrients are reducing the response to added N, P, K nutrients also. It was planned to take up a massive programme in the districts, where micronutrient deficiencies are high wide. These are: publicity on correction of micronutrient deficiency through local media, Polam Pilustondi, wall poster and pamphlets, Hoardings and moving media etc.. All the micro nutrients are being positioned and distributed on saturation mode.

During 2015-16, 6833 MTs of Zinc Sulphate, 258 MTs of Boron and 33232 MTs of Gypsum were supplied to farmers on 50% subsidy covering an area 7.52 lakh ha respectively in all major crops. Yield impact studies taken up under the project, showed 5-10% yield increase over the control plots.

During 2016-17, it is targeted to cover 15.53 lakh ha of micronutrient deficient area in major crops cultivated in the State. An area of 6.75 lakh ha. was covered in Kharif 2016 and planned to cover 6.43 Lakh ha during Rabi 2016-17.

Information and Communication Technology:

Agriculture Department ranked number one position under Farm Mechanization transactions in India. The Government has promulgated the Agricultural Resources Information Systems NET work. (AGRISNET) in the country. AGRISNET envisages promotion of e-Governance by use of Information & Technology. Efforts are being made to this portal (AGRISNET www.apagrisnet.gov.in) to link to Dash Board with real time data base.

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Online soil health card generation system- <http://45.127.101.32:8080/OLMS>

Farmers can download soil health card online, using unique number allotted to each sample. The GPS co-ordinates of soil test samples collected from farmers' fields are captured. All the results are plotted on Google map at GPS co-ordinates. By clicking on the tag, Soil Health Card can be viewed on Google map. A facility is provided to send the soil test based fertilizers recommendation as SMS to the farmers' mobile phone, as and when the analysis is completed.

The Soil Health Card portal allows for registration for collection of soil samples along with testing in the approved Soil Testing Labs. The important aspect of the portal is that it not only gives an assessment to a farmer about use of major fertilizers but also the deficiency status of micro nutrients in his fields and which must be added for a balanced soil health. The information is given for different crops. So far 42.38 lakh Soil Health Cards were distributed to the farmers in two phases and by June 2017 every farmer in the state will be supplied with Soil Health Card.

Online input license management system of seeds, fertilizers & pesticides <http://137.59.201.87:8080/OLMS>

This application provides online licenses to the input dealers/manufacturers of fertilizers. Thereby the dealers/manufacturers can apply for license freshly or renew and amend online.

e- Seed Distribution: (D-Krishi)

D-Krishi is a simple, sustainable, secure and standard solution for farmer's welfare through digitization. Farmers or any one of their family members are the main beneficiaries. Land Records, Aadhaar and family database (ration card) are integrated. Based on the land ownership data of the farmers linked to his Aadhaar ID, the area of land and associated eligible seed quantity shall be calculated by the system. The farmer gets the seeds. The system keeps records of each farmer wise seed distributed and the stock.

The agriculture department has been distributing subsidized seed through biometric system using the Aadhar, web land and ration card databases with the technical support from NIC. Through this project, the department has distributed

Ground nut seed in Ananthapuramu in Kharif-2016 and Bengal gram seed in Ananthapuram, Kurnool, Kadapa, Prakasam & Guntur during Rabi-2016-17 successfully. Based on these experiences, department is planning to distribute all kinds of subsidy seeds through this Android application from ensuing Kharif season.

Village Action Plan Software: www.agrivap.com

Village Action Plan is the collection of information on village level statistics, requirement of inputs, identification of agricultural problems, analysis, identifying suitable measures and understanding the growth in the sector, and a capable tool for decision making. The software has been developed in the perceptive of the farming situations in the villages and provides information on village profile, farming situation, types of soils, crop area, production and productivity, seed requirement, cropping pattern, nutrient requirements, consumption, good agriculture practices, availability of farm machinery and GVA,.

e-Agriculture- Crop Booking- Android Application: <http://45.114.143.89/E-Agriculture>

The Department has been doing crop booking using e-Agriculture tab based android application since Rabi-2015. Based on the experiences in Rabi, department is planning to add some more features to the software to assess the work quality like addition of survey number wise soil health report, micro nutrients supplied, subsidy seed availed position, fertilizers supplied, category of the farmer, status of the farmer, source of irrigation etc. This software was integrated with CM Dash board to show the real time dynamic crop coverage area of the state. In kharif Season, 40 lakh ha crop was booked through this Software application and created 32 lakh farmer data base for the department.

Agriculture Videos

A tab based application is used as a repository of all agriculture related videos in one site. Field staff also can upload videos on latest technology implemented in their jurisdiction. Users can give their reviews, comments, rating on the uploaded videos.

Vaddi Leni Panta Runaalu

The process of payment of interest amount waived off on farmers' crop loans is automated and is implemented. The interest amount is credited to respective banks through Nodal branches based on details of principal loan amount repaid by the farmers.

MPEO Performance Evaluation Software:

MPEO Evaluation software is developed to monitor the performance evaluation of each MPEO which will be evaluated by MAO, ADA(R) & JDA based on the marks and grading system. Evaluation is being done based on the dynamic quantitative and qualitative criteria. MPEO's Performance & Extension system have been strengthened due to this software application.

Subsidy Seed Distribution

A quantity of 7.58 lakh Qtl. of various crops seed was distributed during Kharif 2016-17 with a subsidy of Rs.16385.77 lakhs in co-ordination with the seed supplying nodal agencies i.e. APSSDC, OILFED and MARKFED. It is planned to distribute 6.22 lakh Qtl. of various crop seeds on subsidy to the farmers during Rabi 2016-17. Of this 3.23 lakh Qtl. has been distributed with a subsidy value of 121.27 Lakhs.

Fertilizers

Fertilizer consumption during the year 2015-16 in terms of product was 35.89 LMT (Kharif 16.48 LMT and Rabi 19.41 LMT) and in terms of nutrients (N, P, K), it was 16.98 LMTs (7.75 LMT during Kharif 2015 and 9.23 LMT during Rabi 2015-16). The consumption during the year Kharif 2016 in terms of product is 15.63 LMT and in term of Nutrient (NPK) is 7.39 LMT. Fertilizer consumed in kharif -2016 was 15.63 Lakh MTs for an extent of 39.76 Lakh Ha. Reduction in per Ha Fertilizer consumption of Kharif-2016 over Kharif – 2015 is 17.88%. Details of consumption of Fertilizers and in terms of nutrients are given in Annexures 5.14 and 5.15 respectively.

Nutrient Based Fertilizer Policy

The department is implementing NBS Policy for P&K fertilizers, a fixed rate of subsidy (in Rs. per Kg basis) is

announced on nutrients namely Nitrogen (N), Phosphate (P), Potash (K) and Sulphur (S) by the Government on annual basis. The fertilizer companies will decide MRPs based on the prices of the raw materials in the international market and cost of production of finished goods, based on demand and supply. The Government of India communicated per kg subsidy fixed on nutrients for the year 2015-16 w.e.f from 01.04.2015 viz. Nitrogen, Phosphorous, Potash and Sulphur and are shown in Table 5.1:

Table 5.1 Details of nutrients

S. No	Nutrients	NBS per (Rs. Per Kg of Nutrient)
1	N	20.875
2	P	18.679
3	K	15.50
4	S	1.677

Pesticides

The consumption of chemical pesticides during Kharif 2016 was 1100.67 MTs of active ingredient and it was 1180.30 MTs during Kharif-2015. The chemical pesticide consumption decreased compared to last year's consumptions i.e., 2015-16 due to the awareness created among the farming community by the Agriculture department under Integrated Pest management Practices through Chandranna Rythu Kshetralu, Polambadi, Polampilusthondi, usage of bio-pesticides, change in cropping pattern etc., The pesticide consumption particulars from 2010- 11 to 2016-17 (up to Sept 2016) is shown in Table 5.2.

Table 5.2: Utilization of Pesticides

Year	Pesticide Consumption(Active Ingredient)- MTs
2010-11	4410
2011-12	4882
2012-13	4249
2013-14	4253
2014-15	4050
2015-16	2713
2016-17 (up to Sept 2016)	1101

Source: Agriculture Department

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Farm Mechanization Scheme

High proportion of female workforce both in the cultivation and processing stages of farming is an emerging trend in Indian agriculture. Studies indicate that reducing drudgery, improving efficiency by saving on time and labour, improving productivity, minimizing wastage and reducing labour costs, require attention and are possible through introduction of better equipment for each farming operation. Thus, ergonomically designed tools and equipment for reducing drudgery, enhancing safety and comfort and also to suit the needs of women workers would help in better adoption of technologies in agriculture.

Farm mechanization scheme involves judicious application of inputs by using agricultural machinery/ equipment e.g. hand tools, bullock drawn equipment, power driven machines including the prime movers for performing various operations required for crop production activities. The mechanization includes introduction of better equipment for each farming operation in order to reduce drudgery, to improve efficiency by saving on time and labour, improve productivity, minimize wastage and reduce labour costs for each operation. Another important aspect in our agriculture sector is the high proportion of female workforce in both the cultivation and processing stages of farming. Therefore, tools and equipment suitable designed and also to suit the needs of women workers would help in better adoption of technologies in agriculture. Farm equipment like land preparation, sowing equipment, plant protection equipment, self-propelled machinery, power tillers, tractors, inter cultivation equipment etc., which are used in farming operations and post-harvest equipment are supplied under subsidy and the expenditure is being met under SDP, RKVY, SMAM during 2016-17. The subsidy is increased from 50% to 70% to SC and ST farmers on farm mechanisation components except tractors and combined harvesters.

Online application system was introduced to help farmers to avail the equipment on time and also for effective monitoring of farm equipment supplies in a more transparent manner. The achievements under Farm mechanization scheme are shown in Table 5.3.

Table 5.3 : Farm mechanization

Year	Beneficiaries		Subsidy expenditure (Rs in lakhs)	
	Target	Achievement	Target	Achievement
2013-14	84990	54109	15540.63	7209.02
2014-15	122182	87990	16591.47	15784.00
2015-16	153401	124386	18688.25	18440.58
2016-17 (upto Oct2016)	88442	48455	27657.62	14663.48

Source: Agriculture Department

1176 Custom hiring centers are established for the crops Paddy, Maize, Groundnut, Cotton, Tobacco and Sugarcane at village and marginal high cost machinery available to small and marginal farmers. Capacity building trainings were also being conducted to train rural unemployed youth on the machinery to mitigate shortage of skilled workers to work on the machines.

Crop Insurance

Presently 3 crop insurance programmes are under implementation in the State

1. Pradhan Mantri Fasal Bima Yojana (PMFBY)
2. Weather Based Crop Insurance Scheme (WBCIS)
3. Unified Package Insurance Scheme (UPIS)

Pradhan Mantri Fasal Bima Yojana (PMFBY)

To extend more benefit to the farming community, Govt. of India announced new crop insurance policy namely "Pradhan Mantri Fasal Bima Yojana" in place of NAIS & MNAIS from Kharif 2016 season onwards. It incorporates the best features of all previous schemes and at the same time, all previous shortcomings/weaknesses have been removed. The major improvements made are:

- Farmer's premium contribution in Kharif 2% and in Rabi 1.5% for Food Crops and Oilseed Crops. Annual Commercial & Horticulture crops – farmer premium share will be maximum of 5%.
- Premium subsidy will be paid by the Central and State Governments on equal proportion (50:50).
- Cover for inundation apart from Hail storm and Post-harvest crop damage.
- Action plan to cover 50% of the area under Crop Insurance.

Kharif- 2016

Under PMFBY scheme, Paddy Crop is covered under “Village Insurance Unit” in 12 districts, Red gram in Ananthapur District and other 18 crops covered under as Mandal Insurance Unit. As per the PMFBY operational guidelines of GOI, 13 Districts have been grouped into two clusters with balanced risk profile and sum insured by Agricultural Insurance Company (AIC) and ICICI Lombard. The results of the CC Experiments are being compiled through online system for quick settlement insurance claims. District wise Crops notified under Pradhan Mantri Fasal Bima Yojana (PMFBY) during Kharif 2016 season in Cluster-I & Cluster-II are shown in Table 5.4 & 5.5

Table 5.4 Crops notified under Pradhan Mantri Fasal Bima Yojana (PMFBY) during Kharif 2016 - Cluster-I

SL. No	District	Crops
1	Srikakulam	Rice(village made as insurance unit), Bajra, Groundnut(UI), sugarcane(P), sugarcane(R)
2	East Godavari	Rice(village made as insurance unit), Bajra, Cotton (UI), Sugarcane(P), Sugarcane®
3	Guntur	Rice(village made as insurance unit), Blackgram, Castor, Redgram, Sugarcane (P), Sugarcane (R), Turmeric
4	Prakasam	Rice(village made as insurance unit), Bajra, Maize, Redgram, Castor, Chillies(I), Chillies(UI),
5	Nellore	Rice(village made as insurance unit), Bajra, Groundnut(I), Sugarcane(P), Sugarcane(R)
6	Ananthapuramu	Redgram (village made as insurance unit)Rice, Jowar, Bajra, Maize, , sunflower, chillies(I), Cotton (UI)
7	Chittoor	Rice(village made as insurance unit),Jowar, Bajra, Redgram, Sugarcane(P), Sugarcane(R)

Table 5.5 Crops notified under Pradhan Mantri Fasal Bima Yojana (PMFBY) during Kharif 2016 Cluster-II

SL. No	District	Crops
1	Vizianagaram	Rice(village made as insurance unit), Bajra, Maize, Groundnut(UI), Sugarcane(P), Sugarcane(R), Cotton (UI)
2	Vishakhapatnam	Rice(village made as insurance unit), Bajra, Maize, Red gram, Groundnut(UI), Sugarcane(P), Sugarcane(R)
3	West Godavari	Rice(village made as insurance unit), Sugarcane(P), Sugarcane®
4	Krishna	Rice(village made as insurance unit), Maize, Green gram, Red gram, Chillies (I),Cotton (UI), Groundnut (UI), Sugarcane (P), Sugarcane (R)
5	Y.S.R(Kadapa)	Rice(village made as insurance unit),Jowar, Bajra, Red gram, Cotton(I), Cotton(UI), Sunflower, Turmeric, Sugarcane(P), Sugarcane(R)
6	Kurnool	Rice(village made as insurance unit),Jowar, Bajra, Red gram, Sunflower, Chillies(I), Chillies(UI), Cotton (I) Cotton(UI), castor, Sugarcane(P), Sugarcane(R), Korra.

Rabi 2016-17

- Under PMFBY, Paddy Crop is covered under “Village Insurance Unit” in 5 Districts (East Godavari, West Godavari, Krishna, Nellore & Chittoor, Bengalgram in 3 districts (Prakasam, Kurnool & Kadapa), Maize in Guntur District and 10 crops (Rice, Maize, Jowar, Greengram, Blackgram, Bengalgram, Groundnut, Sunflower, Red Chilly, Onion covered under Mandal Insurance Unit.
- As per the PMFBY operational guidelines of GOI, all the districts have been grouped into two clusters with balanced risk profile and sum insured by Agriculture Insurance Company of India Ltd., and ICICI Lombard General Insurance Company Ltd.

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Notification of districts along with crops notified during Rabi 2016-17 season in Cluster-I & Cluster-II are shown in Table 5.6 & 5.7

Table 5.6 Crops notified under Pradhan Mantri Fasal Bima Yojana (PMFBY) during Rabi 2016 - Cluster-I

Sl. No.	District	Crops Notified
1	Vizianagaram	1. Rice 2.Maize 3.Greengram 4.Blackgram 5.Groundnut 6.Red Chilly
2	Vishakapatnam	1. Rice 2. Red Chilly
3	East Godavari	1. Rice (Village Insurance Unit)2.Maize 3.Jowar (UI) 4.Red chilly 5. Blackgram 6. Greengram
4	Guntur	1. Rice 2.Jowar (UI) 3.Maize (Village Insurance Unit) 4.Greengram 5.Blackgram 6.Bengalgram 7.Groundnut
5	Prakasam	1.Rice ,2.Bengal Gram(Village Insurance Unit), 3.Black gram,4. Red Chilly 5.Green gram, 6.GroundNut, 7.Jowar(UI), 8.Maize, 9.Sun flower
6	Ananthapuramu	1.Rice 2.Jowar(UI) 3. Bengalgram 4.Groundnut 5. Sunflower
7	Kurnool	1.Rice 2.Jowar(UI) 3.Bengalgram (Village Insurance Unit) 4.Groundnut 5.Sunflower 6.Onion

Table 5.7 Crops notified under Pradhan Mantri Fasal Bima Yojana during Rabi 2016 - Cluster-II

Sl. No.	District	Crops Notified
1	Srikakulam	1. Rice 2. Blackgram 3. Greengram 4. Groundnut 5.Red Chilly 6. Onion
2	West Godavari	1. Rice (Village Insurance Unit)2.Maize 3.Greengram 4.Blackgram 5. Red Chilly

Sl. No.	District	Crops Notified
3	Krishna	1. Rice (Village Insurance Unit) 2.Maize 3.Greengram 4.Blackgram
4	SPSR Nellore	Rice(Village Insurance Unit),2. Black gram, 3.Red Chilly 4. Green Gram, 5.Groundnut
5	YSR Kadapa	Rice 2.Jowar (UI) 3. Bengalgram (Village Insurance Unit) 4. Groundnut 5.Sunflower 6. Onion
6	Chittoor	1.Rice(Village Insurance Unit) 2.Groundnut 3.Red Chilly

Weather Based Crop Insurance Scheme (WBCIS)

Kharif - 2016:

Under Weather Based Crop Insurance Scheme, Groundnut crop is covered in 4 Districts of Rayalaseema region. Cotton, Redchilly, Oil palm, Sweet lime, Tomato crops are having insurance coverage facility in selected Districts. The structure of farmer's premium under WBCIS will be at par with the proposed PMFBY i.e., 2 % for Kharif crops & 1.5 for Rabi Crops. (Horticulture/Comml. Crops - farmers share is upto 5% only). As the proposed crops under WBCIS are limited in the selected districts, one cluster is formed under this scheme. Final claim settlement of Kharif 2016 is under process and it is expected to be completed by the end of December 2016 for Groundnut crop.

Rabi 2016-17:

- Under Weather Based Crop Insurance Scheme Mango, Banana, Cashewnut, Acid lime and Tomato crops are covered in insurance coverage facility in selected districts.
- As the proposed crops under WBCIS are limited in the selected districts, one cluster is formed under this scheme.

Season wise, district wise crops notified under W.B.C.I.S. are shown in Table 5.8

Table 5.8 Notified crops under W.B.C.I.S

Season	Crops	Districts
Kharif, 2016	Groundnut	Kurnool, Anantapur, Kadapa and Chittoor
	Cotton	Guntur and Prakasam.
	Redchilly	Guntur
	Oil Palm	West Godavari
	Sweet Lime	Kadapa
	Tomato	Chittoor , Kurnool, Prakasam
Rabi, 2016-17	Mango	Srikakulam, Vizianagaram, Vishakapatnam, East Godavari, West Godavari, Krishna, Prakasam, Kadapa, Kurnool, Chittoor
	Banana	Srikakulam, Vizianagaram, East Godavari, Kadapa, Kurnool, Guntur, Ananthapuramu
	Cashewnut	Srikakulam, Vizianagaram
Rabi, 2016-17	Acid Lime	Nellore
	Tomato	YSR Kadapa, Kurnool, Chittoor, Ananthapuramu

Unified Package Insurance Scheme (UPIS) (Pilot scheme)

Apart from PMFBY & WBCIS, GOI has also announced “Unified Package Insurance Scheme (UPIS) on pilot basis during 2016-17.

- Ananthapuramu district is selected to implement UPIS during 2016-17 on pilot basis.
- The pilot scheme includes seven sections viz., 1. Crop Insurance (PMFBY/WBCIS), 2. Personal Accident Insurance (PMSBY), 3. Life Insurance (PMJJBY) 4. Building & Contents Insurance (fire and allied perils), 5. Agriculture Pump Sets Insurance (Upto 10 HP), 6. Student Safety Insurance, 7. Agriculture Tractor Insurance
- Out of these seven sections Crop Insurance (PMFBY / WBCIS) is compulsory. However, farmer can choose at least two sections from remaining six to avail applicable premium subsidy under PMFBY/WBCIS.

Enrollment of farmers

- Around 14.60 lakh Loanee and 68,000 of Non-Loanee farmers were enrolled under PMFBY & WBCIS during Kharif, 2016 season.

- RABI, 2016-17- action plan for enrollment of non loanee/tenant farmers prepared in co-ordination with P.D.(DRDA) SERP
- Wide Publicity is being given through All India Radio, T.V.Channels (scrolling), News Papers, Paadipantalu journals, Advertisements (Hoardings) on APSTRTC Busses etc under PMFBY, WBCIS during Rabi, 2016-17.
- Certificates of cultivation are being issued by MAO to the Non-loanee farmers who are not having LEC cards for increasing the Non-Loanee enrollment.
- Utilizing the service of SHGs to take up the Non-Loanee/Tenant farmers enrollment by authorizing the SERP as Service Provider.
- Village level meetings are being conducted with PRI representatives, VO members, farmers by the trained SHG Woman & MPEO and visit door to door of the farmers to sensitize them on the scheme benefits and also identify the Non-loanee/Tenant farmers.
- All the Insurance Companies (AIC, ICICI, Bajaj) are advising to coordinate the SHG Women/ MPEOs / Officials and provide the material required.

Crop Insurance Claim details under different schemes from 2005-06 to 2015-16 are given in Annexure – 5.16.

Agricultural Credit

The Annual Credit Plan for the year 2016-17 was Rs.83,003 cr. towards Agriculture Credit. Rs.43125.44 cr. (51.96 %) was disbursed up to Sept. 2016 under Agriculture Credit. An amount of Rs.34001.30 crores (56.67%) was disbursed under crop loans (short term loans) against the target of Rs.59999.95 crores and an amount of Rs.9124.14 crores (39.66%) was disbursed against the target of Rs.23003.44 crores under Agriculture Term Loans including allied activities. The disbursements upto September 2016 under agriculture are finalized by the State Level Bankers Committee (SLBC). Details about Agricultural Credit disbursement during 2016-17 (upto 30-09-2016) are given in Annexure 5.17.

The Annual Credit Plan 2015-16 for the State was Rs.65272 crore towards Agriculture Credit Rs.75448 crore (116%) was disbursed under Agricultural credit. An amount of Rs.57085 crore (119%) was disbursed under crop loans as against the target of Rs.48067 crore and an amount of

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Rs.18363 (107%) crore disbursed as against the target of Rs.17205 crore under Agriculture Term Loans including Allied activities.

Credit to Land Licensed Cultivators (Tenant farmers):

The State Government has taken up a major initiative to facilitate financing to the land licensed cultivators (tenant farmers) through passing an act named the “Andhra Pradesh land licensed cultivators Act No 18 of 2011” to provide loan and other benefits eligibility cards to land licensed cultivators (tenant farmers).

During 2015-16, Loan Eligibility Cards (LECs) were issued to 5,00,275 (Fresh & Renewal) Land licensed cultivators by the Revenue department. An amount of Rs.243.41 crores was issued under crop loans to 1,00,431 LEC holders. During 2016-17, the Revenue department has issued Loan Eligibility Cards (LECs) to 5,90,708 (Fresh: 1,80,847 and Renewal: 4,09,861) Land Licensed cultivators (Tenant farmers) in the state. An amount of Rs.182.12 crores was given to 71,940 LEC holders. Details are given in Annexure 5.18.

Issue of “Certificate of cultivation” to tenant farmers:

- The SLBC sub-committee on “Tenant Farmers & suicides” has resolved that the banks can extend the finance to “Certificate of Cultivator” (tenant farmers) upto Rs.1.00 lakh on hypothecation of crop and without insisting on collateral security as per the existing norms, basing on the certificate of cultivator details provided by the Agriculture department.
- The certificate of cultivators will facilitate more number of tenant farmers in getting bank loans. The certificate of cultivator’s details will be issued by the Agriculture Department.
- The Sub Committee members, NABARD, SLBC and major banks have discussed the modalities for issue of Certificate of Cultivators” on 13.6.2016 and finalised the modalities for issue of Certificate of Cultivators.
- So far 38,401 Certificates were issued to the tenant farmers and loaning started. Till date, an amount of Rs 6.26 Crores was disbursed to 1846 no. of farmers.
- The Department has also initiated necessary steps to maintain the online data base of the Tenant farmers

issued with Certificate of Cultivators on AP AGRISNET portal <http://www.apagrisnet.gov.in/> for easy access to the bankers.

Vaddileni Runalu and Pavala Vaddi Scheme on Crop Loans

To mitigate the financial burden of the farmers, the Government has announced Rythu Sri (vaddileni panta runalu/pavala vaddi) scheme on crop loans disbursed. The Government has announced Interest free crop loans to all the farmers up to Rs.1.00 lakh and pavala vaddi for crop loans from Rs.1.00 lakh to Rs.3.00 lakhs if repaid in time (maximum period of one year).

During 2015-16, an amount of Rs.31.10 Crores was settled under Vaddileni Runalu and Rs.0.87 crores was settled under Pavala Vaddi. During 2016-17, an amount of Rs.172 cr has been allocated against which Rs.119.23 crores have been settled to 8,67,082 farmer’s accounts under Vaddi leni Runalu and Rs.5.00 Cr was allocated against which Rs.3.16 Cr. has been settled to 44,598 farmers accounts under Pavala Vaddi (as on October 2016), and the settlement of claims is under progress.

Rythu Sathikara Samstha

Agricultural Debt Redemption Scheme to farmers:

Under this scheme, redemption amount of Rs.7565 crores has been released in all the districts towards 1st installment ADRS and the number of accounts redeemed are 54.98 lakh accounts. Out of this, an amount of Rs.4456 Cr has been adjusted to 23.46 lakh accounts towards One Time Settlement.

II Instalment

Runa Upasamana Arhatha Patram given to each family of beneficiaries which contain name of the farmer, account number, amount redeemed and balance amount to be redeemed. They are printed farmer wise on a tamper proof paper with good security features and cannot be duplicated or copied. Amount as indicated by banks through NIC portal is analysed and amount is being released on the same day from Rythu Sathikara Samstha to Nodal banks. Banks are advised to credit the amount to accounts of farmers on the same day.

Interest is calculated @ 10 % on II Instalment redemption amount for the period from 01.04.2015 to 31.03.2016 and paid along with II Instalment amount. An amount of Rs.3303 Cr is to be released to 36.39 lakh accounts towards II installment including 10% Interest. The process of releasing of II installment amount to farmers' accounts is under progress. As on 09.11.2016, an amount of Rs.2977 Cr has already been released and adjusted to 27.83 lakh accounts of the beneficiary farmers online towards II installment along with 10% interest. Details of debt redemption data is given in Annexure 5.19.

Horticulture Debt Redemption

Under this scheme, horticulture crop loans are redeemed @ Rs.10,000/- per acre up to maximum of Rs.50,000 covering 5 acres per family, with in the overall ceiling of Rs.1.50 lakhs which is applicable in the agricultural crop loans, subject to the limit of outstanding loan balance as on 31.12.2013. An amount of Rs 384.47 crores has been released and 2.22 lakh farmer accounts are redeemed.

Girijan Cooperative Corporation

An amount of Rs 1.88 Cr has been released to GCC towards redemption of 2771 loan accounts of Tribal Farmers.

Grievances Processing and Releases

After the issue of certificates and release of II instalment amounts under ADRS, several grievances are received from the farmers in the offices of Rythu Sadhikara Samstha. All the grievances are processed and necessary corrections are being done in NIC Portal. As on 06-03-2017, an amount of Rs 58.86 Cr has been released to 27879 loan accounts towards redemption amount under Phase V, VI, VII&VIII Grievances processing.

Important initiatives:

Rashtriya Krishi Vikasa Yojana – A GoI Initiative

Rashtriya Krishi Vikas Yojana (RKVY) is one of the flagship programme of Govt. of India with Central and State sharing 60:40. The scheme is being implemented by departments of Agriculture and Allied sectors. The State

Level Sanction Committee (SLSC) has sanctioned projects worth of Rs.416.02 crores during 2016-17, of which Rs.158.12 crores has been sanctioned to Agriculture Sector.

The state government is also implementing several initiatives as follows:

State Initiatives:

1. Organic Farming/Natural Farming

- The Programme is in implementation in 131 clusters @ 10/11 clusters per district.
- In each cluster 300 farmers are identified to adopt exclusively organic/natural farming. In Kharif 2016, 33422 farmers have adopted Organic/Natural farming.
- In each cluster 1MPEO, 1CA, 2CRPs & 30 Master farmers will act as a team to promote natural farming.
- 231 Farmer experts who are the best practicing farmers work for 18 - 21 days in each round and train farmers on need based inputs i.e., Preparation of botanical extracts, Ghana/Drava, Jeevamrutham etc. & promote NADEPs, SRI cultivation, RFSA methods etc.
- To meet the immediate requirement of farmers, the 300 farmers in the cluster are provided assistance as follows.
- Establishment of NPM shops on 50% subsidy @ Rs.50,000/- unit
- Procurement of Cows on 50% subsidy limited to Rs.10000/-unit.
- Establishment of Custom Hiring Centers (CHCs) on 50% subsidy @ Rs.2 lakh/unit
- New mode of extension with the help of Digital Green Foundation for production of Videos on botanical extracts, soil fertility management, success stories etc., and disseminate in villages with the help of Pico Projectors.
- Institution Building by organizing farmers into Rythu Mitra Groups (RMGs), Village Level Federations and Cluster Level Federations to bring sustainable improvements in the quality of life of farmers in 131 Organic Clusters of A.P through Orvakal Mandal Podupu Lakshmi Ikya Sangham (OMPLIS), Orvakal(V&M), Kurnool District.

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- The Village farmers' federation (VFF) will federate at cluster level into a Farmer Producer Organization (F.P.O) representing 1500-2000 farmers.

2. National Food Security Mission

The National Food Security Mission is under implementation in the State. Maize and Commercial Crops (Cotton, Jute and Sugarcane) is part of NFSM from 2014-15. 5 districts are identified for implementation of NFSM Rice, 7 districts for Coarse cereals and all the districts for pulses and certain districts are identified for commercial crops during 2016-17.

i. NFSM – Rice

a) Direct Seeding/Drum Seeding/MSRI:

Promoting Direct Seeding/drum seeding/MSRI for cost reduction and timely sowing. It is targeted to cover 20% of the total paddy area i.e. 5,00,000 ha during 2015-16 and covered in an area of 4,21,892 ha. During this year, the targeted area for direct seeding in Kharif is 353175 ha and covering in an area of 292975 ha and a target of 176801 ha under direct seeding has to be covered during Rabi 2016-17.

b) New High Yielding Varieties:

- Adoption of flood and lodging tolerant rice varieties (IRRI) like Swarna Sub-I, Samba Mahsuri Sub-I and CR 1009 Sub-I
- Drought resistant varieties like Sahbagi Dhan and IR 64 drt.
- Saline resistant variety BINA 11.
- Popularization of recently released varieties like NLR 34449, MTU 1075, MTU 1061, BPT 2231, NLR 3041 and pre released cultures like MTU 1121 (Resistant to BPH & Blast).

ii. NFSM – Pulses

a) New High Yielding Varieties

- Popularization recently released YMV resistant variety PU 31 & LBG 787 in Black gram
- Introduction & popularization of ICRISAT Red gram varieties ICPL-99050, ICP-7035, ICPL-14002, ICPL-161, ICPL-14001
- Popularization of Jaki-9218 in Bengalgram

b) Summer Pulses: Encouraging summer pulse by

providing supply of water saving devices on subsidy like oil engines, water carrying pipes & sprinklers.

- Redgram: Encouraging Redgram on Rice and Commercial Crop field bunds and covered an area of 88905 ha during Kharif-2016.
- Promotion of Redgram as inter crop in Ground nut, cotton, millets etc.

iii. NFSM – Coarse Cereals

To increase the area, production & consumption of millets a “Comprehensive Revival of Millets Programme” has been initiated during 2015-16. The scheme will be continued for 5 years to achieve the targeted goals on sustainable manner.

- New High Yielding Varieties: Popularization of recently released high yielding varieties
- Double / Poly cropping system: Expansion of area under poly cropping system under rainfed with Pulses/Oilseeds and also Rice fallow during Rabi.
- Organic farming: Encouraging organic farming in Tribal and High Altitude mandals.
- Post harvesting & processing for value addition.

iv. NFSM – Commercial Crops

- Front line demonstrations are being conducted for popularization of improved agronomic practices.
- Seed Village Programme in Mesta to ensure availability of quality seed.
- Frontline demonstrations on production technologies ensure location specific improved technology on nutrient use efficiency, weed management, efficient use of water along with the new varieties.
- Discouraged cotton area in light and red soils due to low productivity and high input cost. i.e., cotton area is decreased from 6.66 lakh ha (2015-16) to 4.51 lakh ha.
- Pink Boll worm incidence is noticed in Bt Cotton in Andhra Pradesh during 2015-16 in all major cotton growing districts. During 2016-17, for effective management of pink boll worm, 6.68 Lakh Pheromone Traps with Lures & Sticky liners were supplied to Cotton growing farmers.

- Demonstrations on Inter-cropping and single bud/ bud-chip technology in sugarcane to increase the income of the Farmer with lower input cost.

v. Dry Spell or Drought Mitigation:

Government of Andhra Pradesh had taken steps to mitigate crop yield losses occurred due to continuous drought or prolonged dry spells during the past few years. The State government has procured 13,334 Rain guns, and equal number of Sprinklers, 3,33,350 water carrying pipes & 7641 oil engines with an outlay amount of Rs.160.54 Crores. For this, mapping of district wise drought prone mandals based on past 12 years historic data & Geo tagging of water resources in drought prone mandals was done. An extent of 1,87,781 Ha was given protective irrigation in the first spell in the districts of Rayalaseema, Prakasam, Guntur and Krishna districts and an extent of 57,389 Ha. during the second phase is shown Table 5. During 3rd phase, protective irrigation with rainguns is being given in Ananthapuramu district in an extent of 9,966 Ha. till November, 2016.

Extension Reforms - Agriculture Technology Management Agency

Under the scheme “Support to State Extension Programmes for Extension Reforms” (ATMA), the entire state of Andhra Pradesh is covered with 60:40 central and state share. The Extension Reforms (ATMA) component has been included in the National Mission on Agricultural & Extension Technology (NMAET) as Sub Mission on Agricultural Extension (SMAE).

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 is a district level autonomous institution having membership of all key stakeholders involved in agricultural activities. It has the flexibility to receive funds directly. It has the key responsibility of disseminating all technology activities at the district level, having linkages with all the line departments, research organizations, non-governmental organizations and agencies associated and farmer organizations. Research and extension units within the district, such as KVKs, Department of Agriculture, Horticulture, Animal Husbandry, Fisheries, Sericulture, Marketing, etc. are its constituent members.

ATMA is supported by a Governing Board (GB) and a Management Committee (MC). Block level Farm Information and Advisory Centers (FIACs) have been created which are operated by a Block Technology Team (BTT) of technical advisors and a Farmer Advisory Committee (FAC), a group exclusively of farmers. Commodity oriented Farmer Interest Groups (FIGs) are being promoted at block / village level to make the technology generation / dissemination farmer driven and farmer accountable. In order to provide needed HRD support in innovative areas of extension delivery, a State Agricultural Management and Extension Training Institute (SAMETI) has also been established in the project states.

Strategic Research and Extension Plan (SREP):

One of the first tasks of ATMA is to facilitate preparation of Strategic Research and Extension Plan (SREP) of the district. The SREP is prepared through participatory methodologies such as Participatory Rural Appraisal (PRA) involving all the stakeholders and farmers. The SREP contains detailed analysis of all the information on existing farming systems in the district and research – extension gaps required to be filled-up. It also prioritizes the research – extension strategies within the district. It becomes the basis for development of work plans at blocks/ district level.

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All the ATMA districts have developed their respective Strategic Research and Extension Plans. As the validity of SREPs is five years, the State has already initiated the revisiting of the SREPs.

State Extension Work Plan (SEWP):

Based on the research-extension strategies given in the SREPs, the Block / district level plans for the year 2016-17 were developed by all the (13) ATMA districts as per the revised ATMA scheme guidelines and cost norms. The consolidated State Extension Work Plan for the year 2016-17 was developed at state level with an outlay of Rs.3591.61 Lakhs. The District Action Plans developed under the scheme should be processed consistent with Article 243 ZD of the Constitution.

GOI has given administrative approval for Rs.3591.61 lakhs for the year 2016-17 and released an amount of Rs 560.86 lakhs as Central Share (State has also released an amount of Rs.373.91 lakhs towards Matching State Share) as 1st spell duly revalidating the unspent balance amount of Rs 1553.03 lakhs for implementation of the activities. Accordingly the districts are organizing the need based activities like farmer trainings, demos, exposure visits, Kisan melas, field days, farmer scientist interaction etc.

Major activities during 2016-17:

- Fortnightly Agricultural Market Committee Level workshops with Block level Farmers Advisory Committee (BFAC) members, progressive farmers and Scientists on 1st & 16th of every month on crop condition and emerging issues.
- Demos organized on farm mechanization and Silage making.
- Direct seeding of paddy through drum seeder/SRI/SMSRI/ Machine Planting.
- Weed management in Direct sown/drill sown paddy.
- Demos on soil test based fertilizer recommendations.
- Low cost technology in Sugarcane (Frontline Demos) at RARS, Anakapalli.
- Demos on Poly cropping under innovative activities.
- IPM in Cotton for pink boll worm management.
- Promotion of Banana skirting, Short duration varieties

of Sweet corn, Pulses and ID crops cultivation, Millets cultivation etc.

- Red gram yield improvement demonstrations.
- Introducing new high yielding varieties i.e., Karizama, Raja, Asha (ICRISAT), Arjun, Mahalaxmi, Sidharda, Pinky (local variety matchalakandi) etc.
- Promotion of Drip Irrigation in Red gram and inter cropping in Red gram with Cotton.
- Modified row system in Red gram, promotion of transplanted Red gram.
- Application of Zinc, Gypsum and Boron in paddy & Ground nut.
- Wilt Management in Bengal gram by Trichoderma viridi.
- Avoid indiscriminate use of chemical fertilizers.
- Crop diversification from Tobacco to Pulses/Millets.
- Trainings organized on Pulses development, encouraging hybrid Red gram, Redgram as Inter – crop in BT Cotton for avoiding pink boll worm.
- Demos on Ragi with varieties PPR-1012, PPR-2885 and Vakula.

Component wise targets and achievements during the year 2015-16 and 2016-17 (upto October,2016) are given in Annexure 5.20.

Cooperation

Cooperatives have traditionally been promoted and organized in a democratic structural frame work for achieving social and economic betterment of the people. Different types of cooperatives are organized essentially to provide agricultural credit to member-farmers so as to enhance employment to its members and for alleviating rural poverty. Co-operative movement has completed over 100 years of service to farmers and other weaker sections of the society.

The department is mainly concerned with the administration of Cooperative Laws. The department has been pursuing a liberal policy towards Cooperatives to enable them function as autonomous and independent bodies. Cooperative week is celebrated every year starting from 14th November to promote better understanding of the principles and

philosophy of cooperation duly highlighting achievements of various sectors of the Co-operative movement. The website initiated GIS mapping of all societies with layered information for dynamic data access and spatial decision support systems. All the District Officers, convergence departments like APCOB, MARKFED, NABARD, NCDC etc. shall be given credentials to upload and access the website.

Mee Sahakara Seva

Mee Sahakara Seva, implementation of e- Governance in Cooperation department, is a World Bank project pending with Department of Electronics and Information Technology (Deity), Government of India with an estimated cost of Rs.617.16 Lakhs and approval is expected from Deity. The project provides for IT Infrastructure, system software for data centre, disaster recovery and provision of IT infrastructure for department offices at different levels and development of integrated software application for providing the services electronically.

E – PACS (Core Banking Solution)

E-PACS is a project for computerization of PACSs in selected 3 Districts with the assistance from Good Governance & Best Practices Projects under Digital India through Department of Electronics and Information Technology (Deity), Government of India, New Delhi. The Project Cost is Rs.33.66 Lakhs and approval from Deity is expected shortly. The project is proposed to be implemented in 600 Primary Agriculture Co-operative Societies at 3 Districts viz., West Godavari, Guntur and Prakasam Districts.

Computerization of PACS:

APCOB is to initiate the process for computerization of all the 2050 PACS under 13 DCCBs in the state. The main project objective is to develop a centralized PACS software solution that will significantly improve the PACS administration and operations in the State. Pilot in some selected PACS has been taken up by APCOB.

Rural credit co-operatives

The Rural credit co-operative structure is a three-tier structure currently with the Andhra Pradesh State Co-

operative Bank at the APEX level with 13 District Co-operative Central banks (DCCBs) at the district level and with 389 branches located in district headquarters and small towns and semi urban areas and 2050 Primary Agricultural Credit Co-operatives at the Village Level. Kisan Credit Cards have been issued to 15.52 lakh farmer members of the PACS. The total financial assistance received so far under revival package for Rural Cooperative Credit Structure is Rs.935.00 crore, including the State Government share of Rs.146.31 crore. The PACS are also actively participating in distribution of Agricultural inputs and also doing other Non-Credit business. The PACS are to provide more services to their members and generate income for themselves. NABARD is providing assistance to develop PACS as Multi Service Centres. So far 224 PACS have been converted into Multi Service Centres by utilizing the assistance from NABARD.

Loaning Programme 2016-17

A.P. State Co-operative Bank provided Rs.4844.76 crore (Kharif-Rs.4527.46 crore and Rabi-Rs.317.26 crore) as production credit to farmers through the Primaries and the District Co-operative Central Banks during the year 2016-17 (upto December,2016). Of this total amount, loans were distributed under Seasonal Agricultural Operations (SAO).

Long Term Loans

APCOB has refinanced an amount of Rs.534.92 crore to the DCC Banks under Long Term Agricultural Credit as against the loaning programme of Rs.637.00 crore allotted to all the 13 DCCBs during the year 2016-17.

Integrated Cooperative Development Projects

The ICD Project was implemented earlier in 11 districts of the State (except prakasam and West Godavari) with an amount of Rs.15119.31 lakhs.

In Phase-I, the ICD Projects under phase-I in (2) districts i.e Prakasam and West Godavari are completed by 31.12.2016 with an outlay of Rs.1854.52 lakhs and Rs.2721.31 lakhs respectively.

After completion of 8 years from the date of closure of the earlier ICD Project, the District will be eligible

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for implementation of the project under phase-II. For implementation of ICDP under phase-II, an amount of Rs.8.16 crores has been provided in the Budget 2016-17 in anticipation of the approval from the NCDC. The detailed project reports of the (3) districts i.e Kurnool, East Godavari and Chittoor districts were approved by the SLCC for an amount of Rs.186.60 crores, Rs.201.61 crores and Rs.242.45 crores respectively and submitted for onward recommendation to NCDC, New Delhi.

Marketing Co-operative Societies

There are 13 District Co-operative Marketing Societies (DCMSs), which undertake procurement of agricultural produce to enable farmers get minimum administered prices for their produce. The DCMSs procure seed on behalf of AP Seeds Development Corporation and also undertake procurement activities on behalf of MARKFED in addition to carrying on local business activities like sale of Fertilisers, Seeds, Consumable articles, Stationary items etc., to various departments located in the districts. The performance status of DCMSs is given in Table 5.9.

Table 5.9 : Performance of District Cooperative Marketing Societies

(Rs.in Lakh)

	2015-16	2016-17 (upto Nov,2016)
Share Capital Contribution	382.53	404.02
Business Turn over	35955.14	23978.63
Profit	376.59	297.97
Loss	52.47	388.98
Accumulated losses	121.14	27.30
Assets	9697.59	9335.98
Liabilities	10101.01	9350.79

Source: Cooperative Department

A.P. MARKFED

MARKFED is an apex organization for the Co-operative Marketing Societies (CMS) in the state for supplying agricultural inputs, cattle feed, fertilizers, gypsum, provisions and other requirements to private run institutions and government hostels. Subsequent to introduction of

single window system in the state in 1987, MARKFED offers its services through PACS at the primary level and DCMS in the district level. It undertakes procurement of other commodities under commercial account every year depending upon the market situation.

AP State Co-operative Union

APSCU is an Apex Cooperative institution in the field of Cooperative Education and Training. There are four Co-operative Training Centres (CTCs) located at Vijayawada, Rajahmundry, Ananthapur district and Y.S.R. Kadapa district in the State working under APSCU offering Diploma in Co-operative Management and Computer Applications. The APSCU Union is also publishing a Cooperative monthly magazine titled as "Sahakara Samacharam" for awareness building and propagation of Cooperative Principles and Cooperative Movement in the State.

Andhra Pradesh State Cooperative Rural Irrigation Corporation Ltd.

The Andhra Pradesh State Cooperative Rural Irrigation Corporation Ltd., undertakes drilling of in-well bores, surface bores, lift Irrigation schemes and construction of check dams etc. in Agricultural sector. The State Horticulture Mission / Horticulture department has identified the APSCRIC Ltd. as the "Nodal Agency" for construction of Farm ponds in Horticulture fields.

Rural electricity supply cooperative societies

The key objective of the Rural electric supply cooperative societies is to purchase electricity in bulk from the nearest DISCOM and distribute it to domestic, industrial and agricultural consumers in their area of operation. Three RESCOs are working under the administrative control of Cooperative Department viz., RESCOs at Kuppam (Chittoor district), Anakapalle RECS Ltd, Kasimkota (Visakhapatnam district) and RECS Cheepurupalli (Vizianagaram district).

Cooperative Tribunal, Vijayawada

There were two Cooperative Tribunals in the State located at Visakhapatnam and Vijayawada .Section 76 of the

Andhra Pradesh cooperative Societies act, 1964 provides two different forums for appeal on the orders passed by the officers under the provisions of the APCs Act, 1964. Tribunals were constituted to hear the appeals against orders, decisions, awards etc passed under APCS Act, 1964 and they have original jurisdiction over the disputes filed under AP MACs Act, 1995. As per the orders of the Government, the Cooperative Tribunal, Visakhapatnam was closed by 30.09.2016 and the cases were transferred to the Cooperative Tribunal, Vijayawada. 422 cases pending at the end of 31.12.2016.

Consumer Cooperative Stores

Consumer Cooperatives have been assigned an important role in distribution of good quality consumer articles at competitive prices to control price line in both urban and rural areas. About 221 Consumer Cooperative Societies are functioning in the State. Consumer Cooperative Societies are also undertaking distribution of textbooks, notebooks, cloth, crackers and supply of various stationary items and provisions to Government hostels etc.

Labour Contract Cooperative Societies

Labour contract Cooperative Societies function in a 3 tier structure i.e., Primary, District and State Level-1923 LCCS with 59072 members in the state, now all the District Level Federation and State Level Federation are under liquidation.

Cooperative Joint Farming Societies

Joint Farming Cooperatives also work in a three-tier structure i.e., Primary Level- 1,452 CJFS and membership of 1,35,334; District Level-13 District Federations of Cooperative Joint Farming Societies and State Level-Andhra Pradesh State Cooperative Joint Farming Societies Federation Ltd.

Audit

There is a separate audit wing for audit in cooperative department. During 2015-16, 19063 cooperative societies were programmed for audit, of which 5778 are under aided category and remaining 13285 are under unaided category.

Horticulture

The agrarian state of Andhra Pradesh is heading towards a value addition platform from the conventional production approach. 'Horticulture' sector has been recognized as an essential component for food and nutritional security in the State. Efforts are being made to make Andhra Pradesh maintain its supremacy in the production of Oilpalm, Papaya, Citrus and Chillies, Mango and Tomato. Micro irrigation through drip and sprinkler mechanisms have proved effective both in terms of cost and output. The government is implementing strategies to make Rayalaseema as a Horticulture hub. It is targeted to cover one million farmers in next three years under Farmer Producer Organisations for Agriculture & Allied sectors in order to establish forward and backward linkages and to promote the products of Andhra Pradesh to global standards. It contributes about 8.18% of the State GVA and is moving towards value enhancement in addition to focus on production. The Government is keen to encourage horticulture in a big way and it is expected that value addition from this sub-sector will soon cross the agriculture share

Wide range of agro-climatic conditions of Andhra Pradesh are conducive for growing a large variety of Horticultural crops, including, root and tuber crops, ornamental crops, plantation crops like coconut, cashew and cocoa etc. During the year 2016-17, the Government has set a target of 20% growth in output and to achieve this, there is need for new initiatives, new interventions and implementations with the support and coordination of farmers and entrepreneurs.

Rain gun technology for drought mitigation in drought prone districts

Area covered under micro irrigation: 6.93 lakh ha.

AP stood 1st rank in Oilpalm Cultivation

Promotion of Horticulture Activities

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The strategy of convergence with MGNREGS for better utilization of labour, resources and empowerment of backward communities, is aligned with the horticulture development in the state. Horticulture has emerged as an indispensable part of Agriculture and is providing opportunities for sustaining large number of agro-industries which have created employment avenues to semi-skilled and unskilled labour force.

Promoting Post-Harvest Management practices through establishment of Pack houses, Cold storages, Ripening Chambers and Processing units to reduce Post-Harvest losses are fast emerging as the key instruments targeting horticulture exports.

Growth of Horticulture

Horticulture crops were grown in an area of 15.28 lakh hectares and production was 198.45 lakh tonnes during the year 2015-16 as per final estimates. Details about the area and production of horticulture crops during 2015-16 and 2016-17 (A) are given in Annexure 5.21. The details about the principal horticultural crops area and production in 2016-17 (1st Advance Estimates) are given in Table 5.10 below.

Table 5.10: Horticultural Crops – Area and Production during 2016-17(A)

Crop Category	Area (lakh ha.)	Production (lakh MTs)
Fruits	5.76	106.63
Vegetables	2.28	55.69
Flowers	0.19	1.64
Plantation Crops	4.58	26.10
Spices	2.37	12.44
Medicinal & Aromatic Plants	0.01	0.005
Total	15.41	202.50

Source: Horticulture Department.

Important Programmes

Several farmer oriented activities are being taken up to encourage adoption of modern technologies, evolving sustainable farming practices, provision of post-harvest infrastructure facilities and supplying knowledge inputs to the farming community.

Schemes are being implemented by the Department include: Pradhana Mantri Krishi Sinchai Yojana (PMKSY) APMIP, Mission for Integrated Development of Horticulture (MIDH), Rashtriya Krishi Vikas Yojana (RKVY), National Mission on Oilseeds and Oilpalm Program under Mini Mission-II (NMOOP) and Promotion of Horticulture Activities

Pradhana Mantri Krishi Sinchai Yojana (PMKSY) APMIP

AP Micro Irrigation Project (APMIP) is a first comprehensive and unique project being implemented in a big way in Andhra Pradesh for enhancing crop productivity by improving water use efficiency through Micro-irrigation systems to benefit the farmers. It is an ongoing project and 6.93 lakh ha. has been covered under Micro irrigation in all the districts in the State, benefiting 6.25 lakh farmers.

The aim of the Project is to improve the economic conditions of the farmers by conserving water, bringing additional area into cultivation with the available water resources and also enhancing the crop productivity, quality, judicious usage of ground water, conserving ground water resources, saving in power consumption and saving in cost of cultivation.

In view of deficit Rainfall, Rain shadow regions, unpredictable rains and considerable depletion of ground water, drip irrigation is a viable option for farmers. To achieve the concept of “More crop per Drop”, Micro irrigation is being taken up particularly in the districts of Rayalaseema, which are most drought prone and backward areas.

From 2015-16 onwards, Micro Irrigation is being implemented under PMKSY with funding pattern of 60:40 between central and state Government. Government of India (GOI) allocated Rs.260.00 Crores for implementation of Micro Irrigation in an area of 1.50 lakh ha. during the year 2016-17. So far, an area of 52,094 ha. has been covered under the scheme under Micro Irrigation. Andhra Pradesh Ranks 2nd next to Gujarat in implementation of Micro Irrigation programme.

Outcome of Micro Irrigation:

NABCONS Consultancy Services and Agriculture Finance Corporation (AFC) India Ltd., have conducted 3rd party

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verification and evaluation of Micro Irrigation system installed during 2012-13 to 2014-15. The impact of Micro Irrigation on Crop yield and Net Income per ha. and savings in water and savings in energy, as revealed by the reports are shown in Table.5.11, 5.12 and 5.13 respectively.

Table.5.11 Production on Impact of Micro Irrigation

Sl. No	Name of the crop	Crop yield Tons per Ha.		
		Before MI	After MI	% of increase
1	Mango	10	12	26
2	Sweet Orange	13	16	27
3	Acid lime	10	13	25
4	Guava	10	13	25
5	Banana	45	55	22
6	Papaya	72	87	21
7	Vegetables	22	27	22
8	Tomato	28	36	28
9	Sugar cane	64	82	29
10	Maize	9	11	22
11	Mulberry	30	37	23

Source: Horticulture Department

Table.5.12 Net income per ha on Impact of Micro Irrigation

Sl. No	Name of the crop	Net Income per Ha (Rupees lakhs)		
		Before MI	After MI	% of increase
1	Mango	0.49	0.73	50
2	Sweet Orange	1.88	2.37	27
3	Acid lime	1.80	2.25	25
4	Guava	2.00	2.50	25
5	Banana	2.81	4.00	42
6	Papaya	7.00	8.88	27
7	Vegetables	1.02	1.42	40
8	Tomato	1.41	1.97	39
9	Sugar cane	0.57	0.93	64
10	Maize	1.33	1.62	22
11	Mulberry	0.63	0.88	40

Source: Horticulture Department

Table.5.13 Savings in water and Energy on Impact of Micro Irrigation

Sl. No	Crop	Water Saved in (mm) per ha per season				Energy Saved (kwh) per ha			
		Flood Irrigation	Drip Irrigation	Net saving	% of saving	Flood Irrigation	Drip Irrigation	Net saving	% of saving
1	2	3	4	5	6	7	8	9	10
1	Sweet Orange	1136	530	606	53	1307	610	697	53
2	Sugarcane	1634	748	886	54	1881	861	1020	54
3	Pomegranate	1363	663	700	51	1569	763	806	51
4	Brinjal	891	408	483	54	1026	470	557	54
5	Papaya	2196	1060	1136	52	2528	1220	1307	52
6	Mango	1114	520	594	53	1283	599	684	53
7	Tomato	994	504	490	49	1145	580	564	49
8	Chilli	994	480	514	52	1145	553	592	52
9	Banana	2196	1087	1109	51	3033	1501	1532	51

Source: Horticulture Department

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So far 1.51 lakh farmers have registered their application in Mee-Seva Centers covering an area of 1.82 lakh ha as against the target of 1.50 lakh ha. and the achievement is 0.52 lakh ha.

During the year 2016-17, Rain gun technology for drought mitigation was implemented in drought prone districts of Ananthapuramu, Chittoor, Kadapa, Kurnool, SPS.Nellore, Prakasam, Guntur and Krishna and provided protective irrigation in an area of 4.00 Lakh acres during Kharif 2016 for crops like groundnut, pulses etc. The same are being used for Redgram and Pulses during Rabi 2016-17.

Cabbage with Drip



Chrysanthemum with Drip



Bittergourd with Drip



Coconut with Drip



Rain guns



Mission for Integrated Development of Horticulture (MIDH)

Mission for Integrated Development of Horticulture (MIDH) is a Government of India scheme being implemented by subsuming six schemes on Horticulture development including NHM as per the revised cost norms and pattern of assistance. MIDH is being implemented with an outlay of Rs.106.72 crore with the GoI and GoAP share in the ratio of 60:40 basis during the year 2016-17.

The major components covered under MIDH are:

- a) Area expansion (Perennial and Non-Perennial crops),
- b) Rejuvenation of senile orchards,
- c) Protected Cultivation,
- d) Post Harvest Management,
- f) Creation of Water Resources (Farm Ponds),
- g) Farm Mechanisation and
- h) Capacity Building.

State Horticulture Mission:

A Centrally Sponsored Scheme – the Horticulture Mission, is being implemented in the State by the State Horticulture Mission. The Mission was launched to promote holistic growth of horticulture sector through an area based regionally differentiated strategies. The focus of the programme is to provide comprehensive development of all the sub-sectors of horticulture so as to provide additional income to horticulture growers. This programme is under implementation in 9 districts (Srikakulam, West Godavari, Guntur, Prakasam, SPS Nellore, Chittoor, YSR, Ananathapuramu, and Kurnool) and two tribal areas of Rampachodavaram of East Godavari and Paderu of Visakhapatnam districts. Andhra Pradesh, with its high growth trajectory, a large population, significant dependence on agriculture and horticulture and an extensive coastline is likely to become a significant player in production and marketing of Horticultural produce.

Production of Quality Plant Material

Quality plant material plays a vital role in sustainability of gardens especially perennial fruit crops. Small and model nurseries were encouraged to produce quality plant material by providing assistance for infrastructure under NHM to cater to the requirement of plant material for bringing additional areas with improved varieties and rejuvenation programmes.

Fifteen Horticulture farms were established producing around 10.00 lakhs of quality plant material. Nursery Act was introduced for regulation of supply of quality plant material to farmers.

Post-Harvest Management

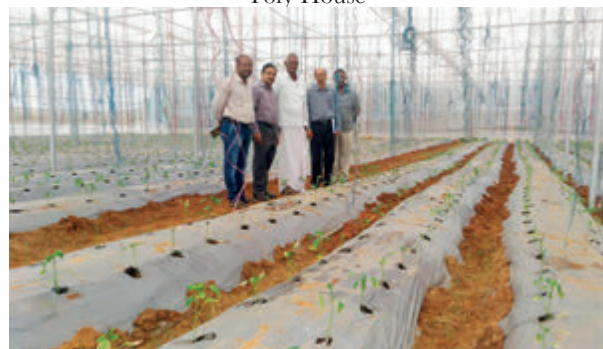
Horticulture crops are highly perishable and require special attention on harvesting, handling, packaging, storage and processing operations. The focus was on providing pre-harvest tools and development of post-harvest infrastructure facilities like pack houses, cold storages, refer vans, ripening chambers etc. During 2016-17 (up to October, 2016), assistance was provided for 8 cold storage units, 4 ripening chamber, 8 low cost ripening chambers and 336 pack houses. post-harvest management activities like reduction of losses and improvement of the quality of horticultural produce is important for enhancing value of the produce.

Several measures were taken up under MIDH to preserve the quality of various horticultural products and for primary handling, storage and transportation. Particularly, establishment of ripening chambers for Banana, which helped realize better price at the farm gate. Establishment of Cold storages with NHM subsidy is catering to agriculture produce as well as horticulture produce fetching better market price to the farmers. Pollution-free new technologies in Cashew processing like Steam boiling method, which increase the quality of the produce, were also encouraged.

Shadenet House



Poly House



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Rashtriya Krishi Vikasa Yojana

Rashtriya Krishi Vikasa Yojana (RKVY) aims to increase public investment in infrastructure etc., and provide flexibility and autonomy in the process of planning and executing schemes in the horticulture sector. RKVY scheme in Andhra Pradesh is proposed to implement major activity in non-SHM districts viz., Krishna, East Godavari, Visakhapatnam and Vizianagaram while the projects under integrated vegetable production which are not covered in SHM are being implemented in all the districts.

Rastriya Krishi Vikas Yojana (RKVY) aims at achieving 4% annual growth in the agriculture sector by ensuring a holistic development of Agriculture and allied sectors. Under RKVY, in Horticulture, the activities that are being taken up are;

- Production and distribution of good quality plant material to meet the requirement for bringing new area under fruit plantation.
- Encouragement of structures like pandals and trellis for quality production in case of Gourds and Tomato.
- Encouragement of nurseries and cultivation of high cost intensive cultivation of summer vegetables in Shade net houses to overcome the High temperatures.
- Encouragement of post-harvest structures and implements to reduce post-harvest losses and promote new technologies to ensure continuous supply of Horticulture produce.
- Conservation of natural resources by adopting Good agricultural practices in production of horticultural crops.

During 2015-16, an amount of Rs.30.86 Crores was utilized for implementation of horticulture activities under RKVY and an amount of Rs.61.67 Crores was allocated during 2016-17.

Permanent Pandals



Trellies



National Mission on Oil Seeds and Oilpalm Programme

Andhra Pradesh ranks 1st in cultivation of Oilpalm with 1.49 lakh Ha with 1.04 lakh farmers in 8 districts of the state and spreading over in 225 mandals. The average productivity of bearing plantations is 19.81 tons Fresh Fruit Bunches (FFB) per Ha., Out of 1.49 lakh Ha., the bearing area is 1.12 lakh Ha from which the production is 11.47 lakh MTs of FFB with 1.93 lakh MTs of COP during last year. West Godavari district has highest area under Oilpalm i.e., 78427 Ha.

13 Processing units were established by Oil Palm Companies with Capacity of 240 MT/Hr., which are working with Government under this programme. The companies have a buy-back arrangements for purchase of Fresh Fruit Bunches (FFB's) from farmers in the factory zones allotted them at the rate fixed by the Government.

During 2015-16, the approved outlay was Rs.57.70 Crores with 60:40 funding pattern between Central and State Governments. Under Oilpalm area expansion programme an area of 5284 Ha. has been covered with 4116 beneficiaries and incurring an expenditure of Rs.30.62 Crores.

An amount of Rs.58.20 Crores has been allocated for the implementation of NMOOP Programme with GoI & GoAP share in the ration of 60:40 basis for the year 2016-17. An area of 6323 Ha was identified with 3458 beneficiaries upto 31st October 2016 and an area of 2407 Ha was covered so far and 1859 farmers benefited.

Oilpalm plantation with Intercrop



Area Expansion of Papaya



Oilpalm plantation with Drip



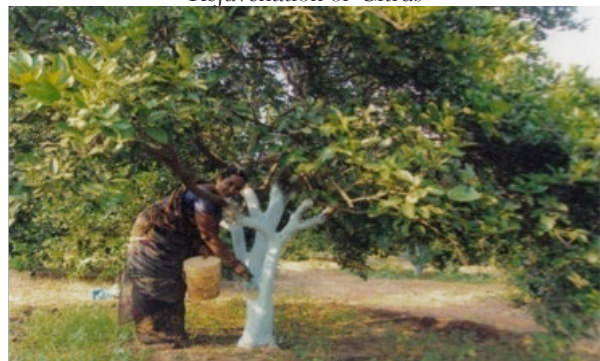
Area Expansion of Loose Flowers



Promotion of Horticulture Activities (State Plan)

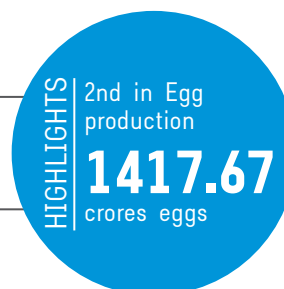
Under Primary Sector Mission lot of emphasis has been given to Horticulture sector as it has been identified as best growth engine for overall development of the primary sector. Under “State Development Plan”, an amount of Rs.100.48 Crores utilized during the year 2015-16 and an amount of Rs.100.00 Crores is allotted for the year 2016-17 for innovative schemes like Area Expansion (Cultivation of Cocoa in Coconut, Loose Flowers, T.C. Banana, Papaya, Pineapple, Pomegranate, Potato and Cashewnut), Canopy Management in Cashew, Protected Cultivation (Green houses, Shadenet houses), Creation of water resources (Farm Ponds), Integrated Pest Management (IPM) in Fruits & Vegetables, Post-Harvest Management (Pack Houses, Onion Storage Structures, Refer Vans, Ripening Chambers, Cold Storages, Silapauline Sheets, Chilli Dryers, Plastic Crates etc.,) and Human Resource Development.

Rejuvenation of Citrus



Creation of Farm Ponds





Animal Husbandry

4th in Meat production (5.66 lakh Metric Tons)

5th in Milk production (108.17 Lakh Metric Tons)

No. of Veterinary Institutions--3119

The livestock sector has emerged as an alternative and dependable source of income generation even during the times of severe drought. This is the sector where the poor contribute to growth directly instead of getting benefit from growth generated elsewhere. Animals provide nutrient rich food products, draught power, dung as organic manure and domestic fuel, hides & skin, and are a regular source of cash income for rural households. They are a natural capital, which can be easily reproduced to act as a living bank with offspring as interest, and an insurance against income shocks of crop failure and natural calamities.

Livestock have been an integral component of India's agricultural and rural economy since time immemorial, supplying energy for crop production in terms of draught power and organic manure, and in turn deriving their own energy requirements from crop byproducts and residues. The progress in the sector results in balanced development of the rural economy particularly in reducing the poverty amongst the weaker sections. Livestock provides stability to family income especially in the arid and semi-arid regions of the State. Livestock are the best insurance against the vagaries of nature due to drought, famine and other natural calamities.

Growth in livestock - inclusive and pro-poor

Most of the animal farming activities such as fodder collection, feeding, watering, healthcare, management, milking and household-level processing, value addition and marketing are performed by women. The growth in livestock sector is demand-driven, inclusive and pro-poor. The rate of return on investment from Livestock sector is comparatively

very high. Livestock sector apart from contributing to the state economy in general and to agricultural economy in particular, also provides employment generation opportunities, asset creation, coping mechanism against crop failure and social and financial security. Livestock is the main source of animal protein for the population. Demand for animal food products is responsive to income changes, and is expected to increase in future.

Milk, Meat and Egg - the key growth drivers

The Animal Husbandry, from a humble beginning of backyard poultry, has grown into a dynamic industry. Milk and Meat production has also made a quantum leap with the production increasing substantially. Andhra Pradesh has some of the richest livestock resources in the country and is one of the most advanced states in Livestock sector. The State attained a prominent position in the country in Livestock Sector over the years because of its increasing livestock resources, gradual enlightenment of farmers and the dedicated and sustained efforts of the Government. The State Government identified Livestock Sector as the most promising sector and Milk, Meat and Egg are the key Growth Engines. Milk is the single largest commodity contributing highest economy to the State.

Effective veterinary and animal husbandry services are critical in achieving the significant production levels. Welfare schemes implemented by the Government for dairy, sheep and poultry units helped the rural masses enormously in bridging income gaps. This besides conserving domestic biodiversity has become a means of producing food in dry lands without depleting ground water resources. A sizable number of families owning sheep and goat have already been covered with livestock insurance.

The key objectives of the government include building the health of the Nation by increasing the availability & quality of Animal origin foods like Milk, Meat and Eggs to the human population through scientific breeding, feeding and health management of livestock & poultry. Efforts are being made to improve the wealth of the nation by providing necessary technical support to Livestock bearers there- by improve livelihoods of farm families.

The state stands 2nd in Egg production (1417.67 crores), 4th in Meat production (5.66 lakh Metric Tons) and 5th in Milk

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production (108.17 Lakh Metric Tons) in the country as per the estimates of GoI during 2015-16.

Popular breeds – pride of the state

Andhra Pradesh takes pride in the country in having famous world renowned Livestock breeds like Ongole and Punganur in cattle, Godavari Buffaloes, Nellore in sheep and Aseel in poultry. As per Livestock Census 2012, 62.54 lakh out of 126.65 lakh (49.38%) households in the state are engaged in Livestock / Livestock related rearing activities. The Livestock resources in the state include 47.16 lakh Cattle, 64.62 lakh Buffaloes, 135.60 lakh Sheep (1st in country), 44.96 lakh Goats, 1.57 lakh pigs, 0.13 lakh other Livestock, 294.03 lakh total Livestock & 805.83 lakh poultry (3rd in country).

The government will implement the fodder security policy, which is first of its kind in the country, having various components to provide quality feed and fodder to the Livestock.

Support to the livestock sector

Animal Husbandry schemes have been formulated to attain well-laid National policies aimed at improving livestock production, fighting protein hunger, improving nutritional standards of human population and provision of technical support for the maintenance and improvement of livestock.

With sustained efforts, the state government is providing fodder to livestock at the doorsteps of the farmers below poverty line (BPL) with 50% subsidy ensuring fodder security under Kutumba Vikasam. The government endeavours to insulate the farmers from the vagaries of agriculture by focus on livestock sector to ensure that every household has a monthly income not less than Rs.10,000.

Growing contribution to GSDP

The contribution of Livestock Sector to the Gross State Domestic Product (GSDP) is Rs.59,796 Crores at Current Prices, which is 9.32% of the GSDP as per Advanced Estimates of 2016-17. There is an increase of 15.99% over 2015-16. The GVA from Livestock Sector surpassed that of Agriculture for the first time during 2015-16.

Livestock population as per 2012 Census is shown in Table

5.14. District wise Livestock population as per 2012 Census is given in Annexure 5.22.

Table 5.14 Livestock population in A.P

(No. in lakh)

Category	As per 2007 census	As per 2012 census
Cattle	54.73	47.16
Buffaloes	82.30	64.62
Sheep	121.20	135.60
Goat	48.24	44.96
Pigs	2.06	1.57
Poultry	745.37	805.83

Source: Directorate of Animal Husbandry

Though there is reduction in the total Cattle and Buffalo Population, the production and availability of nutritious food and supplemental income to farmers has increased due to perceptible increase in Crossbred Cattle and Graded Murrah Buffalo population especially female / Milch animals as per the latest Livestock Census, 2012.

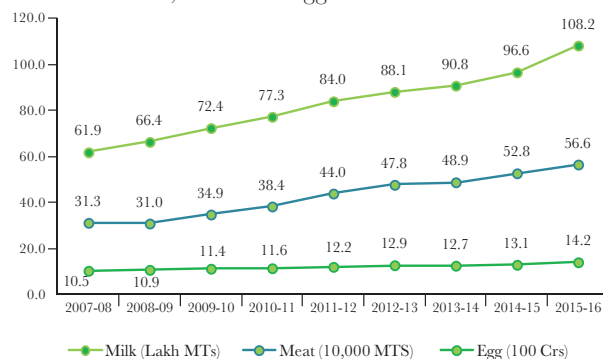
The production of Milk, Eggs and Meat is shown in the following Table 5.15 and chart 5.4.

Table 5.15: Production of Milk, Meat & Eggs

Growth Engine	Unit	2014-15	2015-16	2016-17 (upto Sep 2016)
Milk	L.MTs	96.56	108.17	59.57
Growth	%	6.31	12.02	---
Meat	L.MTs	5.27	5.66	3.14
Growth	%	7.77	7.40	----
Eggs	cr.Nos	1309.58	1417.67	778.72
Growth	%	2.90	8.24	---

Source: Animal Husbandry Department.

Chart 5.4: Milk, Meat and Egg Production



Source: Animal Husbandry Department

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Production estimates of milk, meat and eggs from 2004-05 to 2016-17 (upto September 2016) are shown in Annexure 5.23 and district wise production are given in Annexure 5.24. Details of district wise Veterinary institutes are given in Annexure 5.25.

State Plan Schemes 2016-17

1. Cattle & Buffalo Breed Development

a) New Artificial Insemination Centres

This is a new scheme meant for expansion of breeding operations involving NGOs with experience in implementation of livestock projects. The Integrated Livestock Development Centres will be established in uncovered areas where there are no established facilities for breeding operations by the Department. 1000 Breedable cattle will be covered per each centre which may increase or decrease marginally as per ground feasibility. This will be implemented through MOU approved by the Government. An amount of Rs.200.00 Lakh is allocated for this purpose.

b) Promotion of Indigenous Breeds:

This is an existing scheme under which breed improvement activity will be taken up for conservation of Desi / Indigenous cows and promotion of sustainable Organic farming will be promoted in a big way. An amount of Rs.10000/- per animal is provided towards transportation and insurance premium for Indigenous Animals (GIR, Shahiwal etc.) purchased by the farmers. The Financial Out lay for this component is Rs.200.00 Lakh.

c) Interest Subsidy for Dairy farms:

This is a new scheme designed to promote entrepreneurs in dairy farming for establishment of new Dairy farms / expansion of existing Dairy farms in the State. Interest subsidy will be provided over and above 3% interest charged by the banks. The Financial Out lay for this component is Rs.50.00 Lakh.

d) Sexed Semen/Sexed semen Lab/ ET lab:

This is a new scheme to be implemented in selected pockets of the State involving AP livestock

Development Agency (APLDA). 5000 doses of sexed semen will be procured and piloted to produce additional female calves. Subsidy on each dose of sexed semen is 75% and the remaining 25% of the cost of sexed semen will be borne by the concerned beneficiary. Sexed Semen will be supplied to farmers on first cum first serve basis. The funds allocated to this activity are also meant for training the staff within or outside the state for implementation of the activity. The funds can also be utilized for import of superior quality embryos (HF, Jersey etc.) and also for Establishment of Sexed semen lab/ Embryo Transfer Technology (ET) lab. The implementing agency is Andhra Pradesh Livestock Development Agency (APLDA) with Financial Out lay of Rs.50.00 Lakh.

2. Feed and fodder Development Programme:

The fodder security policy, which is first of its kind in the country, having various components to provide quality feed and fodder to the Livestock will be implemented.

i. Promotion of Silage

This is an ongoing scheme with the objective to make availability of nutritious green fodder to the livestock throughout the year. Through this activity, the department will promote silage production activity in the form of bales / pit silage / tower silo / Bunkers etc., The activity will be implemented through involvement of farmers / entrepreneurs / NGO / SERP / PPP partners/any other agency. To increase the scope of activity, the programme will be implemented in convergence with other schemes. It will be promoted in PPP mode wherever possible. The existing subsidy pattern will be followed and the beneficiary contribution @ Rs.2/- per kg silage will be borne by the beneficiary.

ii. Hydroponics & Azolla

This is an ongoing scheme. The Hydroponics technology will be promoted to enable the farmers to produce green fodder where there is constraint for land to grow fodder. Azolla, an algae will be promoted as an alternative to replace oiled cakes in the concentrate feed to some extent to reduce cost of production in the Livestock Production. 75%

subsidy for Hydroponics units and 90% subsidy for Azolla units will be extended to the beneficiaries as per the provisions of Fodder Security Policy and the remaining non-subsidy component will be borne by the beneficiaries.

iii. TMR Fodder blocks

This is an ongoing scheme. It enables farmers to get access to the balanced / complete ration to their animals in the form of blocks, particularly those farmers who do not own land (for fodder production) to enable them confidently take up dairying activity. The concept is known to reduce production costs. This will be promoted in PPP mode. The existing subsidy pattern will be followed and the beneficiary contribution @ Rs.3.50 Ps per kg of TMR Fodder block will be borne by the beneficiary.

iv. Convergence with MGNREGS to match for material cost

This is a new scheme. The scheme is meant to promote large scale fodder production in convergence with Rural Development Department. The AH department will provide matching funds of material component over and above the 40% material cost involved under MGNREGS.

v. Ration Balancing Programme(RBP)

This is a new scheme. This will be promoted to create awareness amongst the milk producers for optimization of milk production by efficient utilization of locally available feeding resources. This will be implemented involving entrepreneurs / Gopalamitras / Department staff /NGO/ any other agency.

vi. Fodder Seed Supply

This is an ongoing scheme. Improved fodder seed will be supplied to the farmers to take up large scale fodder production to meet the fodder requirement of high yielding animals. The fodder seed will be supplied on 75% subsidy to the farmers. The Financial Out lay is Rs.500.00 Lakh.

vii. Fodder Banks

This is an ongoing scheme. Storage facilities for fodder will be created in strategic locations

to supply fodder to livestock farmers in scarcity periods. Infrastructure facilities will be provided by the Department through RIDF / MGNREGS in convergence with Rural Development Department) under State Development Plan. The Financial Out lay is Rs.200.00 Lakh.

viii. Feed and fodder supply

This is an ongoing scheme. Under this program, feed and fodder of different categories will be supplied to the farmers / Goshalas on subsidy basis @Rs.2/- per kg of Silage @Rs.3/- per kg of dry fodder and @ Rs.3.50/- per kg of TMR fodder blocks and Rs.4/- per kg of concentrate feed irrespective of their procurement cost throughout the year / critical period as part of initiative to achieve Double Digit Inclusive Growth in Livestock Sector. Preference will be given for supply of silage bale / TMR fodder block / Silage bales / TMR blocks / Concentrated Feed / Dry fodder to Livestock Farmers / Goshalas on subsidized cost to prevent distress and also to Government Livestock Farms on reimbursement basis during critical periods. The Financial Out lay is Rs.1613.00 Lakh.

3. Implementation of Livestock Development Programmes Management / Health Care

i) Pregnant and Lactating Animal care (Ksheerasaagar)

This is an ongoing scheme, designed to reduce Inter Calving Period in milch animals and to increase the life time milk production. The feed & fodder, healthcare and insurance support including other logistics will be given for a period of six months (Last 3 months of pregnancy and first 3 months of lactation). Implementation of this scheme will result in an additional 360 litres of milk and one extra calf can be obtained from each animal in its life time. The scheme will be implemented on 75% subsidy. The logistics including data entry will be on 100% subsidy. Financial Out lay for this program is Rs.1000.00 Lakh.

ii) Animal Hostel

This is an ongoing scheme. Common infrastructure facilities required for animal management, dung & urine management will be provided free of cost, working capital in the form of revolving fund will

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also be provided. This will be implemented in convergence mode with RD department involving SHGs/ unemployed youth/ Dairies/ NGOs, etc., The Financial Out lay for this component is Rs.50.00 Lakh.

iii) Suphalam

This is an ongoing scheme. The objective of the program is to get one calf once in 15-18 months from milch animals /heifers through fertility Management of infertile animals. The provision available under this sub-component can also be utilised to tie-up medicines required for the animals covered under Ksheerasaagar scheme and to meet logistics. All infertile animals available in the target villages will be identified through screening of animals and appropriate treatment package will be given under the supervision of a graduate Veterinarian till the animal is conceived or advised for culling.

iv) Organization of Janmabhoomi – Mavooru programme

Animal Health Camps will be conducted in all the Gram Panchayats / Wards of the State. The activities will be deworming, vaccinations, fertility management, treatment of sick animals, technology transfer, capacity building, plantation of fodder trees in all possible locations under neeru-chettu / Polam Pilustondi etc.

v) Mobile Veterinary Services (NTR Sanchara Pashu Vydy Sevalu)

This is a new scheme. The Mobile Veterinary Services (NTR SPS) will provide service to the farmers in the state, at the rate of one each per Animal Husbandry division for 45 divisions in the first phase. This number can gradually be extended to (180) erstwhile blocks based on the feedback on the utility of the scheme. This innovative program will be implemented involving entrepreneurs/ NGO/ any other agency in PPP mode. The amount earmarked for this activity will also be used to assist NGO/PPP partner as grants-in- aid to operate the scheme.

4. Infrastructure support to Dairy/Sheep/Poultry Sector:

The government is assisting the large population under livestock sector in a big way and is supporting them through implementation of various schemes including infrastructure support to dairy/sheep/poultry activities. The key schemes being implemented are:

- BMCU in potential villages,
- Milk processing units/equipment,
- Support to Farmer Producer Organisation (FPO),
- Milk Market Outlets Breeding rams production/ replacement and exchange,
- Avikabandhu,
- Sheep Shelters,
- Interest subsidy for setting up of new Sheep / Goat farms,
- Feeding support to pregnant ewes,
- Meat Market Outlets/ Meat Processing Unit/ Mobile Sheep Health Care Units,
- Interest Subsidy for setting up of big Poultry farms,
- Ultra-Modern Laboratory for Disease Diagnosis,
- Support to small vendors and EDEG,
- RBP Hatchery (Rural Backyard Poultry),
- Power Tariff,
- Cold storage facilities/egg powder/Chicken breast processing units/Establishment of modern slaughter house / Export facilities,
- Support to other activities,
- Calf Rearing Programme (NSP), Vaccine production /purchase/testing/disease diagnosis and control,
- Strengthening of Hospitals & Dispensaries,
- Strengthening of data base and networking of all the Veterinary Institutions through outsourcing of the data entry work/software development & ministerial assistance,
- Capacity Building–Training of farmers/Field staff, Support to Training centres,
- Establishment of Para Veterinary and Allied Board/ Council, Infrastructure support to Field Veterinary Institutions

Livestock Health Care Measures

- Important programmes taken up during the year 2016-17 includes HS, BQ and ET vaccinations, FMD-CP, NCPPPR, Brucella control Programme and NADRS.
- A total of 47.61 lakh doses of HS vaccine, 6.80 lakh doses of BQ vaccine and 59.47 lakh doses of ET vaccine were utilized & vaccinations conducted during the year 2016-17 in the state.
- Under FMD-CP 1st round, 92.71 lakh animals were vaccinated with FMD vaccine and 92.24% was achieved. All the eligible Cattle, Buffaloes and Pigs in organized farms, in all districts are being vaccinated twice a year (every 6 months) during the year 2016-17.
- Under FMD _CP during the year 2016-17, in first instalment an amount of Rs.1910.23 lakhs was released in that, 60% central share (Rs.1146.14) and 40% state share (Rs.764.09). In second instalment an amount of Rs.305.00 lakhs (Central Share Rs.183 Lakhs + State share Rs.122 lakhs) released.
- During the year 2016-17, 52,330 Brucella vaccinations were conducted. Pooled milk samples, followed by +ve sera samples, Individual animals will be screened and vaccination of female calves (4-8 months) was taken up after screening of animals. Brucellosis is an economically important disease of livestock which is also zoonotic in nature. Mostly the Animal Husbandry staff, farmers, Shepherds, milk and meat handlers and common public is also affected due to consumption of unpasteurized milk and milk products.
- During the year 2016-17 in Andhra Pradesh state out of 670 nodes, 640 nodes are active. Daily on an average of 220-230 nodes are reporting the Daily incidence cases online in the state.
- Veterinary Biological & Research Institute, Samalkot, East Godavari district is producing various types of poultry viral vaccines i.e. R.D'F', R.D 'K', Fowl pox

for backyard poultry & Duck plague in Ducks for immunization of backyard poultry in the state.

The details on outbreaks of various diseases during 2016-17 (upto October 2016) in different districts of Andhra Pradesh are shown in Table 5.16.

Table 5.16 outbreaks of various diseases

Sl. No.	Name of the disease	No. of OBRs	No. of Villages	No. of Attacks	No. of Deaths	No of VOB
1	Anthrax	11	11	45	45	31065
2	Blue tongue	3	3	960	154	14800
	Grand total	14	14	1005	199	45865

Livestock Breeding Activities: Artificial Insemination Centers

6058 Artificial Insemination Centers are available in the state to more than 80% Breedable Cattle and Buffaloes, of which 3043 Animal Husbandry Department Institutions, 2577 Gopalmitra Centers, 438 other Institutions (Dairy Union, BAIF, RASS, JK Trust & Veterinary College) Centers.

Performance of AI Centers

41.78 lakh Artificial Inseminations were conducted and 15.50 lakh Improved Progeny born during the 2015-16. 20.65 lakh Artificial Inseminations were conducted and 9.00 lakh Improved Progeny born during the 2016-17 upto 30th October, 2016. Details of Artificial Inseminations are given in Table.5.17

Table.5.17 Institution wise AI Centers, AI Done & Calves Born

Institution	AI Centers		AI Done Ach		Calves Born	
	2015-16	Upto Oct. 2016	2015-16	Upto Oct. 2016	2015-16	Upto Oct. 2016
AHD	3043	3043	1905230	951767	733694	445696
APLDA	2634	2577	2086893	1060311	776097	448519
Others	476	438	0	52790	0	5874
	6153	6058	3925289	2064868	1467325	900089

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Performance of Frozen Semen Bull Stations

Andhra Pradesh Livestock Development Agency (APLDA) maintains three (3) Frozen Semen Bull Stations at Nandyal, Banavasi and Visakhapatnam producing Frozen Semen with total capacity of 219 Bulls. 57.43 lakh Frozen Semen Doses produced during the year 2015-16 and 48.78 lakh Frozen Semen Doses supplied to the District Livestock Development Associations (DLDA) in the state which interned supplied to the field Artificial Insemination centers as per the demand. 24.06 lakh Frozen Semen Doses are produced and 27.75 Frozen Semen doses distributed during the year 2016-17 up to October'2016.

Organization of Fertility Camps

Every year 2400 Fertility Camps are being organized at Gopalamitra Centers and treating infertility animals and bringing them to conception under supervision of Technical guidance of local Veterinarian.

Institution	2015-16	2016-17 (upto Oct. 2016)
No. of GM Centers	2634	2577
No. of Camps organized	2358	628
No. of animals treated	73879	11006

Livestock Insurance Scheme (LIS)

This is a Centrally Sponsored Livestock Insurance Scheme. Under this scheme 125495 animals were insured during 2016-17 (upto Oct.16)

National Project on Cattle & Buffalo Breeding (NPCBB-II)

The key components include:

- Strengthening LN transport and distribution system,
- bull production programme,
- procurement of breeding bulls for natural service,
- strengthening field AI network,
- manpower development (gopalamitra),
- strengthening / establishment of training centers,
- assistance to private AI workers and
- sexual health control programme

National Policy for Bovine Breeding (NPBB)

The policy envisages achievement of the following as objectives:

- Arranging quality Artificial Insemination services at farmers' door step.
- To bring all the breedable females under organized breeding.
- To conserve, develop and proliferate selected indigenous bovine breeds of high socio economic importance.
- To provide quality breeding inputs in breeding tracts of important indigenous breeds so as to prevent the breeds from deterioration and extinction.

Progeny Testing Programme (PTP)

APLDA has been identified as End Implementing Agency (EIA) for implementing the Sub Project Plan on "Production of High Genetic Merit Crossbred Jersey bulls through Progeny Testing" under National Dairy Plan-I during the years 2013-14 to 2017-18.

Status of implementation of the Sub Project

The sub project is being implemented in Chittoor district of Andhra Pradesh. There are 107 PT centers in Chittoor District covered by 107 Gopalamitras, 14 Exclusive Milk Recorders and 13 Supervisors. The fourth set of test bulls have been introduced from the month of November, 2016 and so far 86 bulls are put to test and 147702 test A.I. have been done till now.

So far, 12528 female have born and are registered. Milk recordings are under progress and so far 4586 crossbred Jersey cows are put to milk recording. Two milk component analyzers have been installed at Chittoor and Tirupati and analysis for milk components like protein, fat, lactose etc., is being carried out. Elite animals are identified for nominated AI and 2565 nominated AI have been done for bull calf production and procurement.

Bull calf procurement is the ultimate aim of the project and so far 70 HGM CBJY bull calves have been procured from the field after parentage testing and disease screening and sent to rearing station at BBC, Nekarikallu. Among 70

HGM bulls 33 bulls have already been distributed / allotted to different agencies by the Bull Distribution Committee. 36 bulls are under rearing and one bull was culled.

Civil works

An amount of Rs.100.00 Lakhs has been allotted under civil works for construction of New Quarantine Station at Tripurapuram and Strengthening of rearing station at BBC, Nekarikallu. The civil works are under progress and will be completed by December' 2016.

National Dairy Plan Phase-I (BANAVASI)

APLDA is the End Implementing Agency (EIA) by the National Dairy Development Board for Strengthening of Semen Stations, Banavasi under NDP-I to produce about 30.00 lakh Frozen Semen Doses per annum by end of 2017-18 with a financial outlay of Rs.652.17 lakh by the end of the Project.

National Kamadhenu Breeding Centre (NKBC)

National Kamadhenu Breeding Centre (NKBC) is at Cattle Livestock Farm (CLF), Chintaladevi, SPSR Nellore District with an aim to preserve and conserve the native indigenous breeds of India with a financial assistance of Rs.25.00 Crores from the Government of India.

The objectives of NKBC are to conserve, preserve & Development of Indigenous Cattle & Buffalo breeds, to enhance production and productivity in Indigenous Breeds, to upgrade genetic merit, to supply certified elite germplasm and to protect threatened breeds from extinction.

The components and core activities of NKBC are include: Establishment of Nucleus herd of all Indigenous Breeds, establishment of Semen Station establishment of ETT Lab, Urine Distillation Plant, Bio Gas plant, Veterinary Dispensary, Chaff Cutter and other Peripheral Activities like training and extension wing, Bulk Milk Cooler.

Feed & Fodder Development Activities

Fodder Seed: To promote fodder production 38070 Qtls of fodder seed has already been distributed to the farmers

on 75% subsidy covering 76140 hectares under fodder production with an estimated fodder yield of 7.60 LMTs.

Chaff cutters: To minimize wastage of fodder, (1608) No of 2 HP, 330 No of 3 HP and 75 No of 5 HP chaff cutters were distributed to the farmers on subsidy with an amount of Rs.4.27 Cr.

Cattle Feed: 41995 MTs of Cattle feed has been distributed to the farmers @ Rs.4/- per kg covering 3.49 lakh productive animals.

Silage Production: 27805 MTs of silage has been produced and distributed to the farmers @ Rs.2/- per kg so far covering 62900 animals.

TMR fodder : 7325 MTs of TMR Fodder has already been produced and distributed @ Rs.3.50/- per kg. To reduce the cost of production of concentrated feed replacing oil cakes with Azolla, 12172 Azolla production units were distributed to the farmers on subsidy with an amount of Rs.3.95 Crore. 498 Hydroponic units were distributed to the farmers on 75% subsidy with an amount of Rs.1.65 Cr

Pashu Graasa Kshetralu

The target is to produce 3.00 LMTs of green fodder and 0.75 LMT of conserved fodder over a period of one year. Harvesting and selling of green fodder to the consumers at Rs.1.00 per Kg at the farmer's door step. 2024 villages have been identified, 35560 consumers enrolled, 1938 entrepreneurs and 6305 acres of area identified for fodder production

Sheep and Goat Development Activities Implementation of NCDC Scheme

The National Co-operative Development Corporation has sanctioned Financial Assistance of Rs.35.74 crores under Integrated Small Ruminants Development (ISRD) to be implemented by the Federation in Prakasam and Chittoor Districts through the District Unions. 146 shepherd families of Prakasam district and 115 of Chittoor district were benefited with the 1st installment of NCDC amount of Rs.265.20 lakhs.

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Physical performance of NCDC

Sl No	Project Components	Prakasam		Chittoor	
		Target	Achievement	Target	Achievement
1	20+1 Units	272	272	17	5
2	50+2 Units	70	70	50	24
3	100+4 Units	31	31	25	15
4	500+20 units	-	-	1	1
	Total	373	373	93	44

During the 2nd phase 373 shepherd families of Prakasam and 44 shepherd families of Chittoor district were benefitted.

Butchers Training Programme

The Butchers Training Programme which is first of its kind on collaboration with NRC, Meat, APSGDCFL is imparts, hands on training on wholesome meat production and how to carve and present various types of meat, animal carcasses into larger, primal cuts and then to smaller and retail-sized cuts.

Shepherd Sadassus

Shepherd Sadassus are being conducted to impart training to the sheep rearers about rearing of sheep in semi-intensive system/intensive system, modern techniques of breeding, feeding and management & preventive vaccination schedule, advantages of de-worming & de-ticking and also create awareness on exchange of Breeding Rams, sale cum exhibition of Breeding Rams, innovative practices adopted in their areas, etc. Federation has organized training programme to Executive Directors of 13 Districts on Legal Aspects in coordination with Institute of Cooperative Management, Hyderabad for effective functioning of Sheep Cooperatives.

Distribution of Mini-Sheep & Goat units

Government is of the view to develop the state as a prominent State for meat production in the country through ensuring sustainable growth in small ruminant sector for economic prosperity and nutritional security. Distribution of Sheep & Goat units is identified as one of the major components.

593 units (NSP-441 and TSP-152) were distributed with a subsidy of Rs.96.55 lakhs upto Nov,2016.

Supply of Total Mixed Ration(TMR)

TMR is a worldwide accepted best practice in feeding livestock. The practice of mixing green fodder or silage with dry fodder and concentrates along with all other nutrients enables a complete ration that increases digestibility and enable utilization of nutrients at optimum level. The product of TMR is to be supplied to the eligible farmers on subsidy basis @ Rs.3.50/- per Kg as against full cost of Rs.9.99/-per Kg under State Development plan 2016-17. 1739.68 MTs supplied up to November, 2016 with a subsidy of Rs.112.90 lakhs.

Sheep & Goat Deworming

The departments conducted 1st round Mass Sheep & Goat deworming from 5.8.2016 to 12.8.2016 covering about 180 lakh sheep & Goat present in the state by spending Rs.4.52 cr.

Poultry Development Activities

The Government is implementing centrally sponsored scheme "Rural Back Yard Poultry Development" under National Livestock Mission-2016-17 The budget allocation is from NLM. The scheme is implemented in convergence with SERP.

Under this programme;

- The state government encourages Rural Livestock holds to adopt Low input technology backyard poultry like Vanaraja/Gramapriya birds for supplementing the income as well as to improve the nutrition standards.
- 4 week old chicks were purchased from GoI approved firms and supplied with proper vaccination were handed over to the beneficiaries of BPL families. Each beneficiary will be provided with 45 chicks, @ 25 and 20 chicks at an interval of 10 weeks. Each beneficiary gets a subsidy @ Rs.50/-chick and a night shelter with an amount of Rs.1500/- on 100 % subsidy.
- 10,000units are allocated in 13 Districts of APRIGP/ DPMU Mandals in Andhra Pradesh. Out of which so far 3,311 units have been grounded. Remaining are in progress.

- Farmer will contribute Rs.810/- per unit as beneficiary contribution. This amount will be collected by APM's, CC's of DRDA.

ITE & C Activities taken up

The Department has provided 8300 Tablet Pcs to all the field functionaries including Gopal Mitras in the State to capture real time data on various welfare activities implemented by the Department. Various Android and Web Applications have been prepared by the Department which are as follows :

- Aadhar Integrated Livestock Population and Milk Production Data
 - o Livestock possessed by the farmer and milk production details (29 parameters) are integrated with Aadhar Number, Mobile Number and Bank Account details to capture real time data
- Foot and Mouth Disease Control Program
 - o Android App and Web versions are in use for realtime data capture of vaccinations linked to CMs Core Dashboard. About 90 Lakh Bovines are vaccinated and 14 Lakh farmers are benefitted first time in the country
 - o The Government of India decided to replicate the same model to all other States in the Country
- Ration Balancing Programme
 - o Software (Android App) prepared in Telugu is in use by farmers, this helps the farmers to improve the milk production of 5 Lakh milch animals using locally available feed ingredients
- Other Applications
- Animal Husbandry Institutions Management and Services App (AHIMSA) to track real time work done at Veterinary Institutions which will be linked to Core Dashboard will contain real time data on the following parameters :
 - o Treatment of sick animals
 - o Deworming of animals
 - o Preventive Vaccinations
 - o Artificial Inseminations
 - o Calves Born
 - o Castrations done
- Online data availability on implementation of Welfare Schemes and feed and fodder development activities (Silage/TMR/Fodder Seed etc.)
- Online tracking of Key Performance Indicators (KPIs) upto last functionary level
- Action Plan to establish common platform
 - o Android Apps to collect realtime data on resource mapping (Geotagging) of Veterinary Institutions and human resources will be prepared on common platform
 - o Livestock disease capture from various places of jurisdiction – from farmers on real time basis and integrating with Toll Free number 1962
 - o Veterinary Infrastructure facilities mapping
 - o Veterinary Medicines Usage and analytics
 - o Various inputs management and beneficiary/input subsidy tracking
 - o Livestock details updation from time to time.
 - o Livestock Survey at designated intervals of time on various parameters.
 - o Survey on epidemics in animals as per the need.
 - o Maintenance and Repair to assets.
 - o Attendance of the employees at all Veterinary Institutions on realtime basis

Animal Husbandry Day

First Saturday of every month is being observed as Animal Husbandry Day as part of Publicity & Extension which is designed to bring all the departmental activities to the door step of the farmer and create awareness among the livestock owners. The overall objective of the programme is to enhance the productivity of livestock that can ultimately influence the living standards of each family dependent on live stock in the adopted village through increased income levels.

AP Centre for Advanced Research on Livestock PVT LTD (APCARL)

The Government issued orders for changing the nomenclature of the scheme “ Assistance for establishment of Indira Gandhi Centre for Advanced Research on Livestock Private Limited at Pulivendula” as “Assistance

for establishment of Andhra Pradesh Centre for Advanced Research on Livestock Limited at Pulivendula”. Six partners have Signed MOU to invest and work with (IGCARL) on different livestock related themes.

The performance indicators pertaining to the Animal Husbandry department are given in Annexure 5.26.

Fisheries

‘Fisheries’ as a subsector of agriculture and allied sectors is gaining prominence in the recent past. The state government envisages development in fisheries sector with a multipronged strategy. The essential objectives include of the development strategy include: Increase of fish production and ensure sustainable development, Development of fisheries value chain and boost exports, Promote investment to create infrastructure, promote welfare of fishers and Set up institutions to build skills.

Growth enabler and employment generator

Fisheries, occupies an important place in the Socio-economic development of sunrise Andhra Pradesh State. Fisheries, as one of the vibrant sub-sectors of the Primary Sector, is identified as one of the growth engines. It is a significant employment generator and a source of proteinous food and foreign exchange earner for the State. AP ranks 1st in total fish and shrimp production and contributes more than 70% of cultured shrimp produced in the country. AP ranks 3rd in Global shrimp production (0.3 million tons), 6th in aquaculture production (1.57 million tons) (FAO Report 2012). AP contributing 1.19% of global and 20.77% of national fish production (2014-15).

Fisheries sector is supporting employment to 14.5 lakh persons and contributing significantly to the State’s economy. The state government has initiated plans to make Andhra Pradesh the ‘Aqua Hub’ of the World.

About 1.40 million people are directly or indirectly employed in the State in this sector. The A.P. Fisheries Policy, 2015 envisages 42 lakh tonnes of fish production with GVA of Rs.80,000 crore by 2019-20

Sustainable development of Fisheries can only be achieved through improvement of the quality inputs, technical skills and management of human resource in the Sector.

The broad development Vision envisages to:

- Promote “Blue Revolution” through a multipronged approach including introduction of alternate species in aquaculture.
- Develop a policy framework for allotment of marine areas and large reservoirs for cage culture through fishermen cooperatives/private participation or by consortium.
- Establish SPF Brood Stock Multiplication centres and Aquatic Quarantine Centres for *L.vannamei* for production and supply of SPF brood stock to hatcheries to supply quality seed.
- Examine opportunities for reduction of cost of production of fish/shrimp in areas of power, feed and others.
- Through PPP mode, establish and manage more fishing harbours and Fish Landing Centres at all feasible coastal villages.
- Build better skills for women for more productive role in fisheries sector through Matsya Mithra Groups/ Fisherwomen Cooperative Societies in fish marketing and fish processing.
- Creating more technical man power in fisheries sector by establishing universities and polytechnic colleges
- Create an enabling policy environment bringing about necessary legislations and policy guidelines.

Prawn Production

18.58 lakh tonnes of fish and prawn were produced in the state in 2016-17 (upto November, 2016) as against the target of 27.00 lakh tonnes. The Fisheries sector contributes 6.78% to the GVA as per advance estimates of 2016-17. 23.52 lakh tonnes Fish and Prawn production was achieved in the year 2015-16. Details of Fish and Prawn production are shown in Table 5.18 and given in Annexure 5.27.

Table5.18: Fish and Prawn Production

(Lakh Tonnes)

Year	Marine	Fresh Water	Brackish Water Shrimp	Total Production	Growth Rate %
2011-12	3.79	9.67	0.56	14.03	-1.49
2012-13	4.14	11.04	0.70	15.88	13.24
2013-14	4.38	12.43	0.88	17.69	11.35
2014-15	4.75	13.98	1.05	19.78	11.86
2015-16	5.20	16.01	2.31	23.52	18.91
2016-17 (upto Nov, 2016)	3.30	13.02	2.26	18.58	

Source: Commissioner of Fisheries

Production of fish /prawn in the state has increased from 8.14 lakh tonnes in 2005-06 to 23.52 lakh tonnes in 2015-16, and 18.58 lakh tonnes in 2016-17 (upto Nov, 2016) registering double digit growth rate on year to year basis from 2012-13 to 2015-16. This became possible because of the entrepreneurship skills of farmers, proactive role of Government and timely interventions of the Department.

Registration of Coastal Aquaculture

As per the Government of India Coastal Aquaculture Authority Act and rules 2005, land within a distance of two kilometers from high tide line (HTL) of seas, rivers, creeks, and back waters comes under the purview of Coastal Aquaculture Authority (CAA).

The District Level Committee (DLC) recommends the applications directly to the CAA for consideration of registration under intimation to the State level committee for Farms up to 2 ha. water spread area. DLC has to recommend applications for farms above 2 ha water spread area, to State Level Committee for further recommendation to CAA for consideration of registrations. As of now, CAA has issued registrations of certificates to 22034.64 ha of 17,571 farmers in 9 coastal districts, which includes farms both below and above 2 ha area up to Nov. 2016.

Registration of Fresh Water Aquaculture

Fresh water aquaculture can be taken up by interested farmers duly obtaining permission from the department of Fisheries. Registration certificates were issued to 34,044 farmers covering an area of 95703.01 ha area of Fresh water aquaculture in the state up to October, 2016.

Important schemes and programmes

Relief to Marine fishermen during ban period

Every year, fishing in the marine waters is banned from April 15th to June 14th (61 days) under MFR Act as a conservation of fishery wealth in the sea and also for promoting responsible fisheries. During ban period, the crew members of the mechanized and motorized fishing boats are provided relief @Rs.4000/- to each crew member by Direct Cash Transfer. About 75000 fishermen are covered under this scheme during 2016-17

All the Fishing Crafts of Mechanized (Upto 20Mts OAL), Motorized and Traditional are being registered under MS Act 1958/APMFR Act 1994 and license on annual basis. So far 1985 Mechanized, 15943 Motorized and 15570 traditional are registered through online (RealCraft) by 30-11-2016. The Department has also supplied Biometric ID cards to all coastal fishers of above 18 years age group under CSS Programme with the technical support of ECIL, Hyderabad for ensuring Coastal Security

Dissemination of cyclone warning and PFZ information to coastal fishers:

The Department has developed strong communication network and disseminating the cyclone warnings through voice message with the support of Reliance Foundation and Dr.M.S.Swaminathan Foundation to all coastal fishers. The Department with the support of INCOIS is also communicating Potential Fishery Zone Information through voice messages and Digital Display Boards in the coastal Districts

AGRICULTURE AND ALLIED ACTIVITIES

Subsidy (Exemption of Sales Tax) on HSD Oil

This scheme meets the State commitment on exemption of Sales Tax on HSD oil used by mechanized and motorized fishing crafts. The ceiling limit of HSD oil is 3000 litres per month in case of mechanized boats and 300 litres per month in case of motorized boats. The subsidy on sales tax is Rs.6.03 per litre.

Supply of OBM/IBM engines

Out Board Motor Engines / In Board Motor Engines are supplying to traditional Fishing Craft under the Scheme of Motorization of Traditional Crafts under CSS Programme. Unit cost is Rs.1.20 lakhs and subsidy is 50% of unit cost or 60,000/- whichever is less.

Promotion of Deep Sea Fishing

The objective of the scheme is to promote deep sea fishing particularly Tuna fishery which is under exploited and scope for potential catches through mechanized and motorized boats. Tuna longlines and gill nets are providing on 50% subsidy on the unit cost of Rs.4.00 lakhs and 1.00 lakh respectively

Supply of Sea Safety and Navigational Equipment

Sea Safety and Navigational equipment like Life Jackets, Life buoys, G.P.S., Echo sounder, VHF Sets and DATs are providing on 75% Subsidy for all categories of sea going fishing vessels so as to promote safety at sea for fishers and facilitative to catch more fish with aid of navigational equipment.

Supply of Marine Fishing Inputs

About only 1/5th of coastal fishermen are possessing their own fishing inputs in the state. Hence, the fishing Inputs consisting of FRP Boat, Engine and Nets with the unit cost of Rs.5.00 Lakhs are supplying to Individual / Group of Fishermen belonging to BPL families on 50% Subsidy for their better livelihood.

Establishment of Infrastructure facilities to Marine Fishermen

Marine infrastructure facilities like Fishing Harbours, Fish Landing Centers, dry platforms, additional Shore based facilities, markets, are providing to Marine Fishermen community for promoting Hygienic handling of fish and shrimp and to reduce post harvest fishery losses

Housing Scheme for fishers

Under National Scheme of Welfare of Fishermen of GOI and NTR Rural Housing Programme of GOAP, the fishers are providing with pucca houses with unit cost of Rs.1,87,500/- in the State

Training and Capacity Building to fishers:

Various training programmes, awareness camps, exhibitions are being conducting regularly with technical support of State Institute of Fisheries Technology (SIFT- A State institute of Fisheries department) to upgrade the professional skills among fishers, aqua farmers, fisherwomen, technocrats, academicians, entrepreneurs in the fields of Capture, Culture and Post harvest fisheries sectors in the state.

Scheduled Castes Sub-Plan

An amount of Rs.5931.00 lakhs is allocated under this plan for the year 2016-17. The important activities proposed under this scheme are supply of three / four Wheelers for fish marketing, Supply of Boats/FRP boats and nets cycles with nets or nets to reservoir / riverine/ tank fishermen, supply of ice boxes to fishers, Cage culture in Reservoirs, supply of Reefer vans , establishment of fish retail kiosks, supply of two wheelers with ice box, freezer mounted Mopeds for fish vending and / or shrimp seed transport, supply of fish seed transport vans, providing subsidy to SC entrepreneurs for establishment of fish processing units under AP Fisheries Policy, 2015.

Tribal Sub-Plan

An amount of Rs.2041.00 lakhs is allocated under this plan for the year 2016-17. The important activities proposed under this scheme are supply of three / four wheelers for fish marketing, supply of Boats/FRP boats and nets cycles with nets or nets to reservoir / riverine/ tank fishermen, supply ice boxes to fishers, supply of Reefer vans and establishment of fish retail kiosks.

Fisheries Development schemes

The important sub - schemes under this scheme are: establishment of BMCs, AQFs Larval and Post Larval rearing centers for L. vannamei shrimp, Hatcheries for Seabass and Mud crab, revolving fund assistance to fisherwomen,, supply of fibre boats to marine fishermen,supply of boats to inland fishermen, supply of nets to inland and marine fishers, training and extension to departmental officers, farmers and fishers, honorarium to MPFEAs, consultancy, ICT, branding and publicity, establishment of aqua labs, Chandranna Bima for fishers, purchase and maintenance of relief boats, maintenance of shore Stations, promotion of deep sea fishing,assistance to MMGs/ SHGs for marketing, capacity building to Farmers producer organisations and cage culture in water bodies

Chandranna Bima :

Previously, active fishers in the State were covered under Group Accident Insurance Scheme (GAIS) of Centrally Sponsored Scheme. Now, the Department of Fisheries is enrolling the fishers under the Chandranna Bima Scheme, which is more beneficial compared to GAIS. As the maximum amount insured under GAIS is Rs.2.00 lakh. The fishermen expressed their satisfaction on Chandranna Bima Scheme as the insurance amount is Rs 5.00 lakhs for Accidental Death; Rs 3.62 lakhs for Partial/ Permanent Disability, for Rs 0.30 lakhs for natural death provision for Scholarships for Education.

Blue Revolution:

The GOI have issued guidelines under CSS “Blue Revolution : Integrated Development and Management of Fisheries” in which all the sectors of fisheries – inland, marine, welfare, post harvest fisheries etc., are covered.

GOI assistance is restricted to 50% of the unit / project cost. Under this CSS scheme, GOI have sanctioned Rs.13.97 crores during 2016-17 to the State. The important schemes being implemented during 2016-17 are establishment of feed mills of both large and small, fish landing centres in inland sector, ice plants, supply of crafts and gear, installation of green energy based solar wind hybrid freezing plants and drying unit etc.

Schemes under RKVY

Under RKVY 2016-17, Rs.37.52 crores was sanctioned for fisheries sector in the state. The schemes implemented under RKVY are fish seed stocking in tanks and reservoirs by providing assistance to FCSs, establishment of fish brood bank at Kovvali, West Godavari dist., establishment of AQF, BMC for L.vannamei in Visakhapatnam district , mud crab and sea bass hatcheries in Guntur district, establishment of mobile / stationery diagnostic aqua labs, construction of fish markets in GPs and Municipalities. Assistance to fish vendors for setting up kiosks etc.,

Infrastructure projects under RIDF

Governments have sanctioned 67.29 crores under RIDF XX Tranche for taking 47 works in the state. The works of fish seed farms, shore based facilities, fish landing centers, labs, approach roads etc. are taken up by the engineering wings of the PR dept, APEWIDC. Some of the works are completed and the remaining projects are under various process of execution Stage.

MGNREGS

Infrastructure and community assets building activities are proposed under this scheme. The initiatives planned through MGNREGS in fisheries sector for 2016-17 include: Construction of shrimp ponds for SCs , STs in 100 ha, Desilting & deepening of earthen ponds in 50 department Fish seed farms, De-silting of drains and creeks in aquaculture areas, Fish Drying Platforms in coastal villages, excavation in Seasonal water bodies for Development of fisheries (Captive seed nurseries),Fish landing centres in 100 reservoirs / tanks, gravel roads to fishermen habitations, inputs in farm ponds for raising fish culture , and labour component in construction of fish market earth work.

AGRICULTURE AND ALLIED ACTIVITIES

Recent Initiatives taken by department for development of fisheries:

- Re structuring of the department has been initiated in Nov 2016
- Networking of Aqua laboratories are in progress
- Permitting Aquaculture in assigned lands
- Task Force Committee was constituted to promote aquaculture and to position AP as Hub of Aqua Production and processing in India
- Implementing orders issued imposing ban on usage of slaughter waste in aquaculture
- Allowing Aquaculture in DKT lands
- Regulation of shrimp hatcheries for quality seed production
- Implementing Coastal Security measures by covering left over fishers of 77250 for issuance of MFID cards and 65 card readers supplied by GOI for authentication of bio-metrics
- Preparation of DPRs for new fishing harbours at Juvaladinne, Nellore district, Vodarevu, Prakasam district Uppada, East Godavari district and Phase-II Development at Nizampatnam, Guntur district, Machilipatnam, Krishna district and released Rs.5.04 crore as mobilisation advance
- Coverage of Chandranna Bima for active fishermen
- Implementation of housing scheme with unit cost of Rs.1,87,500/- dovetailing funds under NTR housing programme.

Organization of Fishermen Cooperative Societies

The Government has given great importance to cooperative societies in fisheries sector to empower fishermen to manage their own affairs. As a matter of policy, tanks are given on nominal lease to these cooperative societies for exploitation of fishery wealth and also provided assistance for inputs like fish seed stocking, feed, boats and nets on subsidy. While so far 2.61 lakh fishermen have been organized into societies, a large number of fishermen still remain to be brought under the fold. This is a continuous process and wherever fishermen are coming forward to form cooperative societies, they are being registered. Details are shown in Table 5.19:

Table 5.19 Fishermen Co-operative Societies

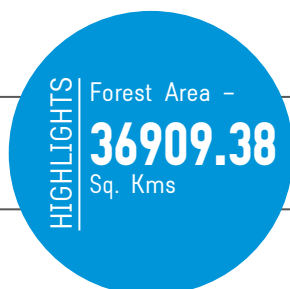
Type of Societies	Nos	Members
Inland Fishermen Coop.Societies	1397	134001
Marine Fishermen Coop. Societies	423	85,113
Brackish water Fishermen Coop. Societies	9	1058
Fisherwomen Coop. Societies	494	39227
Fishermen marketing Coop. Societies	5	2415
TOTAL	2328	261814

Source: Commissioner of Fisheries

Forest

The forests in the state prove to be a great respite for the ones bored with city life. Packed with an abundance of rich flora and fauna life, the forests around Andhra Pradesh make for highly rejuvenating getaways. Tourists often head to the forests near Andhra Pradesh to experience jungle safaris. The famed wildlife in Andhra Pradesh is mainly scattered across these forests. While the benefits from dense forests are numerous, the tangible benefits like Timber, Bamboo, Fuel wood, Fodder, Non-Timber Forest Products etc., are quantifiable. Intangible benefits like maintenance of ecological balance, conservation of soil and moisture, regulating the water flow, sequestering carbon-dioxide from the atmosphere etc., are not quantified but are of great significance.

Forest cover has been recognized as critical for a living environment as it influences the quality and quantity of air and water. The role of forests as carbon sinks endows them added recognition as an important environmental factor. With the responsibility of management of forests vested with the State Forest administration, the Central interventions are directed essentially towards reinforcing the capacity of States to undertake the National Policy mandates towards conservation and sustainable use of resources. The core objective of forest sector development strategy is to enhance green cover by integrating it with livelihood opportunities.



Very Dense Forest-650.76 Sq. Kms

Moderate Dense Forest Area-11798.58 Sq. Kms

Open Forest -10961.70 Sq.Kms

Scrub Forest-9310.37 Sq. Kms

Non-Forest -3815.84 Sq. Kms

Water Bodies -372.13 Sq. Kms

As per the forest records, the state ranks 9th in India having forest cover area of 36909.38 Sq. Kms which amounts to 23.04%. Out of 36909.38 Sq. Kms of forest area, the Very Dense Forest is 650.76 Sq. Kms the Moderate Dense Forest is 11798.58 Sq. Kms, Open Forest is 10961.70 Sq. Kms Scrub Forest is 9310.37 Sq. Kms Non-Forest is 3815.84 Sq. Kms and Water Bodies is 372.13 Sq. Kms. District wise forest area is shown in Annexure 5.28.

As per goals and directives set in the National Forest Policy 1988, the 1993 and the revised 2002 State Forest Policy, Vision 2020 of Andhra Pradesh, the forest department implements various development schemes to protect and develop existing forests, to improve its productivity and economic value. The main objectives of programmes like Community Forest Management (CFM), Centrally Sponsored National Afforestation Programme (NAP) through Forest Development Agencies, RIDF Projects, Soil & Moisture Conservation, Social Forestry, Wildlife Development and Human Resource Development are enriching existing low density forests and alleviating rural poverty.

Forest resource surveys of industrial catchments were undertaken from 1965 to 1975 and most of the important forest zones of the state were covered under schemes sponsored either by the Government of India or by the State.

Under RIDF projects and other schemes the department has set a programme having provision for soil and moisture conservation with the financial assistance of NABARD for construction of various types of water harvesting structures such as Check dams, Contour Trenches Rocks fill dams,

percolation tanks etc. in forest areas. These structures help recharge ground water, and improve forest vegetation besides stabilizing the status of agriculture in adjoining fields.

The Silvi-cultured research for improvement of natural forests has assumed great significance. Keeping in view recent trends in forest research, the department has laid special emphasis on Forest research to conduct experiments, improve nursery and plantation techniques, vegetative propagation, seed development and natural forest management etc.

26.96 lakh hectares of additional non-forest land is to be brought under tree cover by taking up tree plantation both inside and outside forest under Green India Mission programme to achieve 3200 ha. of area under tree cover by the end of March,2017.

Monitoring of vegetation (Forest) Canopy Cover Density, Forest Fire Risk Zonation Mapping, mapping all forest areas with site suitability, Kolleru lake restoration, re-locating & demarcating forest boundaries and Inventory of forest resources are some of the major and important activities taken up by the department using latest information technology.

Almost all programmes/schemes of the Forest department are being implemented through participation of local people, 67 numbers of Vanamahostvam was celebrated on 29-07-2016 and Eco-Development Committees (EDCs) have been created in Protected Areas and Watershed Development Committees constituted in River Valley Project.

Forest Produce

The Departmental Extraction of Timber, Fuel and Pulp Wood, Faggot Wood, Long Bamboo and Bamboo Industrial Cuts (BIC) from natural forests as well as plantations was introduced from the year 1976-77, after disbanding the previously existing contractor system.

At present there is a moratorium on extraction of timber from natural forests except for bamboo from overlapping bamboo forests. The major activity comprises harvesting timber and poles from matured plantations of Teak, Eucalyptus, Casuarinas etc. and long bamboos and BIC from bamboo coupes as per prescriptions of the working plan of respective divisions. The physical targets and achievements of Departmental Extraction of Forest

AGRICULTURE AND ALLIED ACTIVITIES

Produce of Timber, Fuel, Poles and Bamboos details are given in Table-5.20.

Table 5.20 Forest Produce extraction

Species	2015-16		2016-17 (upto Nov 2016)	
	Target	Achievement	Target	Achievement
Timber (cmt)	8881.27	4030.29	3998.33	2633.27
Fuel (cmt)	136407.1	9743.27	44652.66	1439.07
Poles (Nos)	123957	26202	85744	6865
Bamboo (lakh Nos)	89.84	37.70	74.93	9.15

Source: Forests Department

Forest Revenue

Forest products in the state include Timber, Bamboo, Firewood & Charcoal etc. The income accrued from forestry sector in the State was Rs.19.34 crore in 2016-17 (upto Nov, 2016). Details of the value of forest produce in the State are given in Annexure-5.29. Sale of red sanders is under process during 2016-17.

Production

There is no supply of raw material from the Forest department to all the three major wood based industries in the state. Forests are looked as “Green Capital” and are no more valued as raw material resources for the industries. Industrial requirements are met from other sources like imported pulp, agricultural wastage and plantations raised by farmer with buy-back arrangements.

Forest department is supplying Bamboo Industrial Cuts to the Paper Mills in Andhra Pradesh. There is no supply of Bamboo Industrial cuts to the paper mills during 2012-13 to 2015-16 seasons.

Forest Development Authority

Forest Development Agencies are federations of all VSS within a Territorial / Wildlife Forest Divisions under the Societies Registration Act. It operates in a 3-Tier system with the State Forest Development Agency (SFDA) at the State Level, Forest Development Agency (FDA) at divisional level and Vana Samrakshana Samithi (VSS) at village level.

20 FDAs were functioning out of the sanctioned 25 by Government of India in Andhra Pradesh. They are implementing Centrally Sponsored Schemes like National Afforestation Programme, Green India Mission, National Medicinal Plantation Board (FDA Component) and Hudhud schemes, subject to release of funds by Government of India from 2015-16, the Government of India decided the sharing pattern for Core Schemes under CSS including National Forestation Programme (NAP) would be 60:40 (Central & State) Share.

FDAs take up various Plantations activities, Soil and Moisture Conservation works, Fencing, Entry Point Activities, Awareness Raising, Training and Capacity Building etc., through the Vana Samrakshana Samathis.

Social Forestry

The State Government has launched a massive people's movement involving general public and farmers in a big way to increase tree cover outside reserve forests to improve environment and to provide gainful employment to thousands of unemployed youth. Public distribution of seedlings, raising community land plantations/ avenue/ shelter belt plantations; and raising of institutional plantations have been done under Social Forestry programme.

Vanamahostavam-Vanam-Manam

The Government has launched a massive campaign called “Vanam-Manam” on 29.07.2016 being 67th vanamahostavam day and planted one crore plants on the same day in all the Districts of Andhra Pradesh. Programmes and functions have been organized on various themes and aspects of forestry and every third Saturday will be observed for implementing programme titled ‘Prakruthi Pilusthondi’.

Planting on vacant Government lands, Forest lands, Endowment lands, Social and Tribal Welfare Hostels, Schools and College premises, Railway lands, Housing Colonies, Farm lands in the form of block planting and bund planting are planned. Series of Plantation programmes in housing colonies, Green Run, Cycle Rallies and Eco walks on different days, Elocution competitions for school children and college students on environment and forests. Quiz competition among school children,

Lectures and discussions on climate change concerns, environment and biodiversity conservation issues, Screening films and documentaries on forests and wildlife conservation in various schools and theatres, 'Essay writing' and 'On the spot painting competition' in all Districts at various places,

It is planned to take up planting 128 Lakh seedlings in 19,949 Villages and 105 Municipalities in 646 Mandals covering 906 Schools, 12,103 Institutions, 435 Industries in addition to planting in 5299 Ha of degraded forests. Arrangements are made for geotagging to these locations.

Vanamahotsavam

67th Vanamahotsava 2016 was celebrated on 29.07.2016 at Bathulavarigudem Reserve Forest, Sunkolu Village limits, Nuziveedu Mandal of Krishna District. Vanamahotsava celebrations were simultaneously conducted at all the District Headquarters throughout the State. Total 1.5 crores seedlings have been planted on single day during the Vanamahotsava on 29.07.2016. The participants in the Vanamahotsava Programme included the elected people representatives, VSS numbers, NGOs, School and College Students, Government officials and General public. The Forest Department had procured miscellaneous plants viz. Vepa, Usiri, Maredu, Raavi, Ramaphal, Seethaphal, Kadamba, Badam, Neredu and Thellamaddi for planting. The Forest Department has also made elaborate arrangements for taking up planting in Lakhs of plants raised in 13 divisions in Andhra Pradesh in Vanamahotsava day for distribution to the General public and planting in Government waste lands.

Karthika Vanamahostavam

In addition to the Vanamahotsava, the Karthika Vanamahotsavam celebrations were held throughout the State from 14.11.2016 to 20.11.2016. Karthika Vanamahostavam function was organised at Central nursery near Diwan Cheruvu Reserve Forest, Rajahmundry. Forest Department has made elaborate arrangements for taking up planting of seedlings in each District involving Andhra Pradesh Green Corps, Public representatives and District officials to co-ordinate with other agencies like School Head Masters, Industry Managements for success of Karthikavanam celebrations. About 1855 events were

conducted with the participation of (1,80,694 no. of people) All the political members of the State and Central, other government officials, Green Corp voluntaries, employees of Industries and VSS members are participated and 1.92 lakh seedlings are planted on this auspicious occasion of Karthika Pournami.

Seed dibbling:

Forest Department has collected 2400 Metric Tonnes of seeds of native species. Out of this 2067 Metric Tonnes is being utilised for dibbling in identified patches of degraded forests. The main species raised for public distribution and planting in public lands are Teak, Red Sanders, Bamboo, Amla, Seethaphal, Casuarina, Eucalyptus seedlings for planting.

Planting:

21.73 crore seedlings have been planted in the State i.e., 5.94 crores by various Government agencies and 15.79 crores by paper mills.

Mahathma Gandhi National Rural Employment Guarantee Scheme Neeru-Chettu Performance

Activity wise performance is given in Table 5.21.

Table 5.21 Performance of Neeru-Chettu (2016-17)

Name of the Component		Name of the indicator	Unit	Target	Achievement
Chettu		Block Plantation (Inside RF)	Ha	5966	5966
		Distribution of seedlings	Lakhs	807	807
		Raising of Nursery for 2016-17	Crore	15.60	15.60
		Seed dibbling	Mt	1500	1991
		Bio fencing to schools	RMT	350766	350766
Neeru		Continuous Contour Trench (CCT)	Nos	440400	703118

Source: Forest Department

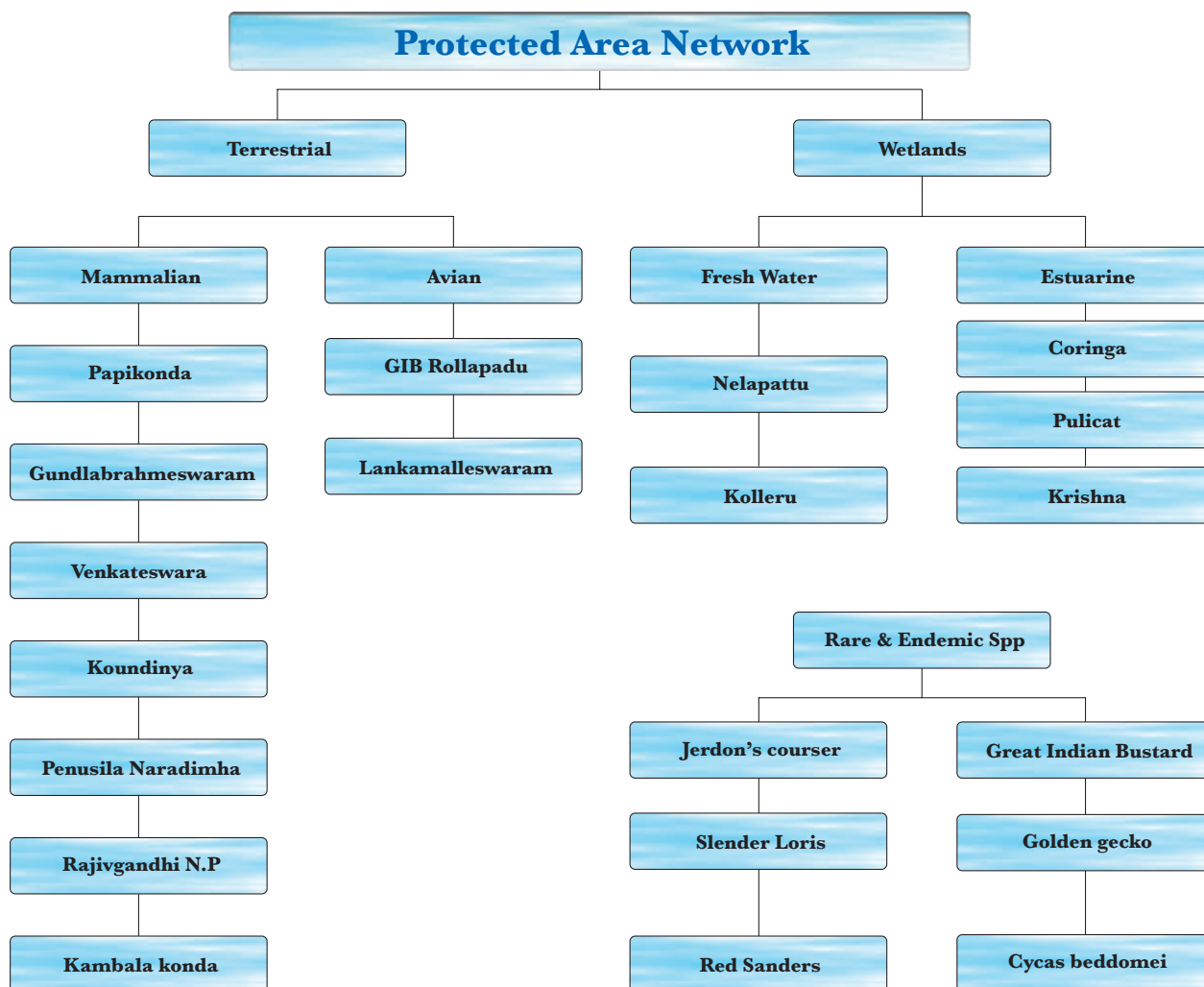
AGRICULTURE AND ALLIED ACTIVITIES

Wildlife Conservation

As of now the State has 13 wildlife Sanctuaries and 3 National Parks covering an area on 8139.89 SqKms which is 22.53% of the State’s Forest area and 4.448% of the State’s Geographical area

There are 1 Tiger Reserve, 1 Elephant Reserve (Koundinya Sanctuary and Rayala Elephant Reserve), 1 Biosphere Reserve (Seshachalam) 3 National Parks and 13 Wildlife Sanctuaries in the State. The State has 2 Zoological Parks, 2 Deer Parks under Government control, 2 Deer Parks under Private Control and 2 Animal Rescue Centers for Ex-Situ conservation. One in SVZP, Tirupati and one in IGZP, Visakhapatnam with the Assistance of Zoo Authority of India. Critically endangered wildlife habitats of species like Jerdon’s Courser, Great Indian Bustard, and wetlands.

This involves conserving the wildlife in their natural habitat by giving proper protection and managing the habitat to meet the requirements of the wild animal species found naturally in the area. Areas which are potentially suitable for this type of conservation were identified and notified as Wildlife Sanctuaries and National Parks. Wildlife management involves conservation of wildlife outside its natural habitat in places like in Zoo Park, Deer Park and Rescue Centers. The purpose of this type of conservation is to breed the wild animals in such areas to build up their population. The population so built-up is trans-located back to the natural habitat and released for improving densities in the areas. Apart from conservation breeding, ex-situ conservation is also helpful in education, research and recreation.



Zoological Parks in Andhra Pradesh

The 2 zoological parks in the state Indira Gandhi Zoological Park, Visakhapatnam and Sri Venkateshwara Zoological Park, Tirupati are rated among the best zoos of the country with excellent facility for display of animals, conservation breeding, visitor amenities, and conservation education etc.,

Deer Parks

There are 2 deer parks in the state i.e., Kandaluru Deer Park at Kandaluru Dam, Nellore district with an area of 25 ha. and Chittoor RF Deer Park at Chittoor district with an area of 3.25 ha. Kottapakonda Deer Park in Guntur district is under development.

Management of Protected Areas

It has been experienced that lack of sufficient water holes and fodder within the Protected Areas and Reserve Forests along the fringe areas that are subjected to over use by the local people result in straying of wild animals outside the forests. There is an urgent need to concentrate on these areas and improve the fodder resources as well as water resources through special initiatives. Currently, it is proposed to develop artificial water holes and improve water resources on priority in the fringe forest areas with the funds available under different Schemes. This initiative needs extension over entire state to reduce the adverse effects on the eco-systems due to biotic interference.

Protection of Wildlife outside Protected Areas:

It is contemplated to revive the anti-poaching squads, one for each region of north coastal Andhra, South coastal Andhra and Rayalaseema kept under the control of independent divisions. These squads need to be provided with vehicles, weapons, wireless sets and other necessary equipment. As per the recent amendment to Wildlife (Protection) Act, 2006 Government of India called for a Special Cell at the state level to work in co-ordination with the Central Wildlife Crime Control Bureau. Implementing the instructions of Government of India in letter and spirit is a task ahead.

Protected areas of the forest department in the State is given in Annexure 5.30

Conservation of Endangered Marine fauna

Hunting of endangered marine fauna like Sea turtles, Dolphins, Whale sharks and ray & shark fish which are listed in Schedule I of Wildlife (Protection) Act, 1972 is increasing in recent times along the Andhra Pradesh coast. A special scheme for conserving endangered marine fauna and to conduct studies for declaring Marine Protected Areas is an urgent need.

Protection of Migratory birds

Though the important and prioritized wetlands like Kolleru Lake, Pulicat Lake, Nelapattu tank are notified as Wildlife Sanctuaries, there are still many areas like Naupada swamps and Telinelapuram in Srikakulam district, Uppalapadu in Guntur district, Talamudipi tank in Kurnool district, Punyakshetram in East Godavari District, which are identified by the Bird Watchers Society of Andhra Pradesh and SACON, are being declared as Wet lands of Ecological significance.

Wildlife education and awareness

The National Wildlife Action Plan has identified 'Conservation Awareness and Education' as one among the thirteen important strategies to be adopted for implementation of wildlife conservation programme. To inform and involve the media on issues surrounding wildlife conservation and to highlight the connections between destabilized ecosystems and the failing quality of human life. To explain the connection between healthy ecosystems and India's water and food security. Launch mass awareness campaigns through print and electronic media. Provide central assistance to disseminate nature education packages through Government and non-government sectors. Separate Wildlife Circles at Srisailem, Tirupathi have been formed in the State to intensively manage the network of 16 Protected Areas.

AGRICULTURE AND ALLIED ACTIVITIES

East Godavari Riverine Estuarine Ecosystem (EGREE) Foundation

An initiative of the GoI-UNDP-GEF-GoAP Godavari Project a cross sectoral institutional mechanism established to achieve the goal of “Mainstreaming Coastal and Marine Biodiversity Conservation into Production Sectors” operations in “East Godavari Riverine Estuarine Ecosystem”, Andhra Pradesh, India

The EGREE Foundation was constituted under the Andhra Pradesh Societies Registration Act, 2001 represent by Government officials. As the members of the foundation including District officials of East Godavari District. Main aims of the EGREE Foundation are to mainstream biodiversity conservation into the production sectors of EGREE through: (1) Cross-sectoral planning in the EGREE that mainstreams biodiversity conservation considerations, (2) Enhanced capacity of sector institutions for implementing biodiversity-friendly sector plans, (3) Improved community livelihoods and sustainable natural resource use.

Seshachalam Biosphere Reserve

With an area of 4756 Sq.Kms (approx.) the only Bio-Sphere Reserve in the State has been notified. The local level management committee and State level management committee has been formed and is under implementation. The plan has been approved by GOI and will be implemented.

Conservation measures for Sea Turtle along cost line of Andhra Pradesh

To protect Sea Turtles from predators all along the coast line of Andhra Pradesh. A rapid survey was conducted along the coast of A.P. to identify potential nesting sites and NGOs & local communities are involved in protection of nests by In-situ and Ex-situ methods. Efforts have been made to protect Sea Turtles from predators all along the coast line of Andhra Pradesh and nearly 5579 nests and 6,87,177 Hatchlings were released successfully in to the Sea between 2011-15. During 2015-16, 198437 hatchlings released into the sea.

Man-Animal Conflict

To reduce the Man-Animal Conflict, steps are taken to ensure prompt compensation for crop loss, cattle kills and for human deaths. Apart from that measures like creating more water sources in the fringe areas, developing animal rescue teams with full-fledged equipment, and creation of awareness in the public. To mitigate the migratory Elephant problems in Chittoor district immediate special compensation packages are given for crop loss, human injury and death. Elephant proof trench is excavated and solar pulsating current fence are also being put in place to prevent elephants to enter into the agricultural fields and habitations. During 2015-16 as a special measure Elephant Proof Trench has been excavated over 197 Kms so far by incurring expenditure of Rs.331Lakhs. Details are shown in Table 5.22

Table 5.22 Man-Animal Conflict

(Rs. in Lakhs)

S. No	Year	Deaths		Injuries		Crop Damage		Cattle Kill	
		No of Cases	Compensation	No of Cases	Compensation	No of Cases	Compensation	No of Cases	compensation
1	2011-12	5	4	26	3.25	73	5.49	16	1.88
2	2012-13	6	1.78	117	5.04	399	20.21	233	5.95
3	2013-14	4	2.28	26	0.11	439	15.18	46	2.97
4	2014-15	1	6	13	5.08	1966	110.18	41	5.12
5	2015-16	3	12	8	3.69	1613	123.42	160	25.04
	Total	19	26.06	190	17.17	4490	274.48	496	40.96

Source Forest department

Eco Tourism

Ecotourism Planning should be ecologically acceptable, economically viable, socially desirable and aesthetically satisfactory. 50% revenue for maintenance and development of the facility. 30% for VSS / EDC members. 20% for CBET members as incentive.

Community Based Eco-Tourism (CBET)

“Responsible travel to natural areas that conserves the environment and improves the well-being of local people.” Minimize impact. Build environmental and cultural awareness and respect Provide positive experiences for both visitors and hosts Provide direct financial benefits for conservation Provide financial benefits and empowerment of local people by ensuring their direct stake in conservation of local culture, ecology and environment.

The existing CBET circles in the state are: Maredumilli CBET (Rajaumundry Circle), Kambalakonda CBET (Visakhapatnam Circle), Coringa EDC (Rajaumundry Circle), Talakona CBET (WLM Tirupathi Circle), Mamanduru CBET (WLM Tirupathi Circle), Ubbalamadugu CBET (WLM Tirupathi Circle)

Eco-Tourism Centres Developed by Forest Department during 2016-17

Bairluty EDC (Jungle Camp & Safari) (NagarjunaSagarSrisailam Tiger Reserve), Tummalabyalu EDC (Jungle Safari) (NagarjunaSagarSrisailam Tiger Reserve), Paccherla EDC (GundlaBrahmeswaram Wildlife Sanctuary) (Kurnool Circle), Maredumilli Jungle Star (Rajaumundry Circle)

Forest Protection Schemes Intensification of Forest Management Scheme

The objectives of forest protection scheme include prevention and control of fire, survey and maintenance of boundaries, preparation of working plans, development of infrastructure and protection of forests and wildlife.

Implementation of Scheduled Tribes & other traditional forest dwellers (ROFR) Act-2006

Under this scheme 150345 Individual claims with an extent of 3,36,577 acres and 4493 Community claims with an extent 652780 acres are received. 83874 title certificates issued for Individual claims with an extent of 198633 acres and 1,319 title certificates issued for Community claims with an extent of 4,34,355 acres upto October 2016.

Information Technology (Geomatics)

The list of IT projects completed under GIS and MIS are as follows:

GIS

- Authentication of DGPS surveyed data of proposed Forest land diversions, CA areas of CRDA and APIIC etc.,
- Mapping of Eco sensitive zone for wildlife protected areas.

MIS

- Integration of plantation, Nursery and Red sanders offence cases details with CM Core Dash board.
- Implementation of online Tree felling permission (EODB).
- Geo tagging of all plantations (Since 2010)
- Digitization of Forest Protection offence cases and Nursery raising and utilization.
- Decision support system for Working Plan inventory
- Development of Financial Module- CAMPA
- Decision Support system to estimate the growing stock in TOF and for Red Sanders.

Forest Research & Development

There are (6)Centres in Andhra Pradesh State under the control of (2) Research Divisions located at Tirupathi and Rajahmundry. The main objectives of these Divisions are to attend to forestry problems in their respective jurisdiction and take up activities mainly to establish experimental plots, improved Nursery Technology, Seed Collection, Vermi Compost/Organic Compost production and Tree Breeding programs etc. An expenditure of Rs.40.30 lakhs that formed 26.86% of the Budget released in 2016-2017 was incurred for Research schemes

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Forest Conservation Act: 1980 Compensatory Afforestation

Forests are a vital component to sustain the life support system on Earth. Forests whether Government, village or private sub-serve the entire community and represent a community resource that meets the need of millions of rural people especially the tribals. Article 48A of the Constitution of India requires that the State shall endeavour to protect and improve the environment and to safeguard the forest and wildlife of the country. Under Article 51A, it is the duty of every citizen to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures.

As per the Forest (Conservation) Act 1980, whenever forest land is to be diverted for non-forestry purpose usually conditions relating to transfer, mutation and declaration as Reserve Forest/ Protected Forest the equivalent non-forest land for compensatory afforestation and funds for raising compensatory afforestation etc are to be imposed. Such funds were to be used for natural assisted regeneration, forest management and protection, infrastructure development, wildlife protection and management, supply of wood and other forest produce saving devices and other allied activities.

Details of Progress on Compensatory Afforestation under Forest (Conservation) Act 1980 in the state for the years 2014-15, 2015-16 and 2016-17 (up to September) are shown in Annexure 5.31.

Andhra Pradesh State Bio-Diversity Board The broad objectives of the State Bio-Diversity Board are:

- Advise the State Government subject to any guidelines issued by the central Government on matters relating to conservation of biodiversity, sustainable use of its components and equitable sharing of the benefits arising out of the utilization of biological resources.
- Regulate by granting of approvals or otherwise, requests for commercial utilization or biodiversity and bio utilization of any biological resource by Indians.
- Perform such other functions as may be necessary to carry out the provisions of this Act or as may be prescribed by the State Government.

Activities:

The Andhra Pradesh State Biodiversity Board has formed Expert Committees to give suggestions on various issues where in decisions are to be taken by the Board. (Rule 12) Expert Committees formed on the subjects of Agri-Biodiversity, Animal and Fish Biodiversity, Wildlife Conservation and Protection, Traditional knowledge associated with Medicinal Plants, Conservation and Bio-prospecting, Legal matters relating to IPR, Awareness and capacity building, Declaration of Biological Heritage Sites Access and Benefit Sharing.

Biodiversity Management Committees (BMCs):

The Biological Diversity Act, 2002 and Biological Diversity Rules, 2004 and A.P. State Biological Diversity Rules 2009 direct the implementation of the provisions through the local bodies in the State of Andhra Pradesh. As per sec 41 of the Act, every local body shall constitute Biodiversity Management Committee (BMC) with in its area for;

- Promoting conservation biological diversity.
- Sustainable use of biological diversity.
- Documentation of biological diversity & Habitat (PBR).
- Conservation of land races.
- Folk varieties and cultivation.
- Domesticated stocks & breeds of animals & microorganisms
- Chronicling of knowledge relating to biodiversity.

Since formation of Biodiversity Board, it has constituted total 2338 BMCs at panchayat level, two at District level, 5 at Municipality level and 27 at Mandal Level. The total number of BMCs in the State is 348 from April 2016 to November 2016.

Peoples Biodiversity Registers (PBRs) are prepared by (23) BMCs at their local bodies' level and 53 PBRs are under process.

Biological Heritage Sites:

As per the Biological Diversity Act 2002, in consultation with the local bodies and other key stakeholders, the Board shall take necessary steps to facilitate setting up of

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areas of significant biodiversity importance as Heritage Sites. Following the recommendation from the Board after consultation with the Central Government, the State Government shall issue notification to this effect.

In case of 1.Veerapuram and 2.Timmamma Marrimanu proposals were submitted to the Government for notification as Biological Heritage Sites. Srisailam, Tirumala Hills, Kolleru and Talakona proposals to recommend them as BHSs are under consideration.

Biodiversity Parks:

Ex-situ conservation initiatives; Biodiversity Park established by Dolphin Conservation Society in Visakhapatnam recognized as first ex-situ biodiversity park of A.P.

Andhra Pradesh Forest Development Corporation

The objectives of the Corporation:

To raise large scale plantations to meet the demands of forest based industries with species such as Eucalyptus, Bamboo, Tropical pines, Coffee, Cashew, Casuarina etc. To generate gainful employment to the landless poor, particularly in remote and agency areas. To undertake

consultancy services to the industries to raise and maintain plantations in their vicinity. Details about plantations raised by APFDC 2016-17 (upto Nov, 2016) are shown in Table 5.23.

Table 5.23 Plantations raised by APFDC 2016-17
(Area in Hectares)

Sl. No	Species	Area (upto Nov 2016)
1	Eucalyptus (Seed origin)	4614.279
2	Eucalyptus (Clonal)	31273.39
3	Bamboo	2447.48
4	Cashew	5832.67
5	Coffee	4010
6	Teak	813.95
7	Medicinal plants	581.52
8	Casuarina, Pines and other Misc. species	211.79
	Eco-Tourism Projects	201.32
	Total	49986.39

Source: Forest Department

Achievements, Projections upto Nov, 2016 are given in Table 5.24

Table 5.24 Achievements under APFDC

S. No.	Activity	Achievements during		During 2016-17	
		2014-15	2015-16	Projections	Actuals upto Nov. 2016
1	Raising of Clonal Eucalyptus plantations-Ha	1804.00	997.81	800	795.00
2	Raising of Bamboo plantations -Ha	65.00	63.61	35	37.00
3	Raising of Teak plantations -Ha	95.00	50.00	43.6	32.85
4	Harvesting of Eucalyptus pulpwood – MTs- @	13491	0	234000	2592 #
5	Harvesting of Long Bamboo – Nos.	795388	356171	844600	810039 #
6	Harvesting of Bamboo Industrial Cuts – MTs.	325	67	732	395 #
7	Harvesting of Raw Coffee – MTs.	358.437	322.349	430	375 #
8	Harvesting of Pepper- MTs.	2.80	6.419	40	Harvesting not started

Note :@ Harvesting of Eucalyptus Plantations during 2014-15 and 2015-16 seasons is not taken up as the sale of resultant pulpwood is deferred due to bifurcation of State. Hence shortfall / Nil progress in harvesting of Eucalyptus Pulpwood.

In Progress

Source: Forest Department

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Plantation Activities:

Eucalyptus Plantations:

The APFDC has been raising Eucalyptus Clonal plantations and with 31273 Ha, it is the single largest grower among PSUs in India. There are proposals to raise another 3000-4000 Ha in the next 3 to 4 years. Due to improved site preparation, use of quality planting material and management practices, optimum yields are obtained from the plantations.

Bamboo Plantations:

Bamboo plantations are raised over an area of 2447 ha. The Corporation is intending to expand the Bamboo plantations over an area of 400 Ha in the next 3 to 4 years to ensure more supply of raw material per annum to the Paper Industries besides raw material to the artisans.

Coffee Plantations:

The Corporation is maintaining about 4,010 ha. of existing coffee plantations in the agency areas of Visakhapatnam and East Godavari Districts with intensive cultivation practices, by following scientific methods. These plantations are generating about 5.00 lakh mandays of employment to the tribals all-round the year

Pepper Cultivation

APFDC has 4.09 lakh Pepper standards in its Coffee Estates in the agency areas of Visakhapatnam and East Godavari Districts comprising of high yielding varieties like Panniyur-I, Purnima, Sreekara, Subhakara, Panchami, Panniyur-5.

Cashew Plantations:

The Corporation has got cashew plantations over an area of 5833 ha, along the coastal belt in Prakasam and Nellore districts and in the inlands of West Godavari and Chittoor districts. Presently, the older plantations are being replanted with high yielding Cashew varieties using scion banks.

Eco-Tourism:

A.P. Forest Development Corporation Ltd. has developed Rajeev Eco Park at Idupulapaya of YSR Kadapa district and the same is already opened to the public.

Other Activities:

The Corporation has diversified its activities with several

schemes such as providing consultancy services in afforestation to the industries such as NTPC, HPCL etc., and supplying high quality Eucalyptus clones to the public and institutions.

It is also acting as agent to the Govt in carrying out the export of Red Sanders wood.

Employment Generation:

The Corporation is providing employment to the tribals and Srilanka repatriates almost round the year. In the other areas the employment is provided to the land less and poor during regeneration and harvesting activities.

About 9 lakh man-days of employment (3.00 Lakh mandays in raising and maintainance of plantations 3.50 Lakh mandays in Coffee plantations and 2.50 lakh mandays on harvesting of plantations) per annum are provided to the poor, tribals and Sri Lanka repatriates.

Sericulture

Sericulture in Andhra Pradesh is a sustainable farm-based economic enterprise positively favouring the rural poor in the unorganized sector because of its relatively low requirement of fixed capital, and higher returns at frequent intervals on the investment. It yields regular returns in 4 to 5 splits from one acre of mulberry.

Andhra Pradesh stands second in the country in silk production next only to Karnataka. The rain fall in Rayalaseema districts is very low when compared to the state average rain fall. Unlike coastal districts sericulture is predominant in the Rayalaseema districts. The State has also got strong industrial base besides traditional Silk handloom pockets like Dharmavaram, Peddapuram, Uppada, Venkatagiri etc., which are nationally renowned silk handloom weaving centers, encouraging the growth of Sericulture industry in the State.

In the recent past, the department is emphasizing more on Bivoltine Raw silk Production with implementation of CDP due to which on Farm & Non-Farm Sectors have gained momentum in the State. The goal of the department is to produce International 2A and above grade Bivoltine Silk production duly sanctioning of ARMs in the State

under private sector. The Dept. is also concentrating on strengthening of marketing system duly providing incentives on production of Bivoltine and CB cocoons to the farmers.

Vision

- To place Andhra Pradesh as one of the leading states in silk production, by first meeting domestic requirements and catering to exports of silk and silk garments later
- To promote sericulture as an alternate and viable option to meet the challenges of agrarian crisis
- To promote rural livelihoods for employment creation and poverty alleviation through sericulture sector in the state

Initiatives

Prioritize production of Bivoltine Silk, improve quality and quantity of Mulberry silk, focus on production of Bivoltine Silk through Cluster approach and integrate both on Farm and Non-Farm activities within the cluster/ district. Leaf to cloth approach for development of Bivoltine Silk production in East Godavari, Ananthapuramu and Chittoor districts are showing good results. The department adopts Life cycle approach for balanced growth of farmers, reelers and silk weavers. Eco-friendly production process in Mulberry cultivation to help to reduce the climate change. The Government is striving to achieve higher productivity through focus on Bivoltine cocoon production, area expansion of Mulberry cultivation, encouraging low cost silk worm rearing sheds, strengthening extension efforts through training and publicity and Convergence approach for maximizing results. Linking with NABARD, RKVY, ATMA, MG-NREGS, APMIP and other schemes.

Catalytic development programme (CDP):

The department of Sericulture has implemented Catalytic Development Programme (CDP) for development of sericulture by supporting infrastructure, technical up gradation and financial improvement of Sericulture farmers. The Govt. Of India, Ministry of Textiles had discontinued the CDP schemes from 2015-16 and the CSB has restructured on going central sector schemes as RCS (Re structured Central Schemes) and released assistance

under RCS scheme from 2015-16 to 2016-17. Under RCS schemes the financial assistance is being provided to strengthen seed sector, post Cocoon sector, Vanya sector, Capacity building and R&D schemes.

In Andhra Pradesh during 2016-17 much emphasis is given for promotion of components under SCSP/TSP sector with 90% subsidy. Out of total release of Rs.804.44 lakhs of Central share as on date, an amount of Rs.422.85 lakhs were released to SCSP (Rs.360.57 lakhs) and TSP (Rs.62.28 lakhs) sectors to improve financial status of SC/ST sericulture farmers. The financial support is extended to the reelers/ weavers for establishment of Filature/ Multi-end/ Automatic Reeling Machines / Twisting units and Weaving Units so as to increase marketing for Bivoltine cocoons and produce International 2A and above grade Raw Silk in the State.

Cluster Promotion Programme (CPP):

In Andhra Pradesh, much emphasis is being given for the promotion of Bivoltine hybrid programme through cluster approach. The following 13 Clusters have been established in 8 potential districts of the State and the programme is being implemented with the coordination of CSB and State dept. officials/ staff for technical guidance to the farmers. The financial assistance is being provided from CDP/CS schemes.

Supply of 100% chawkie worms:

The Success of Bivoltine crops depends upon the supply of BVH Chawkie worms to the sericulture Farmers. In order to supply Chawkie worms to the farmers, Special attention is paid on strengthening 47 Govt. Seed Farms and also by encouraging the farmers for establishment of Chawkie rearing Centres under private Sector for better productivity of Bivoltine Cocoons. During the year 2016-17, full equipped Chawkie rearing centers with incubator were newly sanctioned 2 for Ananthapur and 3 for Chittoor in addition to already existing CRCs . The Chawkie rearing equipment is also sanctioned to the existing Pvt. CRCs. Hence all CRCs existing under private sector and Government sector shall meet the requirement of Chawkie worms to the farmers during 2016-17 and ensure 100% Chawkie worms supply.

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Rastriya Krishi Vikas Yojana

The Dept is availing financial assistance under Rastriya Krishi Vikas Yojana (RKVY) for development of infrastructure as well as for improvement of soil health under both Govt. and Private sectors. Funds are sanctioned to the Govt. Farms for Farm mechanisation under RKVY. 50% (i.e Rs.750/- for 100 DFLs) subsidy to BVH Chawkie charges is also being released under the said scheme to the farmers to encourage Chawkie concept. During 2014-15, subsidy was provided to the farmers for constructions of verandas to their existing rearing sheds. Solar Lighting Units, supply of additional neetrika to bivoltine farmers are also sanctioned with 50% RKVY subsidy.

MG-NREGS:

The department is providing financial assistance to the farmers under MG-NREGS towards plantation of Mulberry for the first year and maintenance of the garden for second and third years also. The construction of silk worm rearing sheds are also taken up under MGNREGS from 2016-17 onwards. The unit cost per acre is Rs.1,54,136/- for (3) years put together. Providing financial assistance to the tribal beneficiaries for Tasar Rearings is also under active persuasion under MG-NREGS.

Development of Non-Farm Sector

Providing incentives on silk production

- Rs.130/- per kg for bivoltine silk produced on multi-end silk reeling units and Rs.150/- per kg for the silk produced on Automatic Reeling Machines.
- Rs.80/- per kg for Multi-voltine silk produced on multi-end silk reeling units
- Rs.30/- per kg for motorized charka, backend Italian model charka & cottage basin silk in the state.
- An amount of Rs.40.87 lakhs was released under Raw Silk incentive to the reelers against the production of 78.28 M.Ts Raw Silk during 2016-17 (upto October 2016) under State Plan.
- 50% subsidy on the cost of reeling sheds
- Digital display boards are established in the Government cocoon markets of Hindupur (Anantapuramu dist) and

Kuppam (Chittoor dist.) for market rates awareness to the farmers with update information of A.P Markets and Karnataka Markets.

- Establishment of silk exchange in Proddutur of YSR District and Hindupur of Anantapuramu district for dupion and raw silk trading.
- Establishment of Automatic Reeling Machines (ARM) in the State during this year for enhancement of the International Grade Bivoltine Raw silk production.

Inspired by the policies of the state, One Entrepreneur is establishing one 400 end ARM in Madanapalli, Chittoor dist by meeting himself the total unit cost.

Impact of Initiatives

The Bivoltine cocoon arrivals increased from 1392.667 Mts to 1743.826 MTs upto October,2016 in the cocoon markets of A.P through incentives to the farmers. Hitherto most of the cocoons produced in the state were purchased by Karnataka state and got converted to silk in Karnataka State. With implementation of cocoon incentive scheme, a quantity of 1743.826 MTs of cocoons was consumed by the local reeling units in the state up to December, 2016.

Status of Sericulture industry

32560.88 M.Ts of CB Cocoons and 4530.79 M.Ts of BVH Cocoons were produced during 2015-16 . During 2016-17, a quantity of 20123.12 M.Ts of CB Cocoons and 2973.07 M.Ts of BVH Cocoons are produced up October 2016. The productivity for 100 DFLs (Cocoon production) is increased to 68 Kgs. Necessary steps are being taken for further increase in productivity more than 68 kgs per 100 dfls by ensuring 100% supply of chawkie worms to the farmers and organising exposure visits to Tamil Nadu state where the productive levels are 72 Kgs.

State schemes

- Supply of HYV Mulberry Saplings.
- Supply of quality disinfectants to increase the productivity.
- Providing Rs.100/- Assistance on cost of 100 BVH DFLs and Rs 150/- per 100DFLs towards chawkie Charges.
- Providing Assistance to the farmers for Farm

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mechanisation to purchase like secatures, brush cutters, power sprayers etc., with a maximum assistance of Rs 10,000/- (or) 50% of the unit cost whichever is less.

- Assistance for construction of rearing sheds and supply of rearing equipment.
- Incentive to reelers against production of raw silk on improved multi end and improved cottage basin silk reeling units.
- Production incentive for the reeling cocoons produced by farmers including Tasar cocoon Production.
- Providing assistance to Charka reelers for conversion in to 6 basin reeling units.
- Integration of charka/ MERU reeling units to twisting units.
- Yarn support price to silk weavers who are outside Co-operative fold
- Implementation of e-governance projects.
- Share capital assistance to SERIFED.
- Providing assistance to Tasar Grainages.
- Providing assistance for maintenance of Tasar chawkie gardens.

Yarn support price to silk weavers:

On purchase of 4 Kgs of Silk Yarn by an individual weaver outside the co-operative society, assistance of Rs.150/- for 4 Kgs of silk yarn, per month will be provided. Rs.43.25 crore yarn subsidy during 2016-17 has been paid to 35069 nos. of weavers.

Research and Development

Andhra Pradesh State Sericulture Research and Development Institute, Hindupur was established with the main intention of evolving new races, to the condition suitable to A.P climatic conditions and capable of producing International grade Cocoons/ Silk. A new project namely "Identification of DNA markers" for baculovirus resistance in Silkworm was presented to DBT, New Delhi for financial sanction. Six new Silk Worm hybrid races were developed by the institute and submitted for National Silk Worm Race Authorisation. Bivoltine hybrids with disease resistance races are under field trials. In addition, certain eco-friendly disinfectants such as Seri-Gold, Seri-Clean, Seri- Plus, Shakthi and Abhya etc., are released in the field

for increase in Cocoon production from 5 Kgs to 10 Kgs for 100 DFLs. Achievements and status during 2015-16 (upto Oct, 2016) are shown in the Table 5.25 details of district wise achievements made under Sericulture sector is given in Annexure 5.32.

Table 5.25: Sericulture - Achievement during 2016-17 (up to Oct, 2016)

Sericulture	
Area under Mulberry- cumulative area in Acres	79377.07
Cocoon Production (MTs)	23096.20
Raw silk production MTs	3268.18
Tasar Cocoon production (lakh No.)	7.50
On-Farm Sector:	
Mulberry Acreage as on 31.10.2016	79377Acres.
No. of farmers covered (by the end of 31.10.2016)	66037 Nos.
Ave. Cocoon Production per year	31,098 M.Ts.
Ave. Raw Silk Production per year	4,212.48 m.Ts.
Ave. Productivity per 100 DFLs	68 Kgs.
Ave. Net income per acre/ year	Rs.75,000/-
Employment generation in both On Farm & Non Farm activities	3.968lakh Nos.
Non-Farm :	
1 Reeling Sector:	
a)Total Reeling basins required to convert the Reeling Cocoons into Raw Silk locally	15,500 Nos.
b)Existing Reeling Basins:	
i) Charkas	716
ii) Cottage Basins	152
iii) Multiend Reeling Basins	1440
iv) Automatic Reeling Basins	120
Total existing Basins	2,428
Additional Basins required	14,070
2 Twisting Sector:	
a) No. of Twisting Spindles Required to convert the Raw Silk in to twisted yarn locally	15,72,500
b) Existing Twisting Spindles	3,95,525
c) Potential available for additional Spindles	11,76,975

Source: Sericulture department

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Incentive on BVH & CB Cocoon and Raw Silk Production:

The details of production incentive on Cocoon production and Raw silk production:

S. No	District	Production incentive/Kg on Cocoons	
		CB(in Rs.)	BV(in Rs.)
1	Anantapur & Chittoor	10/-	50/-
2	Other Districts	20/-	50/-

S. No	Grade of Silk produced	Production incentive per Kg(in Rs.)	
		Multi end Reeling Units	Automatic reeling units
1	2A and below(BV)	130/-	130/-
2	Above 2A Grade(BV)	130/-	150/-
3	CB Silk	80/-	80/-
4	Silk Yarn CB or BV	35/- on the silk produced on Charkha, Cottage basin & backend reeling units	

E-governance initiatives:

- Benefits to farmers / silk reeler / weavers are transferred through online banking system.
- Cocoon rates are made available through SMS by sending message to Seri_CB/Seri_BV to 9704742555.



Agricultural Marketing

Marketing is a key link in the supply chain. Markets functioning effectively are essential for driving up the growth in the agriculture sector and for generating employment and economic prosperity in rural areas. Agricultural marketing infrastructure plays a pivotal role in the fostering and sustaining the tempo of rural economic development and is critical for better performance of the agriculture sector as a whole. Effective marketing infrastructure is essential for cost effective marketing, to minimize post-harvest losses.

Market Yards -324

*Revenue collected by Market Committees
-Rs. 470.06 crore in (2015-16)*

*Under Rythu bandhu padhakam 1715 of
farmers were benefited (upto Oct 2016)*

Rythubazars-84

It is envisaged that large investments are required for development of post harvest and cold chain infrastructure nearer to the farmers' field. With rapidly changing production-consumption trends, the requirement of cold storages in markets has increased manifold more so in case of perishable commodities. Successful marketing requires learning new skills, new techniques and new ways for obtaining market price information. With a view to provide dynamism and efficiency into the marketing system, the government has undertaken several measures in the recent past.

The State has 191 Agricultural Market Committees managing 324 market yards including sub-yards, of which 98 are functioning, which consists of 19 members viz., 12 members from growers, 3 from traders and the other four from representatives of local bodies and Government departments. The Committee is headed by a Chairman

from grower members. All members are nominated by the Government. Every Market Committee has a Secretary, who is the executive authority of the Market Committee. All the staff of the Market Committee is appointed by the Market Committee/ Director of Marketing /Government as per AP (AP & LS) Markets Rules, 1969 as amended from time to time.

The Market Committees levy and collect market fee at the rate of 1% Ad-Valorem on sale and purchase of notified agricultural produce payable by purchasers of produce. Market fee is the only source of income for Market Committee. The market fee is utilized mainly for development of markets and creation of facilities to users of markets i.e., growers and traders and other functionaries. The Agricultural Marketing department under takes various activities such as regulation of trade in market yards, management of markets, facilitation for procurement operations under Minimum Support Price (MSP), providing loans to the farmers under Rythu Bandhu Pathakam, Market Intervention, Management of Rythu Bazars etc., The Market Committees collected Rs.470.06 crore in 2015-16 and Rs.257.98 crore during 2016-17 (up to November 2016) towards market fee. The details of district wise collection of market fee are given in Annexure 5.33.

Initiatives

- 18 Markets are the new functional markets.
- Purchase transactions are being conducted through Electronic Platforms (Unified Market Platform) in 22 Agricultural Market Committees (e-Trading).
- 22 New Godowns with a capacity of 0.39 Lakh MT. have been constructed during the year 2016-17 and 30 godowns with a capacity of 0.65 Lakh MT are under construction.
- Covered 5 platform with 2.00 Lakh Sft., 212 trading shops and 36 Ripening chambers with a capacity of 675 MTs was constructed.
- Onion Storage facility at 3 places in Kumool District with 1800 M.Ts capacity with a cost of Rs.3.50 Crores has been developed. Another 3 storage units with 1500 MTs are under construction.
- 3.23 lakh seedlings are planted in the agricultural market yards in the state during Vanam-Manam Programme during, 2016-17.

Rythubandhupathakam :

Under this scheme, an amount of Rs.33.42 crore loans were distributed to 3414 farmers during year 2015-16 and an amount Rs.21.09 Cr. are distributed to 1715 farmers during 2016-17 (upto Nov-2016). The details of loans are given in Table 5.26

Table 5.26 Loans given to farmers

Year	Loan Amount (Rs in cr)	beneficiaries
2010-11	10.77	2593
2011-12	8.38	1240
2012-13	10.94	1862
2013-14	15.33	2194
2014-15	26.01	3145
2015-16	33.42	3414
2016-17 (upto 11/16)	21.09	1715

Source: Commissioner, Agricultural Marketing

Market Reforms

The Government has adopted A.P. Agricultural Marketing Policy 2015 to improve the transparency and efficiency of the Markets and create competitive, credible and hassle free primary marketing system in the State and elimination of barriers to participation in markets. As part of this policy, the A.P (Agricultural Produce and Live Stock) Markets Act, 1966 has been amended vide Act No.14 of 2015. The Government has launched e-trading in 10 Agrl. Market Committees. Viz. 1. Anakapalli 2. Eluru 3. Duggirala 4. Guntur 5. Kurnool 6. Adoni 7. Yemmiganur 8. Kadapa 9. Hindupur and 10. Kalyanadurg.

The Government of India sanctioned 12 markets in the State under National Agricultural Market (NAM) through Agri-Tech infrastructure fund (ATIF) for a common e-Market Platform. The markets are located at 1. Palamaner, 2. Madanapalli, 3. Punganur, 4. Kalikiri, 5. Gurrankonda, 6. Podalakur (AMC, Rapur) 7. Dacheppalli (AMC, Piduguralla), 8. Pattikonda, 9. Ananthapuramu, 10. Denduluru, 11. Gopalapuram and 12. Tenali

e-trading is going on in the above markets. A Direct Purchase Center (DPC) license has been issued to Archer Daniel Midland (ADM) India Agro Industries, Latur & Vizag Private Limited for procurement of Maize, Oilseeds and Pulses as per the provisions of Sec 7(7) of the amended Markets Act read with Rule 48-A of amended A.P. Markets Rules.

AGRICULTURE AND ALLIED ACTIVITIES

Link Roads:

20% of market fee collected during 2014-15 to be utilized for developing link roads from agricultural fields to market yards in convergence with MGNREG Scheme. So far proposals of link roads pertaining to 128 AMCs (out of 191 AMCs) covering 2446 link roads with cost of Rs.13437.24 Lakhs (Rs.6718.62 Lakhs of AMC+ Rs.6718.62 Lakhs of MGNREGS) sanctioned.

Market Intervention

The Department taken up Onion Market Intervention during February to May 2016 - procured 2678 MTs of Onions in Kurnool district and arranged sales through Rythu Bazars in the State at no profit no loss basis. Onion Market Intervention was again taken-up during September and October, 2016 and procured 2747 MTs of onions in Kumool District (about Rs.2,20 Crores) and arranged sales through Rythu Bazars at no profit and no loss basis. Coconut Market Intervention was taken up from 3rd April to end of May, 2016 and procured about 3 lakh coconuts in E.G. District and arranged sales in Rythu Bazars of the State. Details of godowns are given in Annexure 5.34



Rythu Bazars:

There are 84 Rythu Bazars across the state. 11 New Rythu Bazars are under construction. They are; Tiruvuru, Kuchipudi, Payakapuram, Gannavaram, Velpur, Tekkali, Kotabommali, Kaikaluru, Koyyalagudem,

Chinthalapudi and Kotarubilli New Rythu Bazars 9 Nos sanctioned :Tanuku Jangareddygudem, Tadepalligudem, Nidadavolu Lingapalem, Nallajerla, Buttaigudem, Gopalapuram and Pedapadu. Renovation, improvement and facelift works have been carried out in 51 Rythu Bazars. Action is taken to improve the functioning of Rythu Bazars. Farm 2 Home programme is introduced at Guntur and Rajahmundry where farmer groups are selling vegetables directly to consumers through Retail outlets and Mobile Rythu Bazars



Maintenance of Storage Facilities

Presently 1055 godowns with 7.98 lakh MT storage capacity are available in AMCs in the state. From 2011 onwards godowns are being constructed with upgraded technology. Due to this, roof panels of godowns are mechanically seamed (Inter-locked) and they are free from holes, nuts, bolts, overlaps, ensures zero maintenance and also resistant to extreme weather conditions and 100% leak proof roofs. 33 Godowns are sanctioned in 13 Districts with 62500 MTs capacity, with an estimate cost of Rs.3710.00 Lakhs. All the godowns are at different stages of execution. Accreditation and Registration of the Godowns of Agricultural Market Committees with Warehousing Development and Regulating Authority (WDRA) has been taken up for making them fit for scientific storage. Repairs and upgradation works have been taken up in 210 Godowns and secured Certificate of Accreditation. 302 Godowns are identified for taking up works for Accreditation.