

## **Agriculture:**

Andhra Pradesh State is identified as the “bejewelled rice bowl of India”. Agriculture plays a crucial role in the economy of Andhra Pradesh. Large segment of the population is dependent on the agriculture sector for employment and income. About the population of A.P. lives in rural areas and depends for its livelihood on agriculture and the rural non-farm sector. Expansion of farm incomes continues to be an effective strategy for reducing poverty. Rapid and sustainable growth in Agriculture has been identified

not only as a key driver for economic development but also for achieving self-sufficiency and ensuring food security to the people.

Andhra Pradesh over the decades has witnessed gradual transformation of the agricultural sector. The nature of the transformation itself has undergone change overtime. During 1980s, there was a shift in agriculture from traditional cereal-based system towards commercial commodities such as oil- seeds, cotton and sugarcane. By 1990s, even though the crop sector witnessed high volatility due

Reviving the agriculture sector and help the farming community is the most important priority for the state of Andhra Pradesh. The farming sector, despite subjected to frequent crisis, remains the major source of employment, supporting lakhs of farm families.

The State with rich Livestock resources Poultry is currently providing livelihood to about 46 lakh farm families. AP State is in the forefront in egg, milk and meat production. Fisheries sector is identified as one of the growth engines for rapid socio and economic transformation of the State. Andhra Pradesh, evolving strategies to become the aquaculture capital of the world and a marine processing hub of the country, stands first both in production and in value terms in total fish/ prawn production in India.

## **Primary Sector Mission:**

The Primary Sector Mission launched by government will address the farm related issues like enhancing value addition from horticulture, livestock and fisheries and shortages in storage space including cold storages. 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 Swarnandhra Vision by 2029. The focused areas under the Primary Sector would be: (a) increasing productivity of the primary sector; (b) mitigating the impact of droughts through water conservation and micro-irrigation; (c) postharvest management to reduce wastage; and (d) establishment of processing, value addition capacity and supply chain of the identified crops.

ICRISAT has been identified as the knowledge partner and this agency entered into an agreement with the State Government. ICRISAT is playing a crucial role in providing technical assistance to the Government of Andhra Pradesh in steering this process of Primary Sector development.

In view of the importance, the state is giving top priority for land and water related activities a separate budget is being prepared for the Primary Sector.

The challenge is to use the employment generating programs like NREGS to build assets such as rural roads, micro-irrigation and water management, while also shoring up rural incomes. In the medium-term, the time is ripe for a more broad-based response to the challenges in agriculture and to ensure that agriculture grows at about 4 percent on a sustained basis. (Economic Survey of India, 2014-15).

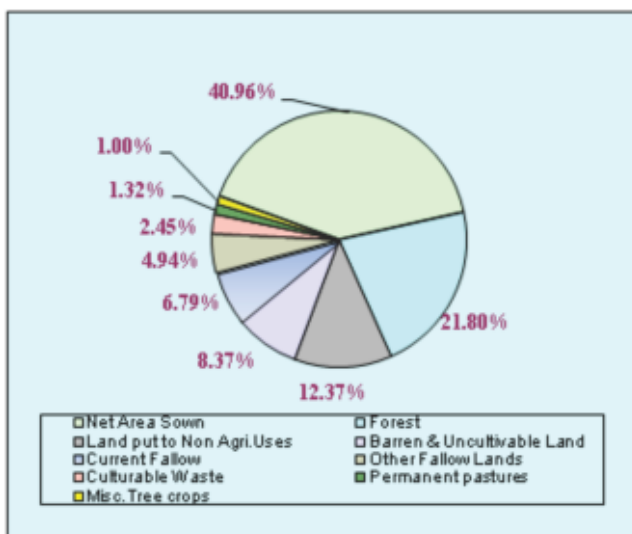
to consecutive droughts and decelerating crop yields, the transformation continued towards high-value commodities such as fruits, vegetables, milk, meat, poultry and fish. In fact, high-value commodities performed impressively and rescued the agriculture sector to a great extent.

Making agriculture viable and profitable, improving incomes in agriculture and allied sectors are of top priority for the State. Andhra Pradesh is set to scale new heights in agriculture during the 12<sup>th</sup> Five Year Plan with renewed focus on Micro Irrigation, System of Rice Intensification (SRI) cultivation, Micronutrient Application, Development of Dry Land Agriculture, Farm Mechanization, increasing storage capacity and other agriculture related strategies.

Priority was accorded to the Agricultural Sector during 12<sup>th</sup> Five Year Plan period with an objective of shifting the excess labour force from the sector to other non-farm rural sectors such as rural industry through skill development to improve productivity. Ensuring food security and provision of gainful employment continues to be the essential premise of socio economic development and employment guarantee schemes like Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) and other Rural Livelihood programmes.

### Land Utilization

**Chart 5.1 : Land Utilization in Andhra Pradesh 2013-14**



Source: Directorate of Economics & Statistics A.P

The total geographical area of Andhra Pradesh is 160.20 lakh hectares. Out of this, 40.96% is under Net Area Sown (65.61 lakh hectares), 21.80 % under Forest (34.93 lakh hectares), 6.79 % under current fallow lands (10.87 lakh hectares), 12.37% under Land put Non-Agricultural uses (19.82 lakh hectares), 8.37 % under Barren and uncultivable land (13.41 lakh hectares) and remaining 9.71% is under other fallow land, cultivable waste. Lands like permanent pastures and other grazing lands and land under miscellaneous tree crops and groves are not included in the Net Area Sown. The Land Utilisation particulars from 2008-09 to 2013-14 are given in the Annexure 5.1 and District wise Land Utilisation particulars during 2013-14 are given in Annexure 5.2. this figure does include area of the villages for seven mandals of Khammam District merged in A.P.

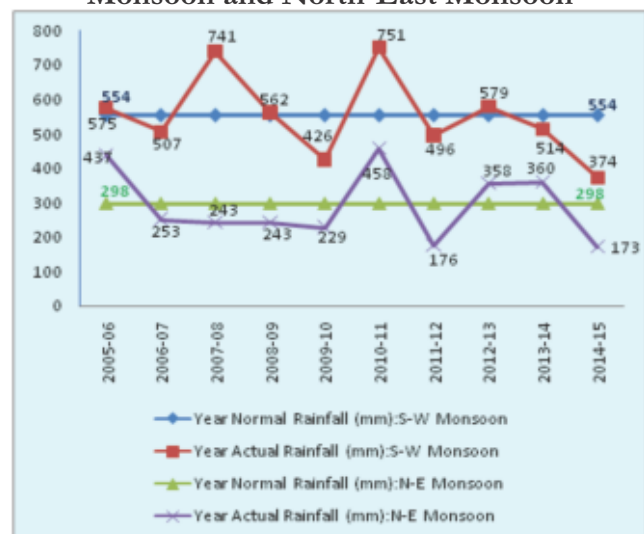
### Rainfall

Rainfall received during the South West Monsoon period for 2014-15 was 374 mm as against the normal rainfall of 554 mm, recording a deficit by 32%.

The rainfall received during the North East monsoon period for 2014-15 was 173 mm as against the normal rainfall of 298 mm, recording a deficit of 42%.

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 10 years is depicted in chart 5.2

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



## Different Soil Types

Sand, silt, and clay are the basic types of soils and most of soils are made up of a combination of these three. The texture of the soil, how it looks and feels, depends upon the amount of each one in that particular soil. There are various types of soils and the formation of soil is primarily influenced by major factors such as climate, altitude and composition of bedrock etc. Disproportion in the annual distribution of rainfall in the country and excessive heat contribute special characters to the soils. Andhra Pradesh has different types of soils are given in Annexure 5.5

## Area and Production (Kharif and Rabi Season – Second Advance estimates 2014-15)

As per the Second advance estimates, the area as well as production of food grains for the year 2014-15 are expected to show decrease over the previous year's achievement. The area under food grains is estimated to be 39.08 lakh hectares in 2014-15 as against 42.81 lakh hectares in 2013-14, showing a decrease of 8.7%. The total production of food grains in 2014-15 is estimated 111.43 lakh tonnes while it was 116.98 lakh tonnes in 2013-14, showing a decrease of 4.7%.

### Kharif

The area under food grains in Kharif 2014-15 is estimated to 20.38 lakh hectares while it was 21.90 lakh hectares in 2013-14, showing decrease of 6.9%. Similarly, the production of food grains in Kharif 2014-15 is also estimated to move up to 55.99 lakh tonnes from 50.86 lakh tones in 2013-14, a growth of 10.1%.

The area under Rice in Kharif 2014-15 is estimated at 16.35 hectares while it was 17.06 lakh hectares in 2013-14. Similarly, the production of rice in Kharif 2014-15 is estimated 50.24 lakh tonnes vis-a-vis 43.57 lakh tonnes in 2013-14.

### Rabi

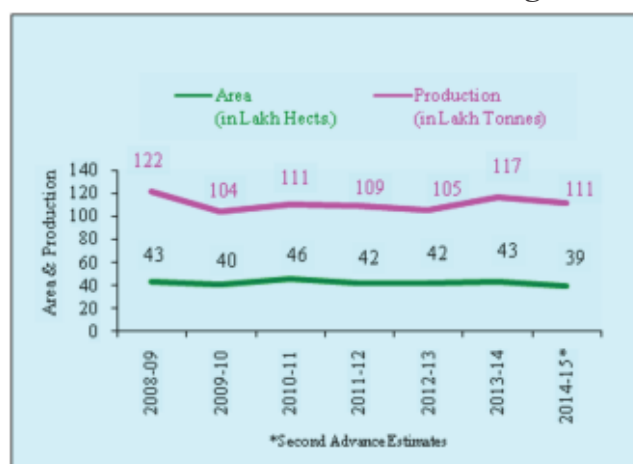
The area under foodgrains in Rabi 2014-15 is estimated to 18.70 lakh hectares while it was 20.91 lakh hectares in 2013-14. Similarly, the production under foodgrains in Rabi 2014-15 is estimated to 55.44 lakh tonnes while it was 66.12 lakh tonnes in 2013-14.

The estimate of the area under rice in Rabi 2014-15 is 7.66 lakh hectares while it was 8.77 lakh hectares in 2013-14. Similarly, the production estimates under rice in Rabi 2014-15 is 30.77 lakh tonnes while it was 36.36 lakh tonnes in 2013-14.

Details about the area and production of food grains from 2008-09 to 2014-15 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 depicts in chart 5.3.

**Chart 5.3: Area and Production of food grains**



### Cropping Intensity

The cropping intensity (the ratio of gross cropped area to net cropped area) is one of the indices of assessing efficiency of agriculture sector. The cropping intensity for the year 2013-14 was 1.24.

### Gross and Net Area Irrigated

The gross area irrigated in the State increased to 40.96 lakh hectares in 2013-14 from 37.11 lakh hectares in 2012-13. The net area irrigated in the state increased to 30.14 lakh hectares in 2013-14 as against 28.01 lakh hectares in 2012-13 showing an increase of 7.60 percent. The source-wise, district wise gross and net area irrigated in the State from 2008-09 to 2013-14 are given in Annexure 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 2010-11.

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 and Strategies**

One major concern of the State is to improve farm income both in absolute terms and as a percentage of GSDP. The department of Agriculture is therefore working with a mission of attaining sustainable agricultural production with minimum cultivation cost, which will eventually enhance return on investment to the farmer.

It is aimed to transform the state agriculture sector into a dynamic, high growth sector, which would be the real power house of state agriculture in next eight years. Therefore the plan is that Agriculture should contribute about Rs.60000 crores to GSDP by 2021-2022 as against the existing contribution of Rs.44,418 crores (constant prices 2013-2014). The following strategies are being adopted for making the mission a reality:

- “Sustained and coordinated efforts” for facilitating a second green revolution and device strategies for optimum use of natural resources to create new avenues in Agriculture for livelihood and strengthen the rural areas. Government site-specific system is to ensure that at least a part of the fallow lands are brought under cultivation by increasing irrigation sources.
- New seed technology and post harvest technology are need to be addressed.
- 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.
- Credit provides necessary liquidity and insurance provides command over resource to the farming community.

- Re-engineering extension approach for effective extension reach.
- Empowering farmers with advanced agricultural practices.
- Capacity enhancement of departmental staff for efficient use of extension technology.
- Ensuring timely input supply.
- Regulation of inputs and quality control.
- Soil test based fertilizer recommendation.
- Promotion of self reliance in seed production among farmers.
- Promotion of Integrated Crop Management through Integrated Nutrient Management (INM), Integrated Pest Management (IPM), Efficient Water Management, etc.
- Promotion of organic farming to meet the demands of World Market.
- Correcting micronutrient zinc deficiency.
- Reclamation of problematic soils to restore the productivity.
- Natural Resource Management through watershed approach for development of agricultural land and environmental stability.
- Calamity management in the event of drought, floods, hailstorms etc.
- Promoting cultivation of low risk and low cost intensive crops.
- Farm Mechanization for item and cost effective farming practices.
- Promoting Farmers Organization (Rythu Mitra Groups-RMG) for technical and monetary benefits in Agriculture and allied activities.
- Facilitate Agriculture Credit to farmers.
- Women Empowerment and gender balance.
- Provide day to day information to farmers on crop production, input supply, and marketing through internet (AGRISNET)



### Initiatives for increasing productivity levels

- Developing farming situation based production plans.
- Disseminating improved technologies through extension out-reach.
- Ensuring availability of quality Agricultural inputs.
- Reducing cost of production by educating farmers on improved crop management practices like Integrated Nutrient Management (INM), Integrated Pest Management (IPM), and Water Management (WM) and Post Harvest
- Technologies (PHT).
- Providing improved Agricultural implements and farm machinery for reducing cost of cultivation.
- Crop diversification programme.
- Assisting farmers in natural calamities like droughts, floods and cyclones by providing relief and inputs for alternate cropping programmes.
- Implementing National Watershed Development Project for Rainfed Areas (NWDPRRA) for development of Sustainable dry land agriculture.
- Improving soil health through soil test based fertilizer recommendations, encouraging green manuring, vermi-compost, reclamation of problematic soils and correction of micro nutrient deficiencies.
- Facilitate availability of credit to more non-loanee farmers and tenant farmers.

### Major Initiatives:

- Separate Agriculture Budget.
- Implementation of Mission Project in the lines of Bhuchetana in coordination with international institute, ICRISAT.
- Special project for Supply of Micro Nutrients.
- Launching of Primary Sector Mission.
- Polam Pilusthondi Programme.
- Establishment of Rythu Sadhikara Samstha.

- Chandranna Rythu Kshetram.
- Strengthening of Agriculture Extension.
- Enhancing agriculture productivity by improving Soil Health - Intensifying soil samples collection by May end using GPs based soil collection and develop soil test data reports.
- Crop wise approach for increasing productivity.
- Focus on micro irrigation.
- Integration of Agriculture with NREGS.
- Focus on Farm Mechanization.
- Extensive usage of ICT in Agriculture

### 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 exploring the possibilities of value addition to increase the income of the farmers.

#### Strategies:

Foster rapid sustainable growth, strengthening local service providers, community participation, providing effective extension services, promoting farmer led extension, promoting scientific approach for increased farm income.

#### Action Plan:

The Polam Pilusthondi programme is conducted for two days in a week by the Agriculture Department i.e., on Tuesday and Wednesday along with the officials of the allied departments with the consent of the concerned public representatives. Each day two villages have to be covered.

During the Kharif 2014, the Programme was organized in 21,724 villages covering 8,13,244 farmers (including 1,24,000 women farmers) and all the villages are covered during the Janma Bhoomi-Maa Vooru programme.

The Posters, Pamphlets and Village specific materials have been prepared on the schemes implemented by the Government and distributed to the farmers at the time of attending the programme.

An amount of Rs.3.25 Crores was allocated for Kharif, of which an amount of Rs.90.71 lakhs is released. The Programme was continued from 25<sup>th</sup> November for a period of three months in the Rabi season also.

As on 03-12-2014, during Rabi 2014-15, 5241 villages are covered and interacting 1,55,543 farmers (including 24,126 women farmers).

### **Trainings for Farmers, Farm Women and RMGs:**

In view of the rapid changes occurring in agriculture sector, it is necessary for upgrading 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 womens' participation in the overall agricultural development and thereby increasing their income levels.

### **Monthly Workshop**

Monthly workshops are held regularly at identified research stations of ANGRAU in all districts on first Saturday. Departmental Officers and Scientists of ANGRAU discuss and formulate production recommendations for the ensuing month. The forenoon session of the workshop is allotted for discussion on problems and finalization of messages based on field visit conducted in concerned research station. One hour is exclusively set apart in the agenda for discussion of the issues of line Departments. 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, who are the actual stake holders.

The information obtained in the monthly workshops will be displayed as black board messages in every village. These messages may also be communicated to the farming community in shape of supporting literature, such as leaflets / pamphlets / handouts / Radio / Television messages on important current issues relevant to farmers and they will issue a fresh note also.

### **Zonal Research Extension Advisory Council Meeting**

Zonal Research Extension Advisory Council Meetings (ZREAC) were conducted in all Agro-climatic zones during Kharif 2014. During these meetings, research gaps for the zone as a whole and production recommendations for major crops were provided to departmental officers and research priorities were finalized. Officers from the department were deputed and problems were reviewed. The ZREAC for Kharif season was conducted in the month of April and was organized by ANGRAU.

### **Padi Pantalu Monthly Magazine**

The Telugu Monthly Magazine - Vyavasaya Padi Pantalu is printed and distributed every month to farmers and Adarsha Rythus etc by the Department. Every month 60,000 copies were printed and distributed during the year 2013-14. The articles covered in the magazine pertain to the Agriculture and allied departments like Animal husbandry, Horticulture, Sericulture, Fisheries, Co-operative & Marketing, Irrigation, A.P Transco, AP Dairy Development Corporation, AP Seed Development Corporation and AP Agros, etc., and department wise latest technical information on the various schemes, their aims and objectives, guide lines, subsidy pattern and suggestions to the farmers related to the concerned season/ month were also published.

### **Soil Testing**

Soil sampling and soil testing program is organized in a systematic manner to evaluate the fertility status, identify soil problems (Salinity/Sodality) and for facilitating optimal soil productivity, improving fertility and reclaiming problematic soils. 16 District Soil Testing Labs (STLs) (13 labs in the 13 districts and 3 established under National Project in Kurnool, Vizianagaram and SPS Nellore), 1 Regional Soil Testing Labs, 3 Mobile Soil Testing Labs and 30 Mini Soil Testing Labs are located at Agricultural Market Committees (AMCs) in the State.

The departmental Soil Testing Laboratories are equipped to analyse Organic Carbon (OC-index of nitrogen content), Phosphorus, Potassium, Zinc,

Iron, Copper, Manganese, Salinity (EC) and alkalinity (pH). The mobile Soil Testing Laboratories and AMC mini laboratories however analyse only organic carbon, available phosphorus, potassium, EC and pH. The results of the soil analysis will be communicated to the respective farmers in the form of soil health cards. Fertiliser recommendations on the available nutrient contents on soil fertility status are to be given to the farmers in the soil health cards.

The target and achievements under various components of soil testing for the years 2013-14 and 2014-15 (up to December 2014) are shown in Table 5.1.

**Table 5.1 : Components of Soil Testing**

Item	2013-14		2014-15 (up to December)	
	Annual Target	Achievement	Annual Target	Achievement
Macronutrients EC and pH	166800	169669	166800	174056
Micronutrients	96400	68023	96400	69354
Water samples	13220	15404	13220	15495

Source: Agriculture Department

### **Project for enhancing Agricultural Productivity through Soil test and balanced fertilizer applications in AP with special emphasis on micronutrients correction.**

Analysis of soil samples has indicated that 40-49% of soils in Andhra Pradesh are potentially deficient in Zn, 12% in Fe, 5% in Mn, 3% in copper (Cu), 33% 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 20-24 % of soils in AP are deficient in Sulphur. Sulphur deficiency leads to chlorosis and stunted plant growth. These large scale deficiencies of multiple nutrients such as micro and secondary nutrients are reducing the responses to added NPK nutrients also. In most of the cases, farmers attribute the deficiencies caused by micronutrients to macronutrients and in turn add more quantities of NPK fertilizers to soils which do not result in increased crop yields. It is proposed to

take up a massive program in the districts, where micronutrient deficiencies are high, to correct the deficiency by covering 30% cropped area during rabi 2014-15 and 45% cropped area during Kharif 2015. Evaluation of the project will be taken up after the end of the each season.

Sl. No.	Name of the Micronutrients/ Secondary nutrients	Qty proposed to be distributed (MTs)
1	Zinc Sulphate	16000
2	Boron	700
3	Gypsum	45000

### **District Soil Testing Laboratories under Single Window Diagnostic Scheme**

The Soil Testing Labs are strengthened for seed testing and fertilizers testing to analyse service samples in the STLs wherever notified labs are not available. 11 STLs for Seed Testing and 10 STLs for Fertilizer Testing are being strengthened. These labs take up analysis of seed and fertilizer samples other than law enforcement samples. Farmers, dealers, producers or any interested person can get information about the status of seed lots and fertilizer.

### **Soil Health Management under National Mission for Sustainable Agriculture**

During 12<sup>th</sup> Plan all 66 Centrally Sponsored (GOI) Schemes are merged from 2014-15. “National Project on Management of Soil Health & Fertility” has been merged into a new Mission named as “National Mission for Sustainable Agriculture (NMSA). Soil Health management is a sub mission under NMSA, which is aimed to increase soil nutrients status and thus enhance crop productivity for ensuring food security and sustaining rural development. Application of Integrated Nutrient Management techniques has been found to increase nutrient use efficiency by integrating and balancing the nutrient dose in relation to nutrient status and crop requirements. Hence, the Sub Mission – Soil Health Management under NMSA envisages the soil health and productivity in a sustainable manner.

### **Information and Communication Technology: AGRISNET [www.apagrisnet.gov.in](http://www.apagrisnet.gov.in)**

The AGRISNET portal of the department is enriched with technical information needed and services provided to the farmers in Telugu. Package of practices of 18 important crops grown in AP, schemes & subsidies of the department & other related technical and agricultural information is available in portal. Wherever applicable, the text will be read out in Telugu for the convenience of farmers. Photos and videos are included for most of the concepts for good understanding.

### **Online Soil Health Card Generation System <http://soilhealth.ap.gov.in:8084/soilhealth/>**

Farmers can download soil health card on online using the unique number allotted to each sample. The facility is provided to send the soil test based fertilizers' recommendation as SMS to the farmers' mobile phone. More than 1,52,000 samples were made available online during 2014-15 and 1,16,090 SMS were sent to farmers.

### **Ask an expert-'Nipunulanu Adigi Telusukondi' <http://www.apagri.gov.in/asknexpert>**

This application facilitates farmers to pose queries to Scientists identified as experts from ANGRAU and concerned department officers, in Telugu. A facility is provided to add images/ files to the query and answer. More than 2000 queries were answered during this year through this system so far.

### **Online Input License Management System of Seeds, Fertilizers & Pesticides <http://www.agronline.ap.gov.in: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. More than 31,000 transactions of licences generation/amendments were done during 2014-15.

### **Vaddi Leni Panta Runaalu (Waiving of interest to farmers Crop Loans)**

The process of payment of interest amount waived off for the farmers' crop loan, directly to banks from department of Agriculture, has been automated and is implemented successfully.

### **e-Agri Labs**

An application to automate Fertilizers & Pesticides Testing Laboratories and Coding Centres through bar coding mechanism is initiated and is under trial run. Trainings were conducted to Master Trainers of districts and officers in labs.

### **Online Cropped area report**

Data entry system for weekly crop area sown & Crop Condition Particulars is developed to obtain statistics from mandal level functionaries online.

### ***e-office [eoffice.ap.gov.in](http://eoffice.ap.gov.in)***

A digital work place solution, launched by ITE&C Dept of AP, is an anywhere any time file movement software. e-office aims to support to governance by ushering in more effective and transparent inter and intra government processes. 144 departmental staff in the head office and 130 in districts were trained and got registered in the e-file system.

### **CM-Dash Board [core.ap.gov.in](http://core.ap.gov.in)**

CM office Real-time Executive Dashboard (CORE) is a prestigious web based software of the Government of AP with integrated Management Information System (MIS) dash board for the Hon'ble Chief Minister to monitor key performance indicators, crop coverage report of Kharif & Rabi and other schemes like Janmabhoomi Maavooru, Polampilusthondi reports, redressal status of grievances, Natural Calamity reliefs, input subsidy payments etc.

### **HARITA Project**

HARITA stands for 'Harmonised Information of Agriculture, Revenue, and Irrigation for a Transformation Agenda' to integrate data with Transformation, which aims in obtaining Integrated Information Services through Standardization of Data, Enhanced efficiency through "Single Source of Truth", Effective Decision-making through consistent information, Better Planning through real-time information. The system is introduced in East Godavari, SPS Nellore, Prakasam and Kurnool districts on pilot basis.



## **Mee Seva Services**

- a) The services viz, Application for subsidy implements under Farm Mechanization (2 services)
- b) Online Licence Management System - Fertilizers Dealers/ Manufacturers (33 services)
- c) Application for Subsidy Seed under General, NFSM & SVP schemes

Master trainers @ 4 per district were trained on these applications for delivering the services through Mee Seva.

## **Digital Signature Certificates**

Digital Signature Certificate Keys have been issued to all notified authorities upto MAO level and are being used in online applications to digitally sign the documents.

## **Kisan Call Center 1551 (from BSNL Landline or Mobile)/ 1800 180-1551 (from Other Landline or Mobile)**

The district specific escalated calls of Kisan Call Center – 1551 related to the department are answered by 2 ADAs from District Head office are identified.

## **Departmental Website for officers**

[www.apagri.gov.in](http://www.apagri.gov.in)

In the Departmental website, the information such as Action Plan, Seeds, Fertilizers & Pesticides Quality Control Acts, RTI act etc, tenders, publications, key contacts of the department and statistical reports of crops are available. Weekly seasonal and crop condition report is updated on every Wednesday in the department's website.

## **Subsidy Seed Distribution**

During Kharif 2014, 3.67 lakh Quintal of seed was distributed with a subsidy of Rs.49.01 crore under different schemes.

During Rabi 2014-15 indents were placed with the various Seed Supplying nodal agencies i.e. APSSDC, OILFED and MARKFED for supply a quantity of 4.39 lakh qtl of various crop seeds to the farmers on

subsidy under various schemes with a subsidy value of Rs.77.82 crores.

## **Fertilizer Policy Initiatives**

Fertilizer consumption during the year 2014-15 in terms of Product was 30.26 LMTs (Kharif 15.09 LMTs and Rabi 15.17 LMTs) and the consumption in terms of nutrients (N, P, K) was 16.52 LMTs (6.94 LMTs during Kharif 2014 and 9.58 LMTs during Rabi 2014-15).

Details about product-wise consumption of fertilizers and the nutrient wise fertilizer consumption are given in Annexures 5.14 and 5.15 respectively.

## **Nutrient Based Fertilizer Policy**

The Department of Fertilizers, Govt. of India has been implementing the Nutrient Based Subsidy Policy from 1-4-2010. Under this policy, fixed subsidy was extended on fertilizer products (DAP & Complexes except Urea) based on Nutrient content. The fertilizer companies are to decide MRPs based on the cost of the raw materials/finished goods (FGs) based on demand and supply. The Government of India communicated the subsidy fixed per kg on nutrients for the year 2014-15 w. e. f. 01-04-2014 for Nitrogen, Phosphorus, Potash and Sulphur as Rs.20.88, Rs. 18.68, Rs. 15.50 and Rs. 1.68 respectively.

## **Pesticides**

The consumption of chemical pesticides and bio-pesticides in the State of Andhra Pradesh during the year 2013-14 was 4253 MTs (Kharif 2434.27 MTs, Rabi 1818.80 MTs) & 11.19 MTs of active ingredient. The chemical pesticide consumption decreased slightly compared to last year's consumption i.e. 2011-12 due to awareness created among farmers on Integrated Pest Management practices by conducting Polambadi programmes in farmer's fields, introduction of Bt. Cotton seeds, usage of Bio-pesticides etc. The pesticide consumption particulars from 2008-09 to 2014-15 over the years is shown in Table 5.2.

**Table 5.2: Utilization of Pesticides ( M.Ts )**

Year	Pesticide Consumption (Active ingredient)	Bio-Pesticide Consumption (Active ingredient)
2008-09	4163	13.20
2009-10	4048	7.99
2010-11	4410	8.78
2012-12	882	18.08
2012-13	4249	10.33
2013-14	4253	11.19
2014-15 (Upto Dec. 2014)	3895	22.20

Source: Agriculture Department

### Farm Mechanization Scheme

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 ensures reduction of drudgery associated with various farm operations as also economize utilization of inputs and thereby harnessing the potential of available resources.

Farm equipment like land preparatory, 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 NSP, RKVY, SMAM, NFSM schemes.

Hiring Stations were also introduced in Gram Panchayat Level to make commonly used farm equipment like land preparatory equipment, cultivators, seed drills and plant protection equipment available to all the farmers, which will serve as the nodal points to rent commonly used equipment to farmers on nominal hiring charges

fixed by villagers. These shall be operated by villagers themselves. This will reduce the financial burden on farmers for buying farm equipment which is used only for a few days in a year.

Custom Hiring Centers which are crop specific i.e. Paddy (SMSRI), Mini SMSRI, Paddy Nursery Package, Paddy Harvesting Package, Maize, Cotton, Ground nut, Sugarcane are introduced to make available the high cost machinery from Sowing/Transplanting to Harvesting a crop on hiring basis to the farmers.

It is also proposed to introduce hiring of processing machinery for seeds purpose, post harvest equipment at the gram panchayat level. Fiber body is introduced for drum seeders for direct sowing purpose to mitigate erratic rainfall.

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. The 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	Beneciaries		Subsidy expenditure (Rs in Lakhs)	
	Target	Achievement	Target	Achievement
2013-14	84990	54109	15540.63	7209.018
2014-15 (up to Dec., 2014)	36607	12196	9000.00	3241.946

Source: Agriculture Department

### Crop Insurance National Agriculture Insurance Scheme

The Government have taken proactive step of implementation of National Crop Insurance Programme (NCIP) with effect from Kharif 2014 in all the Districts as per the directions of Government of India. These schemes are well received by the farmers as the Government developed needed

infrastructure and streamlined the system of implementation of Crop Insurance Programme. The new scheme “National Crop Insurance Programme” (NCIP) comprising two components i.e., 1.Modified National Agricultural Insurance Scheme (MNAIS) 2.Weather Based Crop Insurance Scheme (WBCIS) from Kharif 2014 in the state which have many more farmer friendly features.

### Modified National Agriculture Insurance Scheme

MNAIS was implemented in 4 Districts during Kharif 2013 on pilot basis was extended to all the Districts during Kharif 2014 and Rabi 2014-15 seasons to benefit the farmers in the event of crop loss due to any calamity. The scheme comprising the additional features such as coverage of prevented sowings, coverage of post harvest losses, localized calamities (hail storm) covered on individual basis, district major crop under Village Insurance Unit, 40-75% premium subsidy to all the farmers, claims processed based on past 7 years average yield by excluding 2 disaster years, on account of payment in the event of mid season crop failure, 25% of likely claim will be paid in advance to the farmers

Crops notified under MNAIS in all the districts of the state during Kharif 2014 viz., Rice (village made as insurance unit), Bajra, Groundnut(UI), sugarcane(P), sugarcane(R), Maize, Redgram, Cotton (I), Cotton(UI), Blackgram, Castor, Turmeric, Chillies(I), Chillies(UI), Sunflower.

Crops notified under MNAIS in all the districts of the state during Rabi 2014-15 viz., Rice, Blackgram, Chilly(Irrigated), Greengram, Groundnut, Onion, Maize, Jowar UI), Blackgram, Bengalgram, Sunflower and Rice(village made as insurance unit) in some districts

### Village as Insurance Unit Scheme

Apart from Mandal Insurance Unit, one major crop in each District is selected under Village Insurance Unit, which is more beneficial to the farming community. Lower size of Unit is more representative in yield assessment for computation of Crop Insurance claims. Details of National Agriculture Insurance Scheme are given in Annexure 5.16.

### Weather Based Crop Insurance Scheme

Apart from the “National Agricultural Insurance Scheme” (NAIS), the Government of Andhra Pradesh is implementing “Weather Based Crop Insurance Scheme (WBCIS)” for the benefit of farming community, which aims to mitigate hardships of the insured farmers due to the financial loss on account of anticipated crop loss resulting from incidence of adverse deviations of weather parameters like Rainfall, Temperature, Relative humidity etc. The Scheme was extended to other Crops and Districts season by season. Season wise and District-wise notified crops under WBCIS are shown in Table 5.4

**Table 5.4: Season wise and District wise Crops Notified under WBCIS**

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

### Premium Subsidy:

25% to 50% premium subsidy is allowed to all the farmers irrespective of their category.

### National Agricultural Insurance Scheme

NAIS is implemented for selected crops in selected districts during Rabi-2014-15 districts and crops are shown Table 5.5

**Table 5.5: Districts and Crops Notified**

District	Crops Notified
East Godavari	Blackgram, Greengram
West Godavari	Blackgram
Guntur	Blackgram, Greengram
YSR	Bengalgram, Sunflower, Onion, Jowar
Ananthapuramu	Bengalgram, Sunflower
Kurnool	Bengalgram

Under implementation of different Crop Insurance Programmes, Andhra Pradesh state stands in No.1 position in terms of coverage of farmers, coverage of Area, Claims paid and Farmers benefited for the last 4 years. During the year 2011-12, an amount of Rs.397 crores of claims paid benefited 8.15 lakh farmers, during 2012-13, claims for Rs.779 crores benefiting 8.85 lakh farmers and during the year 2013-14, claims for Rs.580 crores paid to 7.57 Lakhs of eligible farmers in the state.

### Agricultural Credit

The Annual Credit Plan 2014-15 for the State was Rs. 56019.16 crore towards Agriculture Credit Rs.13788.60 crore (22.61%) was disbursed under Agricultural credit. An amount of Rs.10108.02 crore was disbursed under crop loans (short term loans) as against the target of Rs. 41977.76 crore (24.07%) and an amount of Rs.3680.58 crore was disbursed as against the target of Rs.14041.40 crore (26.21%) under Agriculture Term Loans including Allied activities. The disbursements up to September, 2014 under Agriculture are finalized by the State level Bankers Committee of AP.

The Annual Credit Plan 2013-14 for the State was Rs.47016.95 crore towards Agriculture Credit Rs.49774.46 crore (105%) was disbursed under Agricultural credit. An amount of Rs. 37058.08 crore was disbursed under crop loans as against the target of Rs. 35548.65 crore (104.25%) and an amount of Rs.12716.38 crore disbursed as against the target of Rs.11468.30crore (110.88%) under Agriculture Term Loans including Allied activities. The disbursements up to 31st March, 2014 under Agriculture are finalized by the State level Bankers Committee of AP.

Details about Agricultural Credit disbursement during 2014-15 are given in Annexure 5.17.

### Credit to Land Licensed Cultivators (Tenant farmers):

The Government of Andhra Pradesh has taken a major initiative to facilitate financing Land Lisenced 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 Lisenced Cultivators (Tenant farmers).

During 2013-14, Loan Eligibility Cards (LECs) were issued to 3,84,621 (Fresh & Renewal) Land licensed cultivators by the Revenue Department. An amount of Rs.318.13 crore have been issued under Crop loans 1,56,375 LEC holders.

During 2014-15, the Revenue Department has issued Loan Eligibility Cards (LECs) to 3,39,214 (Fresh:1,70,595 and Renewal: 1,68,619) Land Licensed cultivators (Tenant farmers) in the state. An amount of Rs.58.87 crore has been given to 33,979 LEC holders so far. District-wise details of Loan Eligibility Cards and sanctioned amounts are given in Annexure 5.18

### 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 from Rabi 2011-12. The Government has announced the 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 3.00 lakhs if repaid in



time (maximum period of one year).

During 2013-14, an amount of Rs.342.23 Crore (approximate) was settled under Vaddileni Runalu and Rs. 7.57 crores was settled under Pavala Vaddi.

During 2014-15, an amount of Rs. 123.33 crore was released under the Vaddi Leni Runalu as against the allocation of Rs.212.00 crore. An amount of Rs.14.80 crore was released under the Pavala Vaddi as against the allocation of Rs.18.00 crore.

An amount of Rs.37.25 crore have been settled to 3.88 lakh farmers' accounts (as on Sept. 2014) under Vaddi leni Runalu and Rs.13 lakh have been settled to 0.07 lakh farmers' accounts under Pavala Vaddi, and the settlement of claims is under progress.

### **Agricultural Debt Redemption Scheme to farmers:**

To support the farming community to combat with the financial crisis in adverse seasonal conditions, the Government issued orders on Aug 2014 for redemption of the agricultural crop loans and gold loans availed for agricultural purpose, together not exceeding Rs.1.50 lakhs per family. In pursuance of the implementation of the debt redemption scheme to the farmers, the Government of Andhra Pradesh has established the "Rythu Sadhikara Samstha" in the month of October 2014. An amount of Rs.5,000 crore was released towards the Agricultural Debt Redemption Scheme to Rythu Sadhikara Samstha as per the 2014-15 BE. An amount of Rs.4664.35 crore has been released to 40.43 lakh farmers in Phase I. Details are given in Annexure 5.19

### **Extension Reforms**

#### **Agriculture Technology Management Agency**

Government of India introduced the "Support to State Extension Programmes for Extension Reforms" (ATMA) Scheme from 1<sup>st</sup> June 2005 in a phased manner, which is currently operational in 591 Districts of 29 States and 2 UTs. As a part of this scheme, the entire state of Andhra Pradesh was covered with 90:10 Central and State financial sharing. The Extension Reforms Agriculture Technology Management Agency (ATMA) has been included in the National Mission on Agricultural & Extension Technology (NMAET) as Sub Mission on

Agricultural Extension (SMAE). The main objectives of the programme are:

- To develop an efficient, effective, demand driven, research integrated and financially sustainable public extension system.
- To revitalize Agricultural technology Generation Assessment refinement and Dissemination Systems.
- To reform Public Sector Extension and promote private sector to effectively complement, supplement and wherever possible substitute public extension.
- To mainstream Gender concerns in Extension.
- To conduct Capacity Building/ Skill up-gradation of farmers and extension functionaries.
- To enhance the quality and type of Technologies being disseminated by the Extension System.
- To strengthen Research-Extension-Farmer (R-E-F) Linkages.

#### **Benefits of the Programme are**

- Well Integrated technology development and transfer system Decentralized decision-making.
- Financially sustainable extension system.
- Bottom-up Planning.
- Increased Use of Information Technology.
- Emphasis on in-Service Training.
- Developing New Public-Private Partnerships.
- Strengthening Key Institutions.
- Broad based Extension Delivery.

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 (Government of India/States, Membership fees, beneficiaries' contribution etc). It has the key responsibility of disseminating all technology activities at the district level. It has linkages with all the line departments, research organizations, non-governmental organizations and agencies associated with agricultural development in

the district and farmer organizations. Research and extension units within the district, such as KVKs, ZRSs, Department of Agriculture, Horticulture, Animal Husbandry, Fisheries, Sericulture, Marketing etc., are its' constituent members.

### Strategic Research and Extension Plan

One of the first tasks of ATMA is facilitation of 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 stakeholders and farmers. SREP contains detailed analysis of all information on existing farming systems in the district and research – extension gaps required to be filled-up. It also prioritizes research – extension strategies within the district. It becomes the basis for development of work plans at blocks/district level. All the 13 ATMA districts have developed their respective Strategic Research and Extension Plans. As the validity of SREPs is five years, the State has already initiated revisiting of the SREPs.

### State Extension Work Plan

The block / district level plans for the year 2014-15 based on the research-extension strategies given in the SREPs, were developed by all the ATMA districts as per the revised ATMA scheme guidelines and cost norms. The consolidated State Extension Work Plan for the year 2014-15 was developed at state level with an out lay of Rs.3445.93 Lakh. The District Action Plans developed under the scheme are to be consistent with Article 243 ZD of the Constitution.

### Major Initiatives taken up During Kharif 2014-15

Fortnightly Agricultural Market Committee Level workshops will be conducted on crop condition and emerging issues with Block level Farmers Advisory Committee (BFAC) members, progressive farmers and Scientists on 1<sup>st</sup> & 16<sup>th</sup> of every month. 170 demos on each of the following items conducted :

- Soil test based fertilizer application
- Application of Gypsum
- Performance of BT Cotton varieties
- Avoiding indiscriminate use of Urea
- Addressing critical yield gaps for increasing

Productivity of Redgram (for addressing Wilt problem and Pod Borer problem).

### Other major activities

- Seed Production Technologies, Natural Farming / Organic farming
- Millet Production Techniques, Zero tillage in Maize crop
- Integrated farming (Paddy cum fish cum Dairy culture)
- Raising of vegetable nurseries under shade nets
- ICM & IPM in Chillies, Mulching and drip in Chillies
- Promotion fodder cultivation and Feed Management
- Rearing of Rajasri birds/ Back yard Poultry
- Training on Mulberry rearing techniques.
- Balanced Use Fertilizers.

Component wise physical targets and achievements during the year 2014-15 are shown in Table 5. 6

**Table 5. 6 Physical targets and achievements**

Components	Targets	Achievements
State level activities (Trgs.to Extn. functionaries)	78	7
District level activities		
Trainings to Farmers	1915	1096
Demos	7144	2432
Exposure visits	490	57
Capacity building of FIGs	673	110
Farmer Awards	190	0
Kisan Melas	26	12
Farmer Scientist Interaction	26	8
Field Days	306	41
Farm schools	170	29
<b>Total</b>	<b>10940</b>	<b>3785</b>

Source : Agriculture Department

## Government of India Initiatives Rashtriya Krishi Vikasa Yojana

Rashtriya Krishi Vikasa Yojana – RKVY, one of the flagship programs of Government of India with 100% central aid, is being implemented by Agriculture & Allied sectors. Government of India allocated an amount of Rs.267.07 Cr. (Rs.246.95 crore under Normal RKVY and Rs.20.12 Crore towards sub schemes) for the year 2014-15. Out of this, Rs.133.54 crore was released for the year 2014-15. The Financial and Physical achievements of RKVY relating to various components for the year 2014-15 are shown in Table-5.7.

**Table 5.7 Financial achievements under  
RKVY-2014-15**

(Amount Rs in crores)

Name of the Project	Target	Achievement
Agriculture		
Seed component	29.50	21.4
Plant Protection	7.74	0.91
Soil health management	16.45	3.86
Organic Farming	10.97	3.42
Strengthening of Fertilizers Control Labs and Coding centres	1.00	0.5
Farm Mechanization	28.09	
<b>Agriculture Total</b>	<b>93.75</b>	<b>30.09</b>

Source: Agriculture Department

## National Food Security Mission

The National Food Security Mission is under implementation in the State since Rabi 2007-08. Cabinet Committee on Economic Affairs has approved continuation of NFSM Rice and Pulses during 12<sup>th</sup> Plan. Coarse Cereals including maize and commercial crops (Cotton, Jute and Sugarcane) is part of NFSM from 2014-15. The Districts identified for Implementation of NFSM Rice, Pulses, Coarse cereals and Commercial crops during 2014-15.

## National Food Security Mission-Rice

National Food Security Mission - NFSM Rice is being implemented in 5 Districts viz., Srikakulam, Vizianagaram, Visakhapatnam, YSR and Anantapuramu. An amount of Rs.1791.50 lakh was spent under NFSM-Rice against a release of Rs.2415.36 lakh upto 31-01-2015.

## National Food Security Mission -Pulses

National Food Security Mission - NFSM Pulses is being implemented in all the 13 Districts of the state. An amount of Rs.4358.58 lakh was spent under NFSM-Pulses against a release of Rs.3646.76 lakh upto 31-01-2015.

## NFSM Coarse cereals

National Food Security Mission - NFSM Coarse cereals is being implemented in the 5 Districts viz., Visakhapatnam, Guntur, Prakasam, Kurnool and Chittoor in the state. An amount of Rs.205.32 lakh was spent under NFSM-Coarse cereals against a release of Rs.481.25 lakh upto 31-01-2015.

## NFSM Commercial Crops

NFSM Commercial Crops is being implemented in 12 Districts viz., Srikakulam, Vizianagaram, Visakhapatnam, East Godavari, West Godavari, Krishna, Guntur, Prakasam, SPS Nellore, Kurnool, YSR and Chittoor in the state. An amount of Rs.46.68 lakh was spent under NFSM- Commercial Crops against a release of Rs.24.00 lakh upto 31-01-2015.

## State Initiatives

### System of Rice Intensification

Promotion of System of Rice Intensification (SRI) is an important intervention under NFSM for increasing production and productivity of rice in the State. SRI has various other advantages. Intensive efforts are being made in the State for promotion of this system under tanks, wells, bore wells and tail end areas. An area of 2.30 lakh ha was covered under SRI cultivation during Kharif 2014 and 0.73 lakh ha was covered under SRI cultivation during Rabi 2014-15.

## 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 of Cooperation 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 14<sup>th</sup> November to promote better understanding of the principles and philosophy of cooperation duly highlighting achievements of various sectors of the Co-operative movement.

### Rural credit co-operatives

The Rural credit co-operative structure at present is a three-tier structure 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 379 branches located in district head quarters and small towns and semi urban areas and 2037 Primary Agricultural Credit Co-operatives at the Village Level. Kisan Credit Cards have been issued to 17.25 lakh farmer members of the PACS. Relief to farmers affected by drought and other natural disasters has been provided. Based on the recommendations of the taskforce headed by Prof. A.Vaidyanathan, constituted for suggesting the re-organization of co-operative societies, the long pending re-organization of PACS has been completed for making them viable. The total financial assistance received so far under Revival Package for Rural Coop. Credit Structure is Rs.935.00 crore including the State Government share of Rs.146.31 crore.

### Loaning Programme 2014-15

A.P. State Co-operative Bank provided Rs.2180.39

crore (Kharif-Rs.615.38 crore and Rabi-Rs.1565.01 crore) as production credit to farmers through the Primaries and the District Co-operative Central Banks during the year 2014-15. Out of the total Rs. 2180.39 crore loans, Rs.1943.50 crore loans under Seasonal Agricultural Operations (SAO) were disbursed.

### Long Term Loans

APCOB has refinanced an amount of Rs.136.42 crore to the DCC Banks under Long Term Agricultural Credit to the extent as against the loaning programme of Rs. 398.00 crore allotted to all the 13 DCCBs during the year 2014-15.

### Integrated Co-operative Development Projects

The National Co-operative Development Corporation (NCDC), New Delhi has been providing financial assistance towards creation of infrastructure facilities like godown, iron safes, banking counters and storage facilities etc., to societies under ICDP Scheme for development of agricultural and allied sectors. This Project has already been completed in twelve districts viz., East Godavari, Krishna, Kurnool, Chittoor, Guntur, Visakhapatnam, SPS Nellore, Srikakulam, Vizianagaram, YSR, West Godavari and Ananthapuramu. The project work in Prakasam district is under progress.

### 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 5.8.



**Table 5.8 : Performance of District Cooperative Marketing Societies**

(Rs.in Lakh)

	2013-14	2014-15
Share Capital Contribution	574.81	576.00
Business Turn over	44518.82	29709.04
Profit	572.50	216.80
Accumulated losses	638.45	533.41
Assets	12435.29	10808.37
Liabilities	13169.32	11588.59

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 agricultural produce like cereals, pulses under minimum support price/ market intervention scheme and also procures 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 Six Co-operative Training Centres (CTCs) working under APSCU offering Diploma in Co-operative Management and Computer Applications. APSCU mainly provides education to members, through short term cooperative trainings to staff and member orientation programs to the newly elected Managing Committee members of Primary societies, DCCBs and other Cooperatives.

The APSC Union is also publishing a cooperative monthly magazine titled “Sahakara Samacharam” for awareness building and propagation of Cooperative Principles and Cooperative Movement in the state. The elections to the A.P. State Cooperative Union were conducted in December 2014 and an Elected

Managing Committee.

The Union is also publishing 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. Since 1995-96 the Corporation diversified its activities and started undertaking civil works. 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). These three RESCOs have over 3.02 lakh service connections covering 490 villages and 656 hamlets.

### **Consumer Cooperative Societies**

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 216 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.

### **Weaker Section Cooperative Societies**

Labour Contract Cooperative Societies and Cooperative Joint Farming societies etc. are among others the main weaker sections Cooperatives in the State.

### a) Labour Contract Cooperative Societies

Labour Contract Cooperative societies function in a 3-tier structure i.e., Primary Level - 1923 LCCS with 59072 members in the state, District Level - all district Federations of Labour Contact Cooperative Societies and State Level –AP State Cooperative Labour Contact Cooperative Societies Federation Ltd.

### 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., (under liquidation).

### Co-operative Tribunals

Two Cooperative Tribunals have been constituted in the State. Vijayawada Cooperative Tribunal was constituted in 1993 and Visakhapatnam Cooperative Tribunal in 2003 to render speedy and effective justice to affected parties. These Tribunals are vested with Appellate Jurisdiction over the orders passed under APCS Act, 1964 and with original jurisdiction over the disputes filed under AP MACS Act, 1995. 457 cases are pending in all the two Co-operative Tribunals for disposals as on 31-12-2014.

### Audit

There is a separate Audit Wing for Audit in Cooperative Department headed by the Chief Auditor who works under the general superintendence and control of Registrar of Cooperative Societies. The Chief Auditor shall audit or cause to be audited by a person authorized by him the accounts of a society at least once in a year. For the year 2013-14, 16861 cooperative societies were programmed for audit, of which 5795 are under aided category and remaining 11066 are under unaided category. Audit is under process.

## HORTICULTURE

Horticulture is a significant and upcoming sector in the country and the state as well. Horticulture has proved to be the best diversification option for agricultural land use, because of assured and the remunerative returns to the farmers. This sub sector of the Agriculture sector, with its consistently growing contribution to the GSDP has started gaining ground in the recent past.

Horticulture over the years has emerged as an indispensable part of Agriculture providing opportunities for sustaining large number of agro-industries which have created employment opportunities to semi-skilled and unskilled labour force. Horticulture as a sub-sector is a revelation benefiting from an impressive base has shown remarkable signs of progress in Andhra Pradesh.

Technological innovations have helped Horticulture sector to empower people not only by improving economic conditions of those subsisting on it but also catering to their nutritional security that eventually is transforming agrarian economy. The fact that horticulture has moved from rural areas to a commercial activity which has encouraged private investment is one of the most significant development in the last decade. Transition from traditional outlook to a trade oriented outlook has brought a perceptible change in the concept of horticulture development in the state.

The Government of Andhra Pradesh has emphasized horticulture development in view of increased public investment in the sector. The focus in recent years has been on increasing production and productivity of horticulture crops, development of infrastructure for post harvest management and providing access to domestic and export markets.

Andhra Pradesh ranks 1<sup>st</sup> in the production of Oil Palm, Tomato, Chillies Turmeric and Mango; 2<sup>nd</sup> in production of loose flowers in India (NHB data base 2013).

### Growth of Horticulture

Horticulture crops were grown in an area of 17.57lakh hectares and production was 188.04 lakh tones during the year 2014-15 as per 1<sup>st</sup> advance

estimates. Details about the area and production of horticulture crops during 2013-14 and 2014-15 (A) are given in Annexure 5.20. The details about the principal horticultural crops area and production in 2014-15 (1<sup>st</sup> Advance Estimates) are given in Table 5.9 below.

**Table 5.9: Horticultural Crops – Area and Production during 2014-15**

Crop Category	Area (Lakh ha.)	Production (Lakh MTs)
Fruits	6.52	103.31
Vegetables	3.30	57.84
Flowers	0.20	1.40
Plantation Crops	4.65	17.04
Spices	2.88	8.45
Medicinal & Aromatic Plants	0.02	0.04
Total	17.57	188.04

Source: Horticulture Department.

## 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.

Assistance is provided to farmers on plant material, seed and inputs, drip and sprinkler systems, pre & post Harvest infrastructure etc., through schemes implemented by the Department under National Mission on Sustainable Agriculture (A.P. Micro Irrigation Project), Mission for Integrated Development of Horticulture (MIDH), Rashtriya Krishi Vikas Yojana (RKVY), National Mission on Oil Seeds and Oil Palm Programme (NMOOP) and State Plan Programme etc.,

### On Farm Water Management (OFWM) APMIP with convergence of National Mission on sustainable Agriculture

AP Micro Irrigation Project (APMIP) is a first comprehensive and unique project being implemented in a big way in Andhra Pradesh for the past 11 years. APMIP was launched in November' 2003 with an objective of enhancing crop productivity by improving water use efficiency through Micro-irrigation systems for the benefit of

the farmers. It is an ongoing project and 5.63 lakh ha. has been covered under Micro irrigation in all the 13 Districts in the State since inception i.e., from 2003 to 2014, benefiting 4.96 lakh farmers, with a total financial out lay of Rs.2546.00 Crores.

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, facilitates 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 there is no option for farmers except going for Drip Irrigation. To achieve the concept of “More crop per Drop “Micro irrigation is to be taken up particularly in the Districts of Rayalaseema, which are most backward areas, apart from other backward areas in Andhra Pradesh.

APMIP is being implemented with the assistance from Government of India, State Government and farmer contribution. Because of the consolidated efforts of the State Government over a period of time the farmers started realizing the fruits of the technology and reached the stage that farmers are not venturing for Agriculture without Micro Irrigation. Still there is huge potential area of 12.26 lakh ha. is available in the State to be covered under Micro Irrigation.

Government of India have formulated a new scheme – “National Mission for Sustainable Agriculture” (NMSA) with effect from 2014-15, which has been designed by converging, consolidating and subsuming all the ongoing as well as newly proposed activities / programmes related to sustainable agriculture with a special emphasis on Soil and Water Conservation and Water Use Efficiency, Soil Health Management and Rain Fed Area Development.

On Farm Water Management (OFWM) is one of the four components of National Mission for Sustainable Agriculture, which focuses primarily on enhancing water use efficiency by promoting efficient OFWM Technologies and equipment. The existing National Mission on Micro Irrigation

(NMMI) Scheme implemented up to 2013-14 was subsumed in to NMSA from 2014-15 onwards.

### Out Come of Micro Irrigation:

1. Increase of production and productivity of crops, savings in water and savings in energy are shown in Table.5.10, 5.11 and 5.12 respectively.

**Table.5.10 Production and Productivity of crops**

Crop	Normal Yield (MT/ha)	Yield with drip Irrigation (MT/ha)	Increase in Yield (%)
Sugarcane	78	98□125	25□60
Banana	35	46□53	32□50
Citrus	13	17□19	35□45
Papaya	80	107□116	35□45
Sapota	10	10□15	20□30
Pomegranate	10	13□14	15□30
Mango	9	13□15	50□70
Coconut	13	14□16	15□25
Grapes	21	25□27	20□30
Vegetables	12	14□17	20□40
Fieldcrops (Sprinkler)			20□30

Source: Horticulture Department

**Table.5.11 Savings in Water**

Crop	Water Saved in (mm) per ha per season			
	Flood Irrigation	Drip Irrigation	Net saving	% of saving
Sweet Orange	1136	530	606	53
Sugarcane	1634	748	886	54
Pomegranate	1363	663	700	51
Brinjal	891	408	483	54
Papaya	2196	1060	1136	52
Mango	1114	520	594	53
Tomato	994	504	490	49
Chilli	994	480	514	52
Banana	2196	1087	1109	51

Source: Horticulture Department

**Table.5.12 Savings in Energy**

Crop	Energy Saved (kwh) per ha			
	Flood Irrigation	Drip Irrigation	Net saving	% of saving
Sweet Orange	1307	610	697	53
Sugarcane	1881	861	1020	54
Pomegranate	1569	763	806	51
Brinjal	1026	470	557	54
Papaya	2528	1220	1307	52
Mango	1283	599	684	53
Tomato	1145	580	564	49
Chilli	1145	553	592	52
Banana	3033	1501	1532	51

Source: Horticulture Department

### Impact study on Micro Irrigation:

The AP Productivity Council (APPC) conducted 3<sup>rd</sup> party status survey of all the systems installed in the fields of farmers under APMIP for an area of 5.08 lakh ha., covering 3.66 lakh farmers and the findings are as mentioned below:

Subject	Feed Back	% of farmers (in Lakhs)
Saving of water	25-50%	96% (3.52)
Increase in Yield		
Drip	25-50%	94% (3.44)
b) Sprinklers	50%	94% (3.44)
Increase in income	Rs.10000-25000 per acre per annum	90% (3.29)
Savings in Labour cost	Rs.2000 per acre per annum	80% (2.93)
Reduced incidence of pests	20%	77% (2.81)



### Initiatives

To facilitate the farmers for better utilization of the scheme, the farmer has been given an opportunity to register the application from any Mee-Seva centers in the District.

#### The salient features are:

- Farmer can ascertain the status of applications through Mee-Seva Centers at any point of time.
- Sanctions will be issued based on the seniority of registration of applications.

- Farmer can choose MI Company among the empanelled MI Companies to the District.
- SMS alerts will be sent to the farmers at the time of registration, at the time of sanction and final release of subsidy.

So far, 1,03,566 no. of farmers have registered their application in Mee-Seva Centers covering an area of 1,27,498 ha as against the target of 42,895 ha. Sanction orders are being issued and installation of MI Systems is under progress.

### Banana with Inline Drip



### Citrus Online Drip



### Semi Permanent Sprinklers



### Green House



## **Mission for Integrated Development of Horticulture (MIDH)- State Horticulture Mission**

A Centrally Sponsored Scheme – the State Horticulture Mission, is being implemented in the State by the State Horticulture Mission. The Mission was launched on 3<sup>rd</sup> November 2005 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.

The Department of Agriculture & Cooperation (Horticulture Division), Ministry of Agriculture, Government of India has informed that a new Centrally Sponsored Scheme on Mission for Integrated Development of Horticulture (MIDH) is to be implemented during XII plan period with effect from April, 2014 by subsuming six schemes on Horticulture Development including NHM as per the revised cost norms and pattern of assistance.

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 09 districts (except Vizianagaram, Visakhapatnam, East Godavari and Krishna) and two tribal areas of Rampachodavaram of East Godavari and Paderu of Visakhapatnam districts.

An amount of Rs. 71.38 crores was utilized during 2013-14 for implementation of various activities like establishment of new gardens, rejuvenation of senile gardens, IPM/INM, HRD, Organic farming, farm mechanization and Post Harvest Management etc.,

The Government is implementing MIDH with an

outlay of Rs. 87.78 Crore with the GoI and GoAP share in the ratio of 85:15 basis during the year 2014-15.

The major components covered under MIDH are a) Area Expansion (Perennial and Non-Perennial crops), b) Rejuvenation of senile orchards, c) INM / IPM and Organic farming d) Protected Cultivation, e) Post Harvest Management, f) Creation of Water Resources (Farm Ponds), g) Farm Mechanisation and h) Capacity Building.

### **Organic Farming/ IPM/INM**

IPM and INM have played an important role in quality enhancement by control of pest and diseases in horticultural crops. Adoption of IPM/INM reduced the incidence of Mangu in Sweet Orange and Mango and BBD in Pomogranate and improved the quality of produce. Use of bio-inputs like T.Viridae, Pseudomonas, Neem Oil etc. not only reduced pesticide residue and improved the quality of produce but also reduced the cost of cultivation and enhanced market price of the produce. An area of 9346 ha of various fruits was covered under IPM/INM practices for the year 2014-15 (upto Dec 2014).

### **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.

Twelve Horticulture farms were established producing around 6.00 lakhs no. of quality plant production. 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 2014-15 (up to Dec, 2014), assistance was provided for 10 cold storage units, 1 ripening chamber and 99 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 SHM 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.

### **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.

An amount of Rs.34.47 Crores was allocated for implementation of RKVY programme during 2014-15. The salient features of the scheme are area expansion of vegetables through hybrid vegetable seeds, assistance for pandals & trellis, creation of post harvest infrastructures like onion storage structure and small shade net nurseries to cater to the needs of seedlings for vegetable cultivation.

The Government of India launched the “Vegetable Initiatives for Urban Clusters” scheme during the year 2012-13. The programme has been implemented in Chittoor, Visakhapatnam, Guntur, Kurnool and Krishna districts in the year 2014-15. An amount of Rs.8.75 Crores was allocated under Vegetable Initiatives for Urban Clusters.

### **National Mission on Oil Seeds and Oil Palm Programme (NMOOP)**

Andhra Pradesh ranks 1<sup>st</sup> in cultivation of Oilpalm with an extent of 1.35 lakh Ha., out of the total area of 2.05 lakh Ha. in India under oilpalm. Out of which, bearing area is about 95,659 Ha., with production of 9.3 lakh Mts Fresh Fruit Bunches (FFBs). 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 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.

Government of India has launched National Mission on Oil Seeds & Oil Palm (NMOOP) Mini Mission-II (Oilpalm) during 2014-15 with an outlay of Rs.4480.05 lakhs with physical target of 14000 Ha under Oilpalm Area Expansion duly discontinuing RKVY (OP) and Integrated Scheme of Oil seed, Pulses, Oil Palm and Maize (ISOPOM) was merged with NMOOP with an objective of need to intensify efforts for area expansion under Oilpalm to enhance palm Oil production in the Country with quality planting materials, irrigation and proper management, there is potential of achieving 20-30 MT Fresh Fruit Bunches (FFBs) per ha after attaining age of 5 years.

### **Floriculture**

Floriculture sector has been identified as a key focus segment of horticulture. Flower cultivation is profitable for farmers because of the growing demand for flowers in domestic and export market. An area of 180.00 ha., was covered for the year 2013-14 so far under development of floriculture under Area Expansion.

The total financial outlay of Rs. 278.15 lakhs to cover area expansion of flowers, potato and Post Harvest Management programmes for reducing post harvest losses of fruits & vegetables by supplying plastic crates & poly sheets on 50% subsidy. Under Area Expansion of flowers, an area of 287 ha has been covered during the year 2014-15 under development of floriculture so far.



## ANIMAL HUSBANDRY

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. This is the sector where the poor contribute to growth directly instead of getting benefit from growth generated elsewhere. 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. Major part of the livestock population is concentrated in the marginal and small size of holdings. Livestock plays an important and vital role in providing nutritive food to families both in rural and urban areas.

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 Animal Husbandry. 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.

Effective veterinary and animal husbandry services are critical in achieving the significant production levels. Economic support programs like distribution of milch animals, 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 100% livestock insurance.

Livestock production is largely in the hands of women. In fact Animal Husbandry is becoming feminized. Most of the animal farming activities such as fodder collection, feeding, watering, and health care, 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.

The State is blessed with highly valuable livestock resources cattle and accounting for 5.85% of the country's population. As per the Livestock Census 2007, the State stands 2<sup>nd</sup> in sheep population, 3<sup>rd</sup> in Poultry, 5<sup>th</sup> in buffalo population, 6<sup>th</sup> in total Livestock population, 9<sup>th</sup> in Bovine population and 11<sup>th</sup> in Goat population in the country. Andhra Pradesh takes pride in the country in having famous world renowned Livestock breeds like Ongole and punganur in cattle, Godavari buffaloes, SPS Nellore in sheep and Aseel in poultry.

Andhra Pradesh occupies prominent position in the livestock sector in the country. About 46.45 lakh families in Andhra Pradesh are engaged in the livestock sector for their livelihood. The value of livestock produce is estimated to be Rs.36,798 crores at current prices and the livestock sector contributes 7.08% to GSDP, as per the Advance estimates for 2014-15.

As per the estimates (2013-2014) of Government of India, Andhra Pradesh state with an annual output of 1272.69 crore eggs stands 2<sup>nd</sup> in egg production in the country. With annual meat production of 4.89 lakh



MTs. Andhra Pradesh stands 4th in the country in meat production. With an annual production of 90.83 lakh MTs of milk, Andhra Pradesh occupies 7<sup>th</sup> position in the country in milk production

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.

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. District wise Livestock population as per 2012 (provisional) is given in Annexure 5.21.

#### Livestock population in A.P

(No. in Lakh)

Category	As per 2007 census	As per 2012 census (provisional)
Cattle	54.73	47.43
Buffaloes	82.30	64.65
Sheep	121.20	135.67
Goat	48.24	45.06
Pigs	2.06	1.58
Poultry	745.37	817.85

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 also 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 5.13 and chart 5.4.

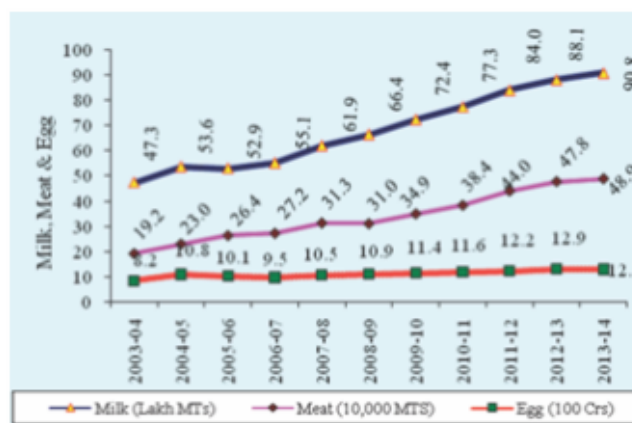
**Table 5.13: Production of Milk, Meat & Eggs**

Item	Unit	2012-13	2013 - 14	2014-15 (upto Dec 2014)
Milk	000MTs	8810.00	9082.73	7215.00
Growth	%	4.86	3.10	
Meat	000MTs	477.65	488.75	387.87
Growth	%	8.54	2.32	
Eggs	Cr.Nos	1287.40	1272.69	953.45
Growth	%	5.15	- 1.14	

Source: Animal Husbandry Department.

**Chart 5.4: Milk, Meat and Egg Production**

Production estimates of milk, meat and eggs from



2003-04 to 2014-15 (upto December 2014) and district wise production are given in Annexure 5.22 and Annexure 5.23 respectively.

#### Important Livestock sector programmes

##### Free Supply of Veterinary Drugs, Medicines and Equipment

Animal Husbandry Department is delivering the services to the farmers through 3105 Veterinary Institutions of different categories. Allopathic and Ayurvedic drugs, general items and area specific required drugs are being supplied to all the veterinary institutions to cater the basic and qualitative veterinary services to the farmers in the state. Under

this programme an amount of Rs.50.00 Crore is allocated during the year 2013-14 and Rs.35.89 Crore is allocated during the year 2014-15. Apart from the Drugs and Medicines, day to day requirements like Syringes, Needles, Cotton, Sterilizers etc., and other Hospital necessities are being supplied to all the Veterinary Institutions in the state. For this purpose, an amount of Rs.18.00 Crore is allocated during the year 2013-14 and Rs.11.74 Crore is allocated during the year 2014-15.

### **Normal State Plan 2014-15**

#### **Calf feed Programme (SUNANDINI)**

##### **General Component**

The Objective of the scheme is to provide feed to the calves already enrolled in the first year of the programme (2013-14), as this is two years programme designed for achieving better results. 75% of the unit cost will be provided as subsidy and remaining 25% is the beneficiary contribution.

##### **RIDF (XVIII and XIX)**

The department has taken massive programme of construction of new buildings to the Veterinary Institutions along with required equipment. The type of buildings include Veterinary Polyclinic, Veterinary Hospital, Veterinary Dispensary, Rural Livestock Unit, Gopalamithra Service Centers, DFSD, Constitution Level Disease Diagnostic & Training Centers, R&D on Blue Tongue and Foot Rot, Mobile Slaughter Unit etc. An amount of Rs.5000.00 lakh is proposed for implementation of the scheme.

##### **TSP Component**

##### **Animal Health Camps**

The Objective is to provide health and nutritional support to the Animals (Bovines and small ruminants at Grampanchayat level in remote and tribal areas. The departmental staff will conduct animal health camps in tribal areas every month. Under this, deworming of calves / Milch Animals / deticking camps, fertility camps, mineral supplementation etc. Proper publicity & awareness will be created among the farmers through fixed schedule programme. Rs.2,500/- will be provided to each animal health camp including logistics for organization of animal health camps.

## **Implementation of Livestock Development programmes**

### **Milch Animals**

Self-help groups at village level are actively involved in dairy activity as one of the income generation activity. In some districts, the SHG, are also involved in milk procurement and marketing at village level. If these Self-help groups/individual farmers who wish to take up dairying activity are proposed to be supplied high yielding milch animals/Heifers on 90% subsidy to enable them to generate regular and steady income besides nutritional supplementation to the families concerned. The Unit cost of Milch Animals is Rs.63000/- out of which the Subsidy on each Milch Animal is Rs.56700/-. It is proposed to provide 90% subsidy on unit cost of induction of milch animal. The Non subsidy component can be met from beneficiary contribution, Bank loan/ITDA/SC Corporation and dairy units.

### **Mini Sheep & Goat units**

In Tribal areas sheep rearing is taken up as one of the primary income generation activities. Sheep rearing is common in Rayalaseema and South Coastal districts. It is proposed to distribute sheep units (5+1) of recognized native breeds at unit cost of Rs.30,000/- on 90% subsidy. Under state plan schemes for ST's for the year 2014-15, it is proposed to supply (1225) units (Milch Animals / Mini Sheep & Goat units) with the allocated amount of Rs. 330.75 lakh.

### **Centrally Assisted State Plan Schemes 2014-15 National Livestock Health & Disease Control Programme**

An amount of Rs.3239.72 lakh is allocated for implementation of the scheme during the financial year 2014-15 and the activities covered under this program are Assistance to States for Control of Animal Diseases(ASCAD), National Project on Rinderpest Eradication (NPRE), National Control Programme on Peste Des Petitis Ruminants (NCPPR), Professional efficiency development through A.P. State Veterinary Council, Hyderabad, National Control Programme on Brucellosis (NCPB), Foot and Mouth Disease Control Programme (FMDCP) and National Animal Disease Monitoring System (NADRS).

### **National Livestock Management Programme**

An amount of Rs.8385.28 lakh is proposed for National Livestock Management Programme (NLMP) and the activities covered under this program are Strengthening of AI Net work, Assistance to private AI workers, Arranging fertility camps, Conservation of Threatened Livestock Breeds(APLDA), Livestock Insurance(APLDA), Assistance to SIA (APLDA), NPCBB, Poultry Development (Rural Backyard Poultry), Assistance to State Poultry Farms, Utilization of Fallen Animals, Livestock Extension Delivery services, Feed & Fodder Development Schemes, Establishment / Modernization of Rural Slaughter Houses, Mobile Slaughter plans and National Livestock Mission.

### **National Plan for Dairy Development**

An amount of Rs.1475.00 lakh is allocated for implementation of the scheme during the financial year 2014-15 and the components covered are establishment of breeders associations/Societies, Human Resource Development and National Programme for Bovine Breeding and Dairy (NPBBDD) Dairy Development Project.

### **Rashtriya Krishi Vikas Yojana.**

One of the major programs implemented in the State is Rashtriya Krishi Vikas Yojana (RKVY). This program is being implemented in the State since 2008-09 with 100% Central Assistance to achieve 8 to 10% Growth Rate in Livestock Sector. Under RKVY program an amount of Rs.51.843 Crore has been released by GoI benefiting 63107 beneficiaries. A part of this, Ksheera Saagar (Health, feeding, insurance support scheme to pregnant and lactating animals) worth of Rs.30.983 crore, two times deworming to sheep and goat worth of Rs.9.00 crore, continued feed support to 15130 Calves worth Rs.11.35 crore, and Rs.3.00 crore for purchasing of fodder seed under kharif contingency plan 50% allocation are utilized to implement the program during 2014-15.

### **National Mission on Protein Supplementation**

Under National Mission on Protein Supplementation (NMPS) an amount of Rs.7.37 Crore has been released by GOI benefiting 7496 farmers. As part of this, Ksheera saagar Scheme

worth of Rs. 3.675 Crore and for purchasing of Mini Sheep and Goat Units to 2889 beneficiaries worth of Rs.3.695 Crore are utilized in 2014-05.

### **National Livestock Mission**

Under this scheme budgetary releases of Rs13.7 Crore from GOI are awaited for implementing welfare programs like Rural Backyard Poultry (44 mother units & 19500 individual units) worth of Rs.7.973 Crore, propagation and distribution of fodder feed worth of Rs.3.90 Crore and for Livestock extension education, skill development and other activities worth of Rs.1.83 Crore covering 4580 officials and farmers.

### **Mass Sheep and Goat deworming programme**

Andhra Pradesh is having 135 Lakhs of Sheep population and 45 Lakhs of Goat population and over 4 Lakh families are benefitting by rearing of Sheep & Goat. Animal Husbandry Department is taking up 1<sup>st</sup> round deworming Programme in the months of June-July and 2<sup>nd</sup> round in the months of December-January. Due to deworming of Sheep & Goat, the animals become more immune to diseases, which causes reduced morbidity & mortality, increased birth weights, body weights and production capacity which in turn benefits to the Sheep rearing community. 345.10 lakhs Sheep and Goat are dewormed under this programme during 2014-15 with financial assistance of Rs.448.41 Lakh under RKVY, benefitting 3.82 Lakh Shepherd families.

### **Primary Sector Mission**

The State Government has launched mission based approach for leveraging the sector to stress the two proper state into higher growths bracket. As part of this, primary sector mission was launched by Shri Abdul Kalam, Ex-president, Government of India on 06.10.2014 at Kalyandug, Ananthapuramu district. Development plans are being prepared in consultation with ICRISAT in convergence made to achieve 10-12 years growth rate in the next 4 years period, or is also envisioned to contribute to a tune of Rs.60,000 crore to GSDP by 2018-19.

### **Janmabhoomi Maa Vooru Program**

Animal Husbandry Department has organised Veterinary Camps as a part of pension mahotsavulu

under Janma Bhoomi – Maavooru Programme in campaign mode in all Gram Panchayats of the State from 02.10.2014 to 11.10.2014. SPS Nellore District has completed the JBMV Program by 21.10.2014. As part of the JBMV Program, Aadhar Number and Mobile Number of the Beneficiaries along with signature/LTI is recorded in the Register maintained for each Gram Panchayat. Information on key parameters like Milk, Meat, Egg Production, fodder resources and availability of Govt grazing lands Gram Panchayat wise for Micro Planning Purpose is collected and the data is being analysed for various parameters. An amount of Rs.300.00 Lakh is released by the Government for conduct of various activities under JBMV programme. The progress under each activity is shown in Table 5.14

**Table 5.14 Activity wise progress under JBMV programme**

(No in lakhs)

Activity	Rural	Urban	Total
Veterinary camps organised	0.13	0.02	0.15
Animals treated	16.97	0.59	17.56
Artificial Inseminations done	0.61	0.04	0.65
PPR vaccinations done for Sheep and Goat	23.08	0.57	23.65
Calves dewormed	5.20	0.28	5.48
Availability of Grazing lands in GPs	0.07	-	0.07
Grazing lands not available in GPs	0.06	-	0.06

Source: Animal Husbandry Department

### Polam Pilustondi

The objective of the scheme is to identify the gaps in Animal Husbandry practices and disseminate the technical knowledge to the farmers in the interactive sessions for enhancement of productivity per unit of livestock and to create awareness to the farmers on Animal Husbandry activities. Awareness is being brought to the farmers on key issues like Preventive Vaccinations, Fodder development and Importance of artificial insemination for breed improvement. At mandal level Veterinary Assistant Surgeon / Veterinary Livestock Officer / Junior Veterinary Officer is participating in programme on every

Tuesday and Wednesday in each month of kharif and rabi seasons.

### HUDHUD Cyclone

Very Severe Cyclonic Storm HUDHUD formed over Bay of Bengal, moved West North Westwards and crossed Andhra Pradesh coast over Visakhapatnam on 12.10.2014 causing heavy downpour and heavy gales in Coastal Andhra Pradesh, resulting in wide spread damages. The Government released an amount of Rs.4100.76 lakh from State Disaster Response Fund (SDRF) funds for immediate relief to the livestock losses and damages caused due to Hudhud Cyclone occurred in the month of October 2014 in 4 districts of the state.

### Payment of compensation to the owners of livestock lost

Type of Animal	Assistance
Milch Animal (Ceiling - enhanced to 5 Animals)	Rs. 20,000/- per animal
Sheep & Goat (Ceiling limited to 4 animals)	Rs. 2,500/- per animal
Calves (Ceiling limited to 2 animals )	Rs. 10,000/- per animal
Bullock (Ceiling limited to 1 animal)	Rs. 15,000/- per animal
Back yard Poultry (Ceiling limited to 10 birds)	Rs. 50/- per bird

Compensation per Bird:

- Layers : Rs.150/-
- Broilers : Rs.75/-

Subject to Maximum ceiling (all inclusive)

- Layers : Rs.15.00 lakhs
- Broilers : Rs.7.50 lakhs

Damages to Poultry sheds in integration system only Rs.10,000/- per shed (subject to Maximum of three sheds Rs.30,000/-). The Integrator (Broiler) is treated as one individual farmer and he will be eligible for maximum ceiling amount of Rs.7.50 lakhs.



## Drought Situation during 2014-15

Due to lack of rainfall the fodder situation in the State during Rabi 2014 (Jan to June 2015) indicates that there is fodder requirement of 127.68 LMTs for 141.86 Lakh Livestock units, out of which the availability is 124 LMTs and there is a net deficit of 3.99 LMTs. The Fodder deficit is noticed in Ananthapuramu (-) 2.63 LMTs; Chittoor (-) 0.53 LMTs; YSR (-) 0.33 LMTs; SPS Nellore (-) 0.68 LMTs and Guntur (-) 0.05 LMTs even if normal sowings takes place. No distress sale of cattle has been reported from the Districts.

To combat the drought situation, the Department has prepared the Fodder Contingent Action Plan with special focus on scanty (-99 to -60%) & deficient (-59 to -20%) rainfall mandals. Fodder development is undertaken in 1.18 lakh hectares through supply of 2371 Mts of fodder seed on subsidy to individual farmers. In Ananthapuramu district, 11 M.I tanks covering 608 hectares is under tank bed cultivation. The Progressive farmers with assured irrigation facilities are identified and willingness of farmers is being obtained to take up fodder production under buy back guarantee. Suitable locations have been identified for organizing cattle camps if need arises. Action has also been initiated to stock baled fodder and identified locations in Chittoor and Ananthapuramu districts. Rs. 210 lakhs is available to develop fodder bank at APCARL which is being used to stock baled fodder in Ananthapuramu and Chittoor districts. Rs. 116 lakhs is available under RKVY to procure baling units in drought contingency.

### Animal Hostel

The Government have to promote Animal Hostel concept to augment milk production in the State exploiting the existing milch animals through scientific management and to start at least one Animal Hostel per district on pilot basis. Detailed guidelines on modalities for implementation of Animal Hostels are communicated to the Districts for starting of Animal Hostel in the districts.

### Animal Health Activities

Animal Health activities play an important role in the growth of livestock Industry, since the livestock

production programmes will not be successful without providing necessary safeguards against hazards of animal diseases. The department has taken up strengthening of existing institutions to improve quality of Animal Health Services by providing facilities for surgery, disease investigation and treatment. Super Specialty Veterinary Hospitals at Pulivendula (YSR District) and Vijayawada (Krishna District) and Veterinary Polyclinics at district headquarters were established to address this issue. Every mandal has been provided with a Veterinary Graduate to effectively organize Animal Health Services, support production program and for prevention and control of livestock diseases. Incidence of disease outbreaks in animals during 2014-15 (upto Dec-14) are shown in table 5. 15

**Table 5. 15 Disease outbreaks in animals during 2014-15(upto Dec-14)**

Name of the Disease	No. Of OBRs	No. Of Vill ages	No. Of Atta cks	No. Of Death s	No. Of VOB	Susce ptible popul ation
Anthrax	8	8	128	128	4785 3	65967
Haemorrhagic Septicaemia	2	2	5	3	611	710
Black Quarter	1	1	2	2	583	1262
Enterotoxaemia	1	1	7	2	700	700
Sheep pox	2	2	37	15	5200	5200
Goat Pox	1	1	12	2	1000	1000
<b>Grand Total</b>	<b>15</b>	<b>15</b>	<b>191</b>	<b>152</b>	<b>5594 7</b>	<b>74839</b>

Source: Director, Animal Husbandry

44.62 Lakh HS Vaccinations; 7.42 Lakh BQ Vaccinations; 59.78 Lakh ET Vaccinations; 41.58 Lakh Sheep Pox Vaccinations, 41.09 Lakh PPR Vaccinations and 97.06 lakh FMD Vaccinations are done to prevent the incidence of diseases in the State during the year 2014-15 upto December. As part of implementation of National Animal Disease Reporting System (NADRS), 658 Computers with Internet facility is made available at all Mandal Head Quarters for reporting of diseases through online. Certain steps are taken up to preventive vaccinations in campaign mode, which is yielding very good

results in prevention of diseases among various kinds of livestock.

Five types of regular institutions viz., 2 Super Speciality Veterinary Hospitals, 12 Veterinary Polyclinics, 180 Veterinary Hospitals, 1410 Veterinary Dispensaries, and 1501 Rural Livestock Units are functioning to attend to animal health needs throughout the State. 617.24 Lakh cases were treated, 2.88 lakh castrations done and 427.24 Lakh vaccinations conducted by these institutions during the year 2014-15 (upto Dec-2014). With the norm that proper diagnosis of disease is half the treatment, 14 Animal Disease Diagnostic Laboratories (ADDLs) were made functional. Details of Animal Husbandry institutions are given in Annexure 5.24.

#### **Veterinary Biological Research Unit, Samalkot**

A Mini Vaccine Production unit at Samalkot, East Godavari district has been set up to meet the demands of coastal districts and produce various types of vaccines for improvement of animal health. It is also proposed to develop Andhra Pradesh Centre for Advanced Research on Livestock (APCARL), in Pulivendula, YSR District to meet the requirements of the State and also neighboring States.

#### **Breed Upgradation activities Andhra Pradesh Livestock Development Agency (APLDA)**

The State Government has launched a massive programme of restructuring breeding operations in cattle under the National Project for Cattle and Buffalo Breeding (NPCBB) scheme. Andhra Pradesh Livestock Development Agency (APLDA) was established and started functioning from April, 2000. The achievements of APLDA in the period 2013-14 and 2014-15 are as follows:

#### **Artificial Insemination Centres**

The Artificial Insemination (AI) Facility is made available to more than 80% Breedable Cattle and Buffaloes in the State through 6159 Artificial Insemination Centers. These include 3031 Animal Husbandry Departmental Institutions, 2642 Gopalamitra centres, 346 Dairy Union centres, 137 JK Trust Centres and 3 Veterinary College AI Centers.

#### **Performance of AI Centers:**

39.04 lakh Artificial Inseminations were conducted and 16.18 lakh Improved Progeny born during the year 2013-14. 24.80 lakh Artificial Inseminations were conducted and 10.06 lakh Improved Progeny born during the year 2014-15 up to 30<sup>th</sup> November 2014. Details of Artificial Inseminations are given in Annexure 5.25

#### **Performance of Frozen Semen Bull Stations**

Three Frozen Semen Bull Stations are located at Visakhapatnam, Nandyal and Banavasi are functioning under the control of APLDA. These three Frozen Semen Bull Stations are ISO certified and producing the Frozen Semen required for the entire State. 41.42 lakh Frozen Semen doses produced during the year 2013-14 and supplied to the District Livestock Development Associations in the State which in turn supplied to the Field Artificial Insemination Centers as per the demand. 33.27 lakh Frozen Semen doses are produced during the year 2014-15 upto November 2014. Total 207 Breeding Bulls are stationed at three Frozen Semen Bull Stations. The details of Breeding Bulls stationed and details of Frozen Semen produced and distributed are shown in Table 5.16 and 5.17.

**Table 5.16 Breeding bulls stationed**

Breed	Visakhapatnam	Nandyal	Banavasi
MB	39	39	30
HF	0	0	17
JB	9	0	10
CBHF	0	0	2
CBJY	13	23	11
Ongole	0	12	0
Punganur	0	2	0
Total	61	76	70

Source : Director, Animal Husbandry

**Table 5. 17 Frozen Semen produced and distributed**

	Visakha - patnam	Nandyal	Banavasi
Frozen Semn doses produced during 2013-14	8.91	12.77	19.74
Fozen Semen doses distributed during 2013-14	11.33	13.82	20.67
No of Frozen Semen doses produced during 2014-15 up to November 2014	6.51	11.44	15.32
No of Frozen Semen doses distributed during 2014-15 up to November 2014	8.27	9.86	12.97

Source: Director, Animal Husbandry

### Organization of Fertility Camps

4434 fertility camps were organized and 2.04 Lakh infertility cases were examined. Of which 1.54 lakh animals are treated successfully and 10672 habitations are covered under this programme during the year 2013-14. 1598 fertility camps were organized during 2014-15 upto November 2014.

### Livestock Insurance Scheme

The objective of the scheme is to provide risk coverage to farmers and cattle rearers against loss of their animals and to demonstrate benefits of scheme to livestock owners and popularize it with ultimate goal of attaining qualitative improvement in livestock and their products. The scheme envisages payments from the Central funds as Grants-In-Aid towards (i) subsidy upto 50% of premium (ii) 100% payment of honorarium to the Veterinary Practitioners and (iii) 100% Publicity. 85063 Milch Animals of 72069 Dairy Farmers have been insured

with Rs. 369.96 lakh subsidy amount during the year 2013-14. Govt. of India has permitted to implement the Scheme during this year with the available balance amount of Rs.558 lakh. The Oriental Insurance Company Ltd., has been identified with 3.30% Premium rate for one year policy and 7.43% for Three year Policy excluding Sales Tax.

### National Dairy Plan Phase-I

APLDA is the End Implementing Agency by the National Dairy Development Board (NDDB) for implementing the following Sub-Projects under National Dairy Plan Phase-I.

### Production of High Genetic Merit Crossbred Jersey Bulls through Progeny Testing:

Under this sub-project it is targeted for production & supply of 160 bulls of high genetic merit with a financial outlay of Rs.1792.29 lakh by the end of project.

Strengthening of Frozen Semen Bull Station at Banavasi, Kurnool District, it is targetted for production of 29.31 lakh doses of Frozen Semen Doses per annum with a financial outlay of Rs.652.17 lakh by the end of project.

An amount of Rs.245.80 lakh has been received under Sub-Project Production of High Genetic Merit CB Jersey Bull through PTP and utilized Rs.158 lakh. An amount of Rs.272 lakh has been received under Strengthening of Frozen Semen Bull Station, Banavasi and utilized Rs.190 lakh as per the norms of NDDB. The Progeny Testing Program and Field Performance Recording Program are under implementation in Chittoor District.

### Feed and Fodder Development

High yielding and nutritious fodder are essential for scientific and economic management of livestock particularly cross breeds cattle and graded Murrah Buffaloes. It is the endeavor of the department to popularize and propagate high yielding fodder crops with the farmers on available arable and non-arable land, as scientific feeding of live- stock is essential for increased productivity of milk and meat. To intensify the activity, improved varieties of fodder seed has been supplied to farmers on subsidy basis under the following schemes. District-wise fodder development is given in Annexure 5.26. Animal

Husbandry performance indicators during 2014-15 upto Dec, 2014 are given in Annexure 5.27

### **Normal State Plan**

The Scheme is intended for supply of fodder seed mini kits on 75% subsidy basis to the eligible farmers and beneficiaries under poverty alleviation programmes to raise sufficient fodder for feeding their high productive livestock. An amount of Rs.462.00 Lakh has been allotted during the year. About 1155.00 MTs of Improved Varieties of fodder seed will be procured and covering 57770 acres under fodder cultivation benefiting 72200 farmers. An Amount of Rs.193.00 Lakh has been released by the Government during the 1<sup>st</sup> & 2<sup>nd</sup> quarters of 2014-15 and 536.00 MTs of improved variety fodder seed has been procured and distributed so far.

### **Centrally Sponsored Fodder and Feed Development Scheme**

The Government of India has revalidated the unspent amount of Rs.1234.07 lakh released during the year 2013-14 for utilization in the year 2014-15 under Centrally Sponsored fodder and Feed Development Scheme. An amount of Rs.680.452 Lakh have been allocated for procurement of fodder seed and distribution of chaff cutters.

An amount of Rs.495.20 Lakhs have been allotted for procurement of fodder seed during 2014-15. Nearly 1125.00 MTs of improved varieties of fodder seed will be procured covering 56250 acres under fodder cultivation benefiting nearly 70200 farmers with an estimated fodder yield of 2.25 Lakh MTs.

### **RKVY Action Plan for Kharif 2014:**

Fodder Contingency action plan for kharif 2014 with an outlay of Rs.3.00 Crore under RKVY has been approved by the SLSC for supply of fodder seed for internal fodder production. 745.00 MT's of fodder seed has been supplied covering 37250 Acres under fodder cultivation with an estimated fodder yield of 1.49 LMT's.

### **Additional Fodder Development Programme**

The Government of India has approved for implementation of Additional Fodder Development Programme (AFDP) as a sub-scheme under RKVY in the event of declaration of drought by States.

Proposal for an amount of Rs.20.00 crore has been submitted to the Government of India for release of funds to supply 5000.00 MTs of fodder seed to cover 1,00,000 Hectares under fodder production and also to promote Community Fodder Development in suitable tank beds by supplying fodder seed on free of cost.

### **Sheep and Goat Development**

Sheep rearing is an important livelihood in scanty, low rainfall areas and agriculturally backward areas. Scientific breeding is being advocated in sheep farms for production of breeding rams with improved quality of mutton and wool. As per the latest Livestock Census, the State has 135.67 lakh Sheep and 45.06 lakh Goat population. In Andhra Pradesh, 2029 Primary Sheep Breeders Cooperative Societies (PSBCSs) are existing with 99497 Members enrolled in the PSBCSs. 13 District Sheep Breeders Co-op. Unions (DSBCUs) are existing and about 4.22 Lakh shepherd families are depending on the sheep & goat rearing activity.

### **AP Sheep & Goat Development Cooperative Federation Ltd.**

Implementing all Government of India Schemes related to Sheep & Goat Development, Financial assistance to members for purchase of units by getting funds from different funding agencies like NCDC, NABARD, GOI, CWDB etc. Developing fodder in lands belongs to members, community, Govt., and leased to augment fodder deficit. Providing reasonable price to animals by establishing sheep market yards at district level. Creating awareness among members about profitable sheep farming at village level, district level and at farmers' school for farmers at state level.

The A.P. Sheep & Goat Development Cooperative Federation Ltd is the 'Implementing Agency' for implementation of schemes relating to sheep and goat development activities in the State.

### **Sheep Insurance**

To provide support to the dependent families of the sheep rearer in the state who lost life due to unavoidable risks involved in the sheep rearing, while in the activity and who solely depend on sheep rearing for livelihood. During 2013-14, 48289 sheep are insured by utilizing an amount of Rs.1.04crore



which includes Govt. share of Rs.61.70 lakh and beneficiary contribution of Rs.42.70 lakh. The insurance companies have repaid an amount of Rs.84.93 lakh to the beneficiaries towards settlement of 2831 claims.

During 2014-15, 3906 sheep were insured by utilizing an amount of Rs.5.46 lakh as State Govt. share. Ananthapuramu, Kurnool, Srikakulam, West Godavari, SPS Nellore & Krishna Districts are covered under Oriental Insurance Co.Ltd for implementation of the scheme and remaining seven districts are covered under New India Assurance Co.Ltd.

### **Ex-gratia**

In case of accidental death due to unavoidable life risk activity in rearing of sheep, Government has introduced exgratia of Rs. 1.00 lakh to be paid to the family of the sheep rearers.

### **Central Wool Development Board Bhed Palak Bima Yojana**

This is an insurance scheme for woolly sheep (Deccani Sheep) rearers, which is implemented through LIC. Total annual premium is Rs.330 out of which beneficiary pays Rs.80 (CWDB contribution is Rs.150 and LIC pays the remaining Rs. 100). Benefits of the scheme include payment of Rs.0.60 lakh for normal deaths, Rs.1.50 lakh for accidental death, Rs.1.50 lakh for permanent disability due to accidents and Rs.0.75 lakh for partial disability due to accidents.

A total of 13421 Sheep breeders were insured under Bhed Palak Bima Yojana in 2013-14.

### **Implementation of National Co-operative Development Corporation Scheme**

The National Co-operative Development Corporation (NCDC) has approved for sanction of Financial Assistance under Integrated Small Ruminants Development (ISRDR) to be implemented by the Federation in Prakasam and Chittoor Districts through the District Unions and released an amount of Rs.714.80 lakh to the A.P Sheep & Goat Development Coop. Federation Ltd., Hyderabad towards 25% of the first year outlay. Under this scheme an amount of Rs.141.93 Lakh has been released to DSBCU, Praksam and an amount of Rs.108.84 Lakh has been released to Chittoor Dist.

138 shepherd families of Prakasam district and 102 shepherd families of Chittoor district were benefited with the 1<sup>st</sup> installment of NCDC amount of Rs.221.91 lakh.

### **Strengthening of (2) Sheep Breeding Farms**

GOI has sanctioned Rs.108.10 lakh towards strengthening of Two Govt. Sheep Farms under Integrated Development of Small Ruminants & Rabbits in Chintaladevi, SPS Nellore District and Penukonda in Ananthapuramu District and for organizing Ram/Buck shows and released an amount of Rs.54.05 lakh as first installment.

### **Schemes Implemented by APSGDCFL Capacity Building**

Training cum Workshops has been conducted for Presidents, Vice-Presidents, Directors, Shepherds and ED DSBCUs in Veterinary Council, Hyderabad on 11.11.2013 and exposure trip to Mulkanoor Cooperative Society was also arranged by the Federation.

### **Sheep EXPO 2014**

The Federation participated in Sheep Expo from 1<sup>st</sup> Feb 2014 to 3<sup>rd</sup> Feb 2014 in Hitex, Hyderabad to create awareness on best practices to be followed with regard to Management, Feeding and Breeding to sheep Entrepreneurs, shepherds.

### **Training on Sheep Rearing & Machine Shearing at Central Sheep Breeding Farm - Hissar, Haryana**

The A.P Sheep & Goat Development Cooperative Federation Ltd have identified 18 shepherds from 13 districts of A.P state and sent to Central Sheep Breeding Farm, Hissar Haryana state for training on sheep rearing & machine shearing on 01.11.2014 (01.11.2014 to 06.11.2014), which was sponsored by Central Wool Development Board (CWDB), Jodhpur.

### **Sheep Farms functioning as on 30.11.2014**

- A. Sheep Farm Penugonda, Ananthapuramu District
- B. Composite Livestock Farm, Chintaladevi, SPS Nellore district
- C. Ram Multiplication Farm, Siddiramapuram, Ananthapuramu

### **Intensive Sheep Development Programme**

To implement the Sheep and Goat Development activities in the Districts, the Assistant Directors (AH) are functioning at ISDP YSR, Ongole, Ananthapuramu, Chittoor, Visakhapatnam, SPS Nellore and Kurnool

### **Piggery Development**

Pig farming has an important role in improving the socio-economic status of sizable population of the weaker sections of the society. Piggery plays an important role in meeting demands of meat in rural as well as urban areas. Piggery development has been taken up in Andhra Pradesh under various weaker section programs to make pork available at reasonable price. There are 4 pig breeding stations functioning in the state (Visakhapatnam, Vizianagaram, Gopannapalem in West Godavari District and Muktyala in Krishna District) to make the required pedigree Male and Female breeding stock available to the beneficiaries under various schemes.

### **Piggery Development Project, Visakhapatnam**

This project renders necessary technical assistance to beneficiaries for maintenance of fattening units, up gradation of desi pigs, supply of premixed feed, marketing of finished pork and pork products in the districts of Visakhapatnam, Vizianagaram and Srikakulam besides exercising technical control over 4 pig breeding stations and promotion of Pork sales in the state. There are 34 pork booths functioning in the districts of Visakhapatnam, East Godavari, Vizianagaram, West Godavari, Krishna and Srikakulam.

### **Poultry Development**

Poultry farming in Andhra Pradesh is a dynamic and fast growing segment of Agriculture Sector. The State occupies second position in the country in egg production. The Department besides extending modern technical know-how to the poultry farmers is attending to issues of production and supply of poultry vaccines to backyard poultry birds to protect against various diseases. Poultry Development scheme comprises of the following components:

#### **A. Assistance to State Poultry Farms**

The scheme “Assistance to State Poultry Farms” is under implementation in Andhra Pradesh. Vanaraja

Multiplication farm was developed at Utukuru village of YSR District and the hatchery was started on 10.12.2013 with a capacity to hatch 10,000 eggs per batch and is meeting the demands of neighboring districts.

### **B. Rural Backyard Poultry Development Programme**

The Government is implementing Centrally Sponsored Scheme “Rural Backyard Poultry Development” in Andhra Pradesh for distribution of 45 chicks of four- week old to identified BPL beneficiaries in 3 cycles at a gap of 16 weeks at the rate of 20, 15 and 10 chicks in each cycle. A subsidy of Rs.40/- per bird for 45 birds (3-4 week old) is provided under this scheme. In addition, an assistance to beneficiaries of BPL families for infrastructure to accommodate 20 chicks at a given time like night shelters and other inputs (Rs.750/- per beneficiary) is also provided under this scheme as 100% subsidy. An unutilized amount of Rs.100.42 Lakh during 2013-14 is revalidated by Government of India is released for utilization during 2014-15.

### **Andhra Pradesh Dairy Development Cooperative Federation Limited.**

The Strategy is to reach every dairy farmer in every village through Village Milk Cooperative Society equipped and managed professionally; Farmer-centric approach to service livestock & technical support, facilitate inputs; Procure milk in cluster of villages by establishing BMCU at Mandal level, which is professionally managed by trained personnel as a profit Centre; Setup Dairy Processing Plant in all districts and Build strong & multiple partnerships with cooperatives and other stakeholders to takeoff under common brand through joint management with APDDCF as Nodal Agency on AMUL model.

### **The Mission after Reorganization**

Develop dairy values cover and uncover areas in the state under cooperative ambient facilitate common cooperative brand VIJAYA, protect cooperatives from international brands, provide online Milk Monitoring & Payment Gateway(OMM&PG) Milkosoft - aiming direct payment to farmers through their Bank Account, formulate HR Policy on corporate/professional lines like with Amul,

policy initiatives and institutional support, encourage Research and Development, setup Milk Price Regulating Authority in the State, extend Institutional finance at reduced rates of interest for dairying, capacity building through training & extension, research and knowledge transfer.

### **Invite Private Participation - possible interventions**

Design, build, operate and transfer milk collection network, milk processing facility, laboratories, milk testing facilities, animal feed processing plants, refrigerated vehicles, insulated stainless steel tankers, defunct dairy/milk plants and maintenance and upkeep of Infrastructure. Promote to setup training institutes & Train stakeholders involved in dairy supply chain. Research in dairy technology renders tremendous potential.

### **Initiatives**

- Develop dairy value chain to a level commensurate with our 3<sup>rd</sup> position in milk production
- Bring milk procurement from un-organized to organized sector through various policy initiatives
- Invite and involve various stakeholders at national and international level
- Use Information Technology to promote farmers empowerment and best practices in Dairy Sector
- Provide common platform to the milk producers and consumers who are two end of the spectrum in achieving win-win situation.
- Farmers centric Implementation of Livestock Development with Dairy Development activities to ensure seamless service delivery

### **Andhra Pradesh Centre for Advanced Research on Livestock Pvt Ltd., (APCARL), Pulivendula, YSR District.**

APCARL was established as a Private limited company under the companies Act, 1956 on 11.11.2008 with a tentative budget allocation of Rs.386.24 crore. An amount of Rs 245.45 crore released to APIIC was utilized and Rs. 11.00 crores is available in the SVVU for taking up further in

complete works.

### **Objectives of APCARL**

To conserve indigenous germplasm, to study introduction of genes for better production, reproduction, disease resistance and adaptation, to develop feed and fodder resources, to improve animal reproduction through new technologies, to study disease monitoring, surveillance and mapping, to develop cost-effective vaccines and disease diagnostic tools, to study environmental and industrial pollutants, mycotoxins, drug and pesticide residues etc for food safety, to make use of GIS satellite imaging for studying livestock distribution, land and water management and environmental impact, to conduct on-farm validation and transfer the developed technologies, capacity building of field functionaries and farmers, to forge collaboration with national and international institutions and to create adequate trained personnel in the country in the specialized areas of Veterinary science such as nanobiology.

---

## **FISHERIES**

Fisheries is one of the most promising subsector of the Agriculture sector. This subsector occupies a predominant place in the socio-economic development of the State as it contributes substantially to economic growth and income generation to lakhs of people. Sustainable development of Fisheries can only be achieved through improvement of the quality, technical skills and management of human resource in the Sector. It is a significant employment generator and a source of nutritious food and foreign exchange earner for the State. About 1.4 million people are directly or indirectly employed in the State in this sector with it recording faster growth than crop and livestock sectors.

Andhra Pradesh ranks first in Brackish water shrimp production, first in Fresh water prawn production, second in Fresh water fish production, second in total value of Fresh water fish and produced and fourth in Marine fish production. The State contributed nearly Rs.3,000 crore by way of marine exports, which is nearly 50% of the country's marine exports. The objectives set for the development of

the sector are

- Ensuring sustainable development
- Promotion of welfare of fishermen
- Promotion of investment to create infrastructure
- Promotion of fisheries value chain and boosting exports
- Setting institutions to build and multiply skills

### Fish/Prawn Production

11.18 Lakh tonnes of fish and prawn were produced in Andhra Pradesh in 2014-15 (upto November 2014). The Fisheries sector contributes 4.10 % to the GSDP 2014-15(AE). 17.69 Lakh tones Fish and Prawn production was achieved in the year 2013-14. Target for Fish and Prawn production was 18.68 lakh tonnes and 11.18 Lakh tonnes was achieved in the year 2014-15(Upto 30.11.2014, Target for Fish and prawn production was 17.12 Lakh tonnes and 17.69 Lakh tonnes was achieved in the year 2013-14. Details of Fish and Prawn production are shown in Table 5.18 and given in Annexure 5.28.

**Table 5.18: Fish and Prawn Production**

(Lakh Tonnes)

Year	Marine	Fresh Water	Brackish Water Shrimp	Total Production	Growth Rate %
2005-06	2.19	5.53	0.42	8.14	5.84
2006-07	2.41	5.64	0.38	8.42	3.42
2007-08	2.55	6.36	0.47	9.38	11.35
2008-09	2.91	7.84	0.26	11.01	17.47
2009-10	2.93	8.34	0.31	11.58	5.15
2010-11	2.91	10.90	0.43	14.24	22.92
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 (upto Nov 2014)	2.27	8.07	0.84	11.18	

Source: Commissioner of Fisheries

Production of fish/prawn in the state has increased constantly from 8.14 lakh tonnes in 2005-06 to 17.69 lakh tonnes in 2013-14, and 11.18 lakh tonnes (upto Nov 2014) registering an average annual growth rate of 9.92%. This became possible because of the large scale involvement of farmers who were driven by robust market especially in Kolkata and North-Eastern states took up intensive pisciculture in the delta areas of the state.

### Important Schemes/Programmes

#### 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 15953.66 ha of 16,061 farmers in 9 coastal districts, which includes farms both below and above 2 ha area up to March. 2014.

#### 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 24,673 ha area of Fresh water aquaculture in the state up to November, 2014.

#### Housing Scheme for Fishermen (CSS-50: 50)

The Housing Programme for fishermen has been converged with INDIRAMMA. The Government of AP sanctions houses under INDIRAMMA Housing Programme to cover all eligible families of weaker sections at a unit cost of Rs.54,250/- including ISL. The Government decided to pay Rs.20,000/- as subsidy to the GOI in lieu of bridge loan to fishermen eligible under the scheme of GOI. So far, Government has released Rs.3.464 Crore for 1732 fishermen houses. The Government has



sanctioned and released an amount of Rs.250.00 Lakh in the year 2014-15.

#### **Construction of Mini Fishing Harbours / Fish Landing Centres / Additional Shore Based Facilities**

Creation of infrastructure facilities at Fishing Landing Centres is taken up to provide the basic facilities for hygienic conditions in fish handlings. It is proposed to construct Mini Fishing Harbours at 1)Uppada in East Godavari 2) Juvvaladinne in SPS Nellore and 3) Vodarevu in Prakasam District and Fishing Landing Centres at Rallapeta and Manchineellapeta in Srikakulam District.

The Central Institute of Coastal Engineering for Fishery, Bangalore has conducted reconnaissance survey and furnished pre-feasibility report with cost estimates of fishery harbours of Rs.133 crore for Juvvaldinne SPS Nellore district, Rs.170 crore for Vodarevu Prakasam District and Rs.180 crore for Uppada in East Godavari Dist and Rs.7.18 crore for Fish landing Centre at Rallapeta and Rs.7.50 crore at Manchineellapeta in Srikakulam District.

Government of India has entrusted the investigation and formulation of proposal for construction of fishing harbour on priority basis to the CICEF, Bengaluru.

Government of India has sanctioned administrative sanction for Rs.1698 lakh with Rs.1273.50 lakh towards 75% of GoI share and released an amount of Rs.150 lakh as 1<sup>st</sup> instalment for construction of fish landing centre at Antervedipallipalem, East Godavari district. Additional Shore based facilities @ Rs.100 each (27 Nos) proposed with a total estimated cost of Rs.2700 lakhs.

#### **Group Accident Insurance Scheme for Fishermen (CSS-50: 50)**

The annual premium under the Group Accident Insurance Scheme for fishermen which is Rs.65/- per person is shared equally by Central and State Governments. The Government of India releases their share directly to the National Federation of Fishermen Cooperatives, New Delhi for payment of premium to the Insurance Company. The Ex-gratia payable is Rs.2.00 lakh in case of death/ permanent disability and Rs.1.00 lakh in case of partial disability. In addition to insured amount, the State Government provides an ex-gratia of Rs.1.00 Lakh

to the families of deceased fishermen.

#### **Relief-cum-Savings Scheme (CSS-50:50)**

The Scheme implemented uniformly for both marine & inland fishermen. Relief is to be given to fishermen uniformly three months of fishing ban period while seeking saving from them for Nine months. The fishermen contribution will continue to be Rs.900, which would be collected over a period of Nine months. Contribution of Rs.1800 will be made by the Central & State on 50: 50 thus the total contribution of Rs.2700 will be distributed to the fishermen in three equal monthly installments of Rs.900 each during ban on fishing. The beneficiary has to contribute Rs.100 per month for 9 months. An Amount of Rs.1800 is provided by the central and state government on 50:50 basis. Government of India revalidated Rs.88.24 lakhs in the year 2012-13 for utilization. An amount of Rs.104.48 lakh spent during the year 2013-14.

#### **Motorization of Traditional Crafts (CSS-50:50)**

Motorization of traditional crafts by fixing outboard/in board motors is taken up to reduce manual effort of marine fishermen. A subsidy of 50% cost not exceeding Rs 30,000/- per craft towards the cost of out-board / in board motor is provided.

#### **Supply of Fish Seed to Fishermen Cooperative Societies**

Under this scheme, 50% subsidy on the cost (unit cost 25,000 per tank and 50% subsidy of this is 12,500 per tank) of fish seed stocked in tanks is provided for ensuring adequate seed stocking and increase in inland fish production.

#### **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 crafts. The subsidy on sales tax is Rs.6.03 per litre.

#### **Supply of Ice-Boxes**

The scheme of supply of ice boxes was taken up

previously with assistance from the Ministry of Food Processing, as there is a great demand for them. A subsidy not exceeding Rs.2000/- per box is being provided. There are 1511 Self Help Groups (Matsya Mitra Groups) organized in the state. An amount of Rs.200.00 lakh was provided and an amount of Rs.116.00 lakh were released for the supply of ice boxes for the year 2013-14 and an amount of Rs.29.00 Lakhs were released for supply of Ice Boxes to all Districts during the year 2014-15.

### **Special Enactment for Scheduled Caste Sub Plan and Tribal Sub Plan:**

A special initiative programme is proposed under Scheduled Caste Sub Plan and Tribal Sub Plan (SCSP and TSP) during 2014-15 for empowerment of fishers through integrated development of model SC fishermen cooperative societies in the state through introduction of modern fish culture practices, development of post harvest infrastructure for retail fish marketing i.e. transport vehicles (Cold chain fish transportation ensuring freshness & hygiene) and socio economic development measures, it is proposed to develop a total of 26 SC fishermen cooperative societies in 9 coastal districts as model SC fishermen Cooperative Societies by providing grant for input, post harvest infrastructure for marketing of fish and construction of Community Hall etc. The subsidy will be 90% for the components at 1 to 3 and 100% grant for 4 to 6 components.

### **Supply of inputs to SC fishermen**

Scheduled Caste fishermen will be provided financial assistance for purchase of fishery inputs like fish/prawn seed, feed, nets etc., under this scheme. The unit cost is Rs.10,000 out of which subsidy will be 90%. The beneficiary contribution will be 10%.

### **Supply of Boats and nets**

SC fishermen living near the rivers and reservoirs will be provided financial assistance for purchase of boats and nets, like coracles, putties, FRP Beach landing Crafts, arige and nets like cast nets, gill nets, of the choice of the beneficiary for fishing under this scheme. The unit cost is Rs 2.00 lakh and subsidy will be 90% and 10% will be beneficiary contribution. If the unit cost is more than Rs.2.00

lakh the scheme can still be implemented if the beneficiary is willing to contribute the additional amount.

### **Relief to Fishermen during Ban Period (Supply of Rice)**

Government of Andhra Pradesh has extended relief measure for affected fishermen families in the form of supply of rice to prevent hardships to fishermen during fishing ban period at sea in the months of April-May. 31 Kgs. of Rice for each of the 66,139 affected fishermen families (Mechanized and Motorized Boat owners and crew) for marine fishing banned period of 47 days free of cost under this scheme.

The Government released Rs.350.00 Lakh to Coastal Districts for the distribution of 31Kgs. of Rice free of cost to 61,139 identified fishermen families affected by ban on fishing in the sea in 2014-15.

### **Fisheries Development (New scheme)**

Under this scheme, infrastructure schemes like construction of community halls for Inland and marine fishermen, and beneficiary oriented schemes like supply of boats and nets to reservoir fishermen and marine fishermen, supply of cycles, mopeds along with ice boxes for fish vending both for General and SCs and STs separately, supply of water analysis kits, etc., are proposed to be provided. An amount of Rs.207.90 lakh was released in the month of December 2014 for implementing the schemes.

### **Rashtriya Krishi Vikasa Yojana**

The Government approved 5 projects at the cost of Rs.1485.00 lakh with the funds allocated under the Rashtriya Krishi Vikasa Yojana (RKVY) project in the year 2014-15 up to December 2014 and an amount of Rs.700.00 lakhs were released for implementation of the schemes is under progress.

- Provision of Operational Equipment and Inputs for Fish Seed Production and Rearing in Government Fish Seed Farms (50)
  - Creation of additional facilities in the existing fish markets
  - Construction of satellite nurseries
  - Assistance to Fish vending
- a) Fish Vending unit with Moped (500)

- b) Fish Vending unit with Auto (25)
- Stocking of fingerlings (80 mm) in public water bodies (reservoirs/tanks)

### National Fisheries Development Board Scheme

The National Fisheries Development Board Scheme (NFDB) sanctioned and released Rs.174.50 lakh during the year 2014-15 for stocking of 80-100 mm fingerlings in 26 reservoirs under Reservoir Fisheries Development scheme on 100% grant.

### Organization of Fishermen Cooperative Societies

The Government of Andhra Pradesh 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. As far as Marine Fishermen Societies are concerned, they are involved in schemes like diesel subsidy, Relief-cum-saving scheme, Group Accident Insurance scheme.

While so far 2,52,380 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 immediately. Details are shown in Table 5.19.

Type of Societies	Nos	Members
Inland Fishermen Coop.Societies	1330	130064
Marine Fishermen Coop. Societies	424	81,321
Brackish water Fishermen Coop. Societies	12	762
Fisherwomen Coop. Societies	509	37818
Fishermen marketing Coop. Societies	5	2415
District Fishermen Co-op Societies	13	—
<b>TOTAL</b>	<b>2293</b>	<b>252380</b>

### Matsya Mitra Groups (SHGs of Fisherwomen)

Women SHG (Self Help Group) movement in the state is very strong. The department has organized fisherwomen into SHGs called 'Matsya Mitra Groups (MMGs)' taking advantage of the prevailing favourable conditions. There are 866 fisherwomen Co-operative societies with a total membership of 61625. The MMGs are organized within fisherwomen Co-operative Societies. So far 1539 MMGs covering 18,000 fisherwomen were organized. These MMGs prepare their micro-business plan and take up income generating schemes for improving their economic condition. A revolving fund is given to the groups under CM Package and RKVY at Rs.25000 per group of 10-15 women. The groups also approach banks for taking loans to augment their resources.

## FOREST

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.

The tangible benefits derived from Forests 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.

As per the forest records, the state ranks 9th in India having Forest Cover Area of 36914.78 Sq. Kms which amounts to 22.64%. Out of the Forest Area, 651.25 Sq. Kms is Very Dense Forest, 11810.22 Sq.

Kms Moderate Dense Forest Area, 10938.54 Sq. Kms Open Forest, 9241.77 Sq. Kms Scrub Forest, 3900.49 Sq. Kms Non-Forest and 372.51 Sq. Kms are Water Bodies. District wise forest area is shown in Annexure 5.29

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.

The scheme for soil conservation in River Valley Project was taken up in the Machkhand/Sileru basin in Visakhapatnam District and up to 1975 over 7850 Hectares of badly eroded area were afforested. Moreover 43120 Hectares of agricultural land was treated with various soil conservation measures like contour bunding, bench terracing, gully plugging, stabilization of river banks etc.

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 the target of 33% area under tree cover by the end of XI Five Year Plan (2007-12).

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, 4320 Vana Samrakshna Samithis (VSS) 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 State Government makes budget provision and fixes the physical and financial targets every year to implement this scheme.

The physical targets and achievements of Departmental Extraction of Forest Produce of



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

Species	2013-14		2014-15 (upto Jan 2015)	
	Target	Achie - vement	Target	Achie - vement
Timber(cmt)	16859	10401	4778	2551
Fuel (cmt)	24774	17521	22616	10868
Poles (Nos)	116095	2724	39265	1807
Bamboo (Nos)	10352473	5839001	4080494	2419428

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.52.07 crore in 2011-12, Rs.53.72 crore in 2012-13, Rs.57.33 crore in 2013-14 and Rs.35.97 crore in 2014-15 (upto Dec 2014). Details of the value of forest produce in the State are given in Annexure-5.30.

By sale of 2694.00 MTs red sanders, an amount of Rs.855.51 crore was realized in addition to regular Revenue.

### 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.

Forest Development Agency constituted as a registered society, under Societies Registration Act and functions as a federation of FDAs. It was a registered on 15-04-2010. 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 13th Finance Commission, National Bamboo Mission Green India Mission, & National Medicinal Plantation Board (FDA Component) subject to release of funds by Government of India. The schemes are funded by 100% grant from the Government of India.

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

1249 VSSs/EDCs were involved in implementing these projects. 2110 Ha area was targeted for the years 2014-15 and area treated was 1910Ha. The expenditure incurred during the year 2014-15 i.e. upto January, 2015 under National Afforestation Programme (FDA Component) Rs.185.575 lakh, 13<sup>th</sup> Finance Commission TSP & Main Head Components Rs.547.093 lakh, under Green India Mission Rs.26.99 lakh.

### Production:

There are 3 Major Wood-based industries in the State; there is no supply of raw material from the Forest department to the major wood based industries. 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. During the year 2010-11 the approved rate for supply of BIC to Paper mills was Rs.1000 per MT and for the year 2011-12 the approved rate for supply of BIC to Paper Mills was Rs.1050 per MT. There is No supply of Bamboo Industrial Cuts to the Paper Mills for 2012-13, 2013-14 & 2014-15 seasons. Hence fixing of rate does not arise. Details of major wood based industries are shown in Table 5. 21

Table 5.21 Major Wood Based Industries

Name of the Industry	Nature	Production Capacity Tonnes Per Annum (TPA)	Raw Material
Andhra Pradesh paper Mill Rajahmundry	Paper	174500	Bamboo
Godavari Plywood Ltd. Rampachodavaram	Plywood	15.0 Lakhs Sq. Mtss (6000 Cum)	Non-Teak
Sri Rayalaseema Paper Mills Kurnool	Paper	42000	Bamboo

Source: Forest department

## 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.

The main species raised for public distribution and planting in public lands are Teak, Red sanders, Bamboo, Amla, Seethaphal, Casuraina, Eucalyptus seedlings for planting.

### 65<sup>th</sup> Vanamahotsava

The State level 65th Vanamahostava 2014 was celebrated on 24th August 2014 at Hyderabad was launched by Hon'ble Chief Minister of Andhra Pradesh at Vadlapudi village of Gajuwaka mandal of Visakhapatnam District. Vanamahostava celebrations were simultaneously conducted at all the District Head Quarters throughout the state. The participants in the Vanamahostava Programme included, the elected people representatives, VSS members, NGOs, School and College Students, Government Officials and General Public. The Forest Department had made elaborate arrangements for taking-up 107 lakh plants raised in 13 Divisions in Andhra Pradesh. An amount of Rs.33.00 Lakh expenditure incurred for the said program.

### Mahathma Gandhi National Rural Employment Guarantee Scheme

#### NEERU-CHETTU

##### Performance 2014-15

Activity wise performance of the Department up to January – 2015 is given in Table 5. 22

**Table 5.22 Performance of Neeru-Chettu**

Name	Name of indicator	Target	Achievement	%
Chettu	Block Plantation (Ha)	7981	7712	98
	Avenue Plantation (Km)	664	642	97
	Free Distribution of seedlings (Cr)	1.17	0.75	64
	Raising of Nursery for 2015-16 (Cr)	17.5	Under progress	–
	Advance Operations for Planting during 2015-16 (Ha)	12122	Under progress	
Neeru	Maintenance of water harvesting structures / old SMC Structures / CCTS (LCmt)	2.38	1.96	86
	Construction of Water Absorption Trenches (WAT) (Kms)	30	12	40
	Construction of Peripheral Trench / Elephant proof Trench (Kms)	100	15	15
	Construction of PT/CTs (Nos)	204	41	20

Source: Forest Department

## Wildlife Conservation

There are 16 Wildlife Sanctuaries including 3 National Parks in Andhra Pradesh with an area of 7410.888 Sq. Kms, which includes 1 Tiger Reserve (NagarjunaSagar Srisailam Tiger Reserve), 1 Elephant Reserve (Koundinya Sanctuary and Rayala Elephant Reserve) and 1 BIOSPHERE Reserve (Seshachalam). Details of protected areas are in the state are given in Annexure 5.31.

There are 2 Zoological Parks in the state, i.e., Indira Gandhi Zoological Park, Visakhapatnam and Sri Venkateshwara Zoological Park, Tirupati which are recognized by Central Zoo Authority. Both the zoos are among the well managed zoos in the country and are expanding with addition of new species and better facilities for visitors.

In addition to zoos 2 Deer Parks are functioning under control of the forest department in the state at Kandaleru Deer Park in SPS Nellore district and Chittoor RF Deer Park in Chittoor District.

Kotappakonda Deer Park in Guntur district is under development. Deer Park, Nagarjuna Fertilizers and Chemicals Limited Green Belt in Kakinada and Deer Park, GVK Power Plant in East Godavari are managed by private organizations.

## **Achievements in Wildlife Conservation**

### **1. Restoration in Kolleru Lake Eco-system**

Kolleru Lake is one of the largest fresh water ecosystems (Wetland) of international importance recognized under Ramsar convention (Iran 1971) covering 2,25,250 acres up to its +10 ft. contour. It is formed between the alluvial plains of Rivers Godavari and Krishna due to natural geological formation covering 7 mandals in West Godavari district with an area of 300 Sq.km. and 2 mandals in Krishna district. The area up to +5 contour is notified as a Sanctuary.

### **2. Biodiversity Conservation Society of Andhra Pradesh**

This Society was constituted in compliance with the directions of the Hon'ble Supreme Court of India while according clearance for the Pula Subbaiah, Veligonda Project and for S.L.B.C underground tunnel in NagarjunaSagar Srisailam tiger Reserve area. This society was registered under the Andhra Pradesh Societies Registration Act, 2001 to monitor the utilization of funds deposited with the society. The interest accrued out of capital deposited, is being utilized for development of Protected Areas in the State.

### **3. Restoration of Mangrove Forests**

A target area of 5600 ha of degraded mangrove and blank areas in Godavari and Krishna river estuaries has been taken up for restoration of the mangroves under Tsunami Mitigation activity through the World Bank aided A.P. Community Forest Management Project.

The GOI-UNDP-GEF Project "Mainstreaming Coastal and Marine Biodiversity Conservation into Production Sectors in the East Godavari River Estuarine Ecosystem, Andhra Pradesh" was prepared jointly by the Government of Andhra Pradesh, Ministry of Environment and Forests, New Delhi and UNDP, India.

### **4. Seshachalam Biosphere Reserve**

The Biosphere Reserve has been notified and made functional with an area about 4756 Sq.km. Local level management committee and State level management committee have been formed and a meeting conducted to finalize Biosphere Management plan for 2013-14. The plan has been approved by GOI and is being implemented.

### **5. Environmental Education**

The Curator, Indira Gandhi Zoological Park and Sri Venkateshwara Zoological Park and other Protected Area Managers have been bringing out several educational material for various target groups including the school children on environmental education.

### **6. Conservation measures for Sea Turtle along cost line of Andhra Pradesh**

Efforts have been made 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 from 2009-10 onwards.

Nearly 242094 eggs have been protected in nearly 2500 nests and 183794 hatchlings have been released in to the sea during 2014-15 (up to May 2014).

### **7. Zoo Authorities of Andhra Pradesh**

Two Zoological Parks in the state are rated among the best zoos of the country with excellent facility for display of animals, conservation breeding, visitor amenities, and conservation education etc. A Society called Zoo Authorities of Andhra Pradesh (ZAAP) has been formed and registered for the effective monitoring of the management of the Zoos. The revenue obtained from the Zoos is ploughed back for the management of Zoos under the supervision of the above Society.

## **Efforts of Wildlife Conservation**

### **1. Protection**

a) Base camps were organised in Protected Areas of the forest areas which are vulnerable for smuggling, poaching and encroachments base camps with 5 members from local community are

established to support the staff in protection of forest and protected wildlife habitat from destruction assisted by 16 Strike Force and 3 Police parties and Animal trackers. Intensive protection measures have been initiated for protection of wildlife duly initiating foot patrolling for checking water bodies, vulnerable paths. Snares, electric wires, traps and other weapons have been seized. Mostly local tribals (250 Chenchus in Nagarjuna Sagar Srisailam Tiger Reserve and other tribals elsewhere) and other village youths have been engaged giving them gainful employment helping conservation.

## **2. Habitat Improvement**

### **a) Grass land and Fodder development**

Special initiatives have been taken up for development of fodder by protecting existing grass lands by removal of weed, woody growth and supplementing with grass slips and broadcasting of native grass seeds. During 2013-14, 169 ha. grass lands are developed and 207 ha. have been proposed in 2014-15.

### **b) Water resource development**

Mostly percolation tanks and natural water holes have been developed for providing water to wild animals throughout the year. Solar energy based water pump have been established in 7 Tiger Reserve areas in Nagarjuna Sagar Srisailam Tiger Reserve which has been a good source of water to wild animals where natural surface water is not available. Similarly, 452 Saucer pits located in the forest fringe areas have been maintained to prevent straying of wildlife during pinch period.

## **3. Research Activities**

a) Collaborative research with NGOs and Universities on species & habitat with special emphasis on critically endangered and other species is encouraged

b) Establishment of field research laboratories: The research laboratory established in Srisailam has been renovated. The inventory of flora and fauna of Nallamalais and new findings have been documented. Another field research laboratory has been established in Tirupathi.

c) Scientific methods for wildlife estimation with

camera traps etc., has been initiated. 450 Camera traps have been procured and extensively deployed in Nagarjuna Sagar Srisailam Tiger Reserve, Papikonda NP and SVNTP Tirupathi. Camera trap images of Tigers and other endangered shy, nocturnal animals indicate the wildlife wealth of the sanctuaries.

The 3<sup>rd</sup> All India Tiger Co-predator and Prey Estimation 2014 were taken up in the State from 18.01.2014 to 25.01.2014. The data was collected at beat level in Sanctuary and RF areas of the State as per the guidelines communicated by National Tiger Conservation Authority (NTCA), Govt. of India. The data after compilation furnished to Wildlife Institute of India, Dehradun through NTCA for analysis. The intensive camera trap called Phase IV is being taken up in Nagarjuna Sagar Srisailam Tiger Reserve and Gundla Brahmeshwaram Wildlife Sanctuary every year.

## **4. Modernization of Zoos**

a) Improvement of facility for display of animals, conservation breeding: Display enclosures have been constructed/ improved for Giraffe, Wolf, Jackal and Mouse Deer. Conservation breeding of Wild Dog, Jackal and Red Jungle Fowl are being taken up in the two Zoological Parks.

b) Improvement of facilities for visitors and conservation education in Zoos: Sixteen battery operated vehicles have been provided in the two Zoological parks for the visitors to move in addition to other facilities. Interpretation centres has come up in Indira Gandhi Zoological Park, Visakhapatnam.

## **5. Publicity & Extension**

Involvement of NGOs for wildlife conservation, establishment and renovation of environmental education centres, ecological knowledge park in Srisailam and biodiversity parks etc. and establishing Environmental Education Centres in all the protected areas.

## **6. Capacity Building of staff**

Training programmes & workshops are being conducted to the field staff to sensitize them on wildlife conservation, protection and rescue operations at APFA Dulapally. To expose the staff to various successful practices in wildlife conservation,



study tours are being taken up to various protected areas within and outside the state.

### **Project Tiger**

#### **Salient features of Project Tiger**

- NagarjunaSagar Srisailam Tiger Reserve with an area of 3296.31 Sq.Kms. including buffer of 730.29 Sq.Kms. and Gundla Brahmeshwaram Wildlife Sanctuary (1194 Sq.Kms) as its extended core is one of the largest conservation landscape in the country.
- This is country's one of the rich biodiversity area having a contiguous landscape of a good forest eco-system of un-fragmented Nallamalais of the Eastern Ghats.
- Many undiscovered flora and fauna area still existing in this area of which a few new species have been discovered by the Forest Department. The project is going on sound principles of conservation and management backed by strong research.
- The Primitive Tribal Group Chenchus have been involved in the management of NagarjunaSagar Srisailam Tiger Reserve and at present nearly 250 of them are engaged as protection watchers and animal trackers.
- Scientific management and monitoring of wildlife is being taken up including the use of camera traps.
- Lot of awareness and publicity initiative have been taken up under different schemes.

#### **Achievements**

- National Tiger Conservation Authority (NTCA) Government of India has awarded excellence award for effective human resource management for involving Chenchus (250) in protection and the management of Tiger Reserve during 2010-11.
- Good habitat management practices have resulted in increase of the Tigers, Co-predators and their prey species. The population of tigers in Srisailam is showing an upward trend as per the estimation conducted

by National Tiger Conservation Authority (NTCA), GOI and Wildlife Institute of India. Since 2006 the Tiger population is showing an upward trend and during 2014 the range has been assessed from 60-72 with a mid-value of 66. NSTR has been evaluated for Management Effectiveness by Government of India and rated among the “Good” category Tiger reserves in India during 2011 and also during 2014.

- The Bio-diversity conservation laboratory has been setup at NagarjunaSagar Srisailam Tiger Reserve, Srisailam and the various research activities are being taken up. This includes preparing an inventory of the Biodiversity of NagarjunaSagar Srisailam Tiger Reserve and other P.A's.
- Ecological Knowledge Park, Environmental Education Centre renovated with theme of Biodiversity Conservation.
- 7 innovative solar pumps have been installed in NagarjunaSagar Srisailam Tiger Reserve and other measures for water development, together with habitat development works have helped in improvement of habitat & wildlife.

#### **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.

##### **Scheme for Maintenance of Forests – 13<sup>th</sup> Finance Commission Grants**

It was envisaged to create infrastructure for protection of forests and wildlife by providing mobility to the staff, engaging Tribal Helpers as striking force, base camps, dog squad maintenance, survey and demarcation of forest land, construction of internal roads in the Forests, building and information network etc., under this forest protection scheme. The main objective of the scheme is to ensure protection of forests and wildlife. The Government of India allocated

Rs.24635.00 Crore for Forestry sector of Andhra Pradesh for five years commencing from 2010-11 to 2014-15.

An amount of Rs.540.51 lakh is spent under 13th Finance Commission grants upto December, 2014.

### **Normal State Plan**

The Budget provided by the State Government under the Scheme is utilized mainly to meet the expenditure towards items like salaries, secret service fund, motor vehicle maintenance, POL etc. mainly for flying squad divisions for effective protection of forests.

1141 Red Sander cases were registered with a quantity of 781.32 MTs and 841 vehicles seized and 2801 persons were arrested upto February, 2015.

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

The Government of India enacted “The Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006” and the “Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Rules, 2008. As per the Act, Forest rights have to be given to tribals, if they were in possession of forest land as individuals or as community as on 13-12-2005. The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 enacted by the Government of India came into force with effect from 31.12.2007.

1,70,764 Individual claims with an extent of 3,69,597 acres and 6,905 Community claims with an extent 7,36,324 acres are received.

74,960 title certificates issued for Individual claims with an extent of 1,75,649 acres and 1,538 title certificates issued for Community claims with an extent of 4,76,170 acres.

### **Information Technology (Geomatics)**

The Andhra Pradesh forest department has taken initiatives to make use of modern tools of geomatics, as envisaged in National Forest Policy 1988, to aid planning & decision-making process and effectively monitor & evaluate. AP is ahead of all other states in use of geomatics technology.

The major activities initiated under this are - creation of spatial (geographic) database on various scales, vegetation cover mapping and monitoring, survey and verification of notified forest boundary using DGPS, DGPS survey of FCA areas, enumeration of trees outside the forests and developing web-enabled forest management information system.

### **Projects Completed**

- Creation of Geo-Spatial database at various scales
- Vegetation Cover mapping and monitoring using IRS P6 LISS III Data 2007-08, 2008, 2008-09, 2009-10, 2010-11, 2011-12 and 2012-13.
- Forest Inventory and generation of Andhra Pradesh Forest Inventory 2010
- Generation of State of Forest Report - 2010 and 2011
- Forest Fire Risk Zonation and mapping for entire State
- Wildlife Habitat mapping and Bio-Diversity characterization for one District
- Selection of suitable sites for Eco-Tourism
- Andhra Pradesh Hazard Mitigation Project for entire Coastal area
- Selection of suitable sites for raising plantations
- Site suitability for construction of Water Harvesting Structures for entire state
- Change detection analysis and monitoring of Kolleru Lake

MIS includes Forest Protection Management Information System (FPMIS), Plantation Monitoring Information System (PMIS), Nursery Management Information System (NMIS), Land Record Management Information System, Financial Management Information System (FMIS), Sawmills Monitoring Information System (SMIS), Forest Inventory Management Information System (FINMIS), Forest Cover Change Monitoring Information System (FCCMIS), IT Infrastructure Management Information System (FITMIS), Forest Building Management Information System, Master Data Management Information System (MDMIS), E

Green Watch, Red Sander's Inventory Management Information System, 100 Days Strategic Plan Management Information System (HDMIS), Budget Management Information System, Vana Mahotsavam Management Information System(VMMIS) Trees outside Forests inventory in the state.

Man groove changes analysis from 1998 – 2012.

### **Forest Research & Development**

There are 10 Centers 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. 163.294 lakh that formed 91% of the Budget released in 2014-15 was incurred for Research Schemes.

### **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 as on 31-03-2013 and 31-03-2014 are shown in Annexure 5.32.

### **Andhra Pradesh State Bio-Diversity Board**

The Andhra Pradesh State Biodiversity Board was established in 2006 under Section 22(1) of the Biological Diversity Act, 2002 as notified in the Andhra Pradesh Gazette.

In pursuant to the notification of Biological Diversity Act, 2002 and Biological Diversity Rules 2004, the State Government have framed the Biological Diversity Rules 2009 for implementing and carrying out the Biological Diversity Act, 2002

#### **Objectives**

Conservation and sustainable utilization of biological diversity and fair and equitable sharing of biological resources among all stakeholders.

#### **Activities**

Maintaining Agri-Biodiversity, Animal and Fish Biodiversity, wildlife conservation and protection and traditional knowledge associated with medicinal plants, conservation and Bio-prospecting.

#### **Biodiversity Management Committees**

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 & micro organisms and chronicling of knowledge relating to biodiversity.

Biodiversity Management Committees (BMCs) are to be constituted at Zilla Parishad level, Mandal Parishad level, Gram Panchayat level and Municipality & Municipal Corporation level. Biodiversity Board also contemplates “Peoples

Biodiversity Registers” at the local body level and it is proposed to empower the stake holders to prepare Peoples Biodiversity Registers in a participatory method and other established techniques. The BMCs should have seven persons ie., local naturalists; Herbalist; Agriculturist; NTFP collector/traders Fisher–Folk; Representatives of user associations; Community workers; Academicians VSS members; SC/ST as per the % in the district;

Since formation of Biodiversity Board, it has constituted 519 BMCs at panchayat level, one at District level (Vizianagaram) and one at Municipality level (Bapatla). The total number of BMCs in the State is 523. Peoples Biodiversity Registers (PBRs) are prepared by 8 BMCs at their local bodies' level. There are more than 13600 local bodies in the State of Andhra Pradesh and it is expected that BMCs are to be constituted in all these local bodies.

### **Heritage Sites**

As per the Biological Diversity Act 2002 the board shall in consultation with local bodies and other key stakeholders, take necessary steps to facilitate setting up of areas of significant biodiversity value as heritage sites. The recommendation from the Board after consultation with the Central Government, the State Government shall issue notification to this effect. 1. Veerapuram and 2. Timmamma Marrimanu proposals were submitted to the Government for notification as Biological Heritage Sites and Government orders are awaited. Srisailam, Tirumala Hills, Kolleru and Talakona sites are proposed to recommend as BHSs are under consideration.

### **Biodiversity Parks**

Ex-situ Conservation Initiatives; Biodiversity Park established by Dolphin conservation society in Visakhapatnam is recognized as the first Ex-situ biodiversity park of A.P.

### **Bio- Piracy**

Bio piracy is controlled by apprehending and producing culprits before the court of law. The forest department staff is doing commendable work in this matter. Species such as Red Sand Boa (Snake), Star Tortoise, Tarantula (Spider), Red Sander are involved in bio piracy.

### **Bio-Diversity Day**

The A.P. State Biodiversity Board conducts International day of Biodiversity on 22<sup>nd</sup> May every year. Awareness programs were conducted at local body level and they taught about the Biological Diversity Act and importance of biodiversity conservation.

### **United Nations Environment Programme-Global Environment Facility Project:**

The main aim of the project is to increase the institutional, individual and systemic capacities of stakeholders to effectively implement Biological Diversity Act, 2002 to achieve biodiversity conservations through implementing Access Benefit Sharing agreements in India. This project was approved for 2011-2014 period with MOEF as the implementing partner for the project and the NBA made responsible for implementation of the Project.

### **Components and activities**

To develop standardized economic valuation methods for valuing biodiversity in the selected ecosystem, developing database on biological resources to tap ABS potential in project implementing States and assessing and quantifying the economic value of biological diversity present at local, state and national levels using appropriate methodologies. The Board has organized several programmes viz., i) National dialogue on “Traditional Knowledge (TK), ii) Access Benefit Sharing (ABS)”, iii) Group discussions with experts and BMCs, iv) Multi stakeholders workshops, v) Capacity building workshops on “economic valuation of bio-resources for Access and Benefit Sharing (ABS)” at district and local body levels and vi) Awareness meetings to the line departments and BMC members during the year 2014-15. 15 Biodiversity Management Committees (BMCs) were constituted in different ecosystems (agriculture, wetlands, forest) in Andhra Pradesh. Bank accounts were opened and an amount of Rs.20,000/- was released to each BMC as initial local biodiversity fund. In addition, 7 PBRs were also documented in the potential ABS agreement sites.



## Andhra Pradesh Forest Development Corporation

The Andhra Pradesh Forest Development Corporation was established in 1975 on the recommendations of the National Commission on Agriculture, to raise massive plantations to cater the needs of wood based industries.

### Objectives

- 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 for the landless poor, particularly in remote and agency areas.
- To undertake consultancy services for industries to raise and maintain plantations in their vicinity.

Details about plantations raised by APFDC 2014-15 (upto Dec 2014) are shown in Table 5.23.

**Table 5.23 (Area in Hectares)**

Sl. No	Species	Area (upto Dec., 2014)
1	Eucalyptus (Seed origin)	4585
2	Eucalyptus (Clonal)	28719
3	Bamboo	2438
4	Cashew	7368
5	Coffee	4010
6	Teak	745
7	Medicinal plants	505
8	Casuarina, Pines and other Misc. species	267
	<b>Total</b>	<b>48638</b>

Source: Forest Department

## Plantation Activities

### (i) Eucalyptus Plantation

The APFDC has been raising Eucalyptus Clonal Plantations in 28,719 Ha in 2014-15 up to December 2014. It is the single largest grower among PSUs in India. It is proposed to raise 8,000 Ha. in the next 3 to 4 years. Optimum yields are intended to be obtained from plantations because of improved site preparation, use of quality planting material and management practices.

### (ii) Bamboo Plantations

2,438 Hectares of Bamboo plantations were raised during 2014-15 upto December 2014. Due to better management practices, 2 years rotation has been adopted as against the normal rotation of 3 years that increased revenues. The Corporation is intending to expand bamboo plantations over 400 Hectares under National Bamboo Mission in the next 3 to 4 years to ensure supply of more raw material per annum to Paper Industries besides raw material to artisans.

### (iii) Cashew Plantations

The Corporation raised cashew plantations over an area of 7,368 Ha along the coastal belt in Prakasam and SPS Nellore districts and in the inlands of West Godavari and Chittoor districts. Presently, the older plantations are being replanted with high yield cashew varieties using scion banks.

### (iv) Coffee Plantations

The Corporation is maintaining about 4,010 Ha of coffee plantations in agency areas of Visakhapatnam and East Godavari Districts through intensive cultivation practices by scientific methods. These plantations generated about 6.00 lakh mandays of employment for tribals all around the year.

### (v) Pepper Cultivation

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

## Eco-Tourism

A.P. Forest Development Corporation Ltd.

has entered into the field of development of Eco-Tourism in Andhra Pradesh with the investment from private entrepreneurs for developing infrastructure and tourist amenities. The Rajeev Eco Park at YSR District has already been opened to the public. This project is attracting many visitors.

### 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 an agent to the Govt. in carrying out trade of Beedi leaves and export of Red Sanders wood.

### Employment Generation:

The Corporation is providing employment to tribal and Srilanka repatriates almost round the year. In other areas employment is provided to land less and poor during regeneration and harvesting activities. About 9.00 lakh mandays of employment 3.00 Lakh mandays in raising and maintenance of plantations (3.50 Lakh mandays in Coffee plantations and 2.50 lakh mandays on harvesting of plantations) has been provided to poor tribal and Sri Lanka repatriates.

Achievements during 2013-14, Projections and achievements upto Dec 2014 are given in Table 5. 24

**Table 5. 24 Achievements under APFDC**

Activity	2013-14	Projections	Achievement Dec 2014
Raising of Clonal Eucalyptus plantations (Ha)	2400.30	1800.00	1804.00
Raising of Bamboo plantations (Ha)	80.16	65.00	65.00
Raising of Teak plantations (Ha)	104.77	80.00	95.00
Harvesting of Eucalyptus pulpwood (MTs)	1,52,872	2,46,750	13491MT
Harvesting of Long Bamboo (Nos).	8,42,074	3,58,800	297516*
Harvesting of Bamboo Industrial Cuts (MTs).	169	658	47*
Harvesting of Raw Coffee ( MTs).	755	473.50	282.32*
Harvesting of Pepper- (MTs).	37.756	40	-

Source: Forest Department - (\*is in progress)

### 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. One acre of mulberry generates a steady income to a farmer with an average of Rs.75,000 annually in 5 to 6 crops. The

industry has an immense potential of generating employment for not less than 5 persons per acre throughout the year, both directly and indirectly. An important feature of Sericulture industry is involvement of female labour for more than 60% in silkworm rearing and cocoon reeling, which are critical operations in the silk production. Andhra Pradesh has the privilege of producing all 4 types of silk called Tasar, Eri, Muga besides Mulberry which are predominantly practiced in tribal areas of the state.

### 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 Vanya silk sector

## Initiatives

### A. Linkages to Farm Sector

State Government has recently announced the following incentives for Sericulture Farmers and Reelers:

Providing an incentive amount of Rs.50/- per kg for Bivoltine Hybride cocoons and Rs.10/- for Traditional Districts of Ananthapuramu, Chittoor and for other districts it is Rs.20/- per kg for multivoltine cocoons transacted in Govt. Cocoon Markets. The BVH cocoon production was increased from 1466.48 Mts to 1821.89 Mts in Andhra Pradesh with the introduction of incentives to BVH cocoon farmers. An amount of Rs.738.10 lakh was disbursed towards 1468.48 MTs of reeling cocoon incentive to farmers up to November, 2014.

### B. Linkages to 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 incentive of Rs.145.18 Lakh was disbursed to an allowed quantity of 177.713 Mts of silk produced on Charkas, Cottage Basin, Multiend, and Automatic reeling unit
- 50% subsidy on the cost of reeling sheds
- 90% subsidy for conversion of Charka / Motorized charka to backend Italian model reeling machinery

- Establishment of silk exchange in Proddutur of YSR District and Hindupur of Anantapuramu district for dupion and raw silk trading

## Impact of Initiatives

The Bivoltine cocoon arrivals increased from 1466.48 Mts to 1821.89 MTs 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 reelers and got converted to silk in Karnataka State. With implementation of cocoon incentive scheme, a quantity of 1821.89 MTs of cocoons was consumed by the local reeling units in the state up to November, 2014.

## Status of Sericulture industry

17139.32 Mts of CB Cocoons and 1821.89 Mts of BVH Cacoons were produced during 2014-15 (upto Nov, 2014). The productivity of sericulture industry increased to 61Kgs per 100 DFLs in 2014-15.

## Normal State Plan schemes

- Assistance to farmers for Bivoltine laying Rs.250 for 100 DFLs.
- Farm mechanisation by supplying brush cutters to Mulberry Farmers.
- Implementation of e-governance projects.
- Incentive to reelers for production of raw silk on improved multi end and improved cottage basin silk reeling units.
- Integration of charka reeling units to small twisting units
- Production incentive for the reeling cocoons produced by farmers including Eri farmers
- Providing assistance to Charka reelers for conversion to 6 basin reeling units
- Share capital assistance to SERIFED
- Supply of HYV Mulberry Saplings.
- Supply of quality disinfectants to increase the productivity
- Yarn support price to silk weavers inside and outside Co-operative fold.

An amount of Rs.2280.72 lakh released to the above schemes and incurred expenditure during 2014-15 up to Nov, 2014.

### Subsidies to Farmers under Catalytic Development Programme (CDP)

- For raising Mulberry Garden in 1 acre (75% of unit cost) with a subsidy of Rs.10,500/-
- Rearing Equipment (75% of unit cost) with a subsidy Rs. 52,500/-

### Farm Mechanisation

Farm Mechanisation equipment such as Brush cutters at subsidised cost is supplied to reduce labour costs in shoot harvesting of mulberry shoots in silk worm rearing. So far 16,550 rearing sheds were constructed of which 12,779 sheds were equipped with shoot feeding stands under this scheme.

### Construction of rearing sheds

Construction of separate pucca silk worm rearing houses is essential for ensuring hygienic conditions and preventing contamination during silk worm rearing. Therefore a scheme for construction of rearing shed was sanctioned under CDP for 3 types of rearing sheds with an assistance pattern of 25:25:50 to be shared by Central Silk Board, State Government & Beneficiary contributions respectively.

### Integration of Reeling Unit

Profit margin of Charka reeling units will double, if it is integrated with twisting units. The unit cost for establishment of unit is Rs.1,867 with 75% subsidy.

### Subsidies to Weavers:

4 Kgs of Silk Yarn will be supplied to an individual weaver outside the co-operative fold @ Rs.150/Kg with a subsidy of Rs. 600.00 in a month. 43,541 Weavers were assisted with a subsidy of Rs.25.25 crore during 2013-14.

### Research and Development

Andhra Pradesh State Sericulture Research and Development Institute, Hindupur was established in 1995 with the main intention of evolving new races, capable of producing International grade cocoons / silk. A new project called Identification of DNA

markers for baculovirus resistance in Silkworm was presented to DBT New Delhi for financial sanction. Six new hybrids developed by the institute have been submitted for National Silk Worm Race Authorisation. Bivoltine hybrids with disease resistance races are under field trials. In addition, certain eco-friendly user disinfectants such as Seri-Gold, Seri-Clean, Seri- Plus, Shakthi and Abhya etc that were released in the fields by farmers, increased production of cocoons from 5 Kgs to 10 Kgs. Details about the progress under Sericulture are given in Annexure 5.33 and achievements during 2014-15 (up to Nov,2014) are shown in the Table 5.25.

**Table 5.25: Sericulture - Achievement during 2014-15 (up to Nov., 2014)**

Area under Mulberry- Acres	5621.65
DFLs production including private & Govt. (Lakh Nos.)	24.627
Cocoon Production (MTs)	18961.20

Source: Sericulture Department

## AGRICULTURAL MARKETING

Agricultural production, processing and marketing are three pillars of the agricultural economy. Agricultural marketing infrastructure plays a pivotal role in the fostering and sustaining the tempo of rural economic development. Marketing 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. Successful marketing requires learning new skills, new techniques and new ways for obtaining market price information. In order to provide dynamism and efficiency in to the marketing system, large investments are required development of post harvest and cold chain infrastructure nearer to the farmers' field. Well-functioning markets are essential for driving up growth in the agriculture sector and for generating employment & economic prosperity in rural areas. With the fast changing production-consumption scenario, the requirement of cold storages in markets has increased manifold especially where perishable commodities are brought for sale. Currently agriculture markets are regulated



under respective State Agriculture Produce Marketing yards all over the country. Comprehensive market legislation covering the entire state came into force in 1966 called the Andhra Pradesh (Agricultural Produce and Livestock) Markets Act 1966, after the integration of Hyderabad Agricultural Produce and Livestock Markets Act, 1930 and the Madras Commercial Crops Act, 1933 in the State. The salient features of the Act are:

- To regulate sale and purchase of Agricultural produce
- To declare notified areas and markets for regulation
- To constitute market committees for each notified area for regulation
- To license all persons intending to trade in notified agricultural market area
- To levy and collect market fee
- To construct and develop market yards for regulation
- To prohibit collection of all unauthorized charges in sale and purchase of agricultural produce
- To arrange sale and purchase of agricultural produce in the market by open auction or tender system
- To collect and disseminate market information for use of farmers and traders

There are 190 Agricultural Market Committees under which 190 market yards and 134 sub-market yards are notified in the State, 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. Market Committee is responsible for the effective implementation of Markets Act and the AP (Agricultural and Livestock) Market Rules, 1969 and the Bye-laws of the Market Committee. Every Market Committee is a corporate body having perpetual succession.

The Commissioner & Director of Agricultural

Marketing is the authority at State level to supervise and control all Market Committees for effective implementation of the Act, Rules and Bye-laws and report to the Government about the working of Market Committees. 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, which is self-generating and is called Market.

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 and for other allied purposes specified by the Government from time to time. The Market Committees collected Rs.353.80 crore towards market fee during 2013-14 and Rs.281.14 crore during 2014-15 (up to December 2014). The details of district wise collection of market are given in Annexure 5.34

The Market Committees remits 10% of the annual income to a separate fund called Central Market Fund (CMF). The Central Market Fund is used to mainly provide loans to Market Committees besides grant-in-aid to financially weak Market Committees. Government is empowered to spend the CMF by special or general order for any purpose for the development of agricultural marketing and its allied activities. Details of loans given under this scheme 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
2013-13	10.94	1862
2013-14	15.33	2194
2014-15 (upto Dec 2014)	15.30	2154

Source: Commissioner of Agricultural Marketing Dept.

### **Rythu Mithra**

To make availability of quality seeds, pesticides and fertilizers to the farmers in the market yards on no loss no profit basis, which is presently defunct and needs to be revived.

### **Soil Testing Labs**

To facilitate farmers to get their soils tested in nearest places, Government established Soil Testing Laboratories in the market yards located in Revenue Divisional Head Quarters. 29 Soil Testing Laboratories were established in market yards. The respective AMCs will meet the cost of the chemicals and maintenance of labs and necessary steps were taken by the department for strengthen the labs in the market yard.

### **Farmer Training Programmes**

To create awareness and to develop capacity building on the pre and post harvest operations, the Government introduced 4 farmer training programmes per year in each AMC with the coordination of Agriculture/Horticulture departments and Agricultural University/District Agricultural Advisory and Transfer of Technology Centre.

Electronic weighing machines have been introduced in important market yards for ensuring accurate weighment of farmers produce.

### **Rythu Bandhu Pathakam**

Under the Rythu Bandhu Pathakam, the department providing pledge loan to farmers to help them avoid distress sale of their produce. Ceiling limit of

Rs.1,00,000 is raised to Rs.2,00,000. Farmers can store their produce for 180 days without interest and above 180-270 days interest at 12% per annum will be charged.

### **Rythu Bazars**

The Rythu Bazars were established in the year 1999. The concept of Rythu Bazar was developed to facilitate direct marketing between consumers and farmers. The main objective of Rythu Bazar is to ensure remunerative price to farmers and provide fresh vegetables to consumers at reasonable rates.

It was evolved as an alternate market strategy where growers and consumers are benefited. There is a network of 80 Rythu Bazars in the State. On an average about 5,000 farmers sell over 20,000 quintals of vegetables, every day through these Rythu Bazars directly to the consumers. It is a great reform in the marketing sector and became a model for other State Governments.

### **Gramin Bhandaran Yojana**

The scheme was introduced during the year 2001-02 to enhance the storage capacity in the market yards. 207 warehouses were constructed with a total capacity of about 2.0 lakh MTs of additional storage space was created in the State.

### **Accreditation of godowns under WDRAI**

Presently 1005 godowns with 7.374 lakh MT storage capacity are available in AMCs in the state. Of which 210 godowns in 140 AMC have been identified for accreditation under WDRA for scientific storage and action is being taken for completion of accreditation process.