



## THE AGRICULTURAL DEVELOPMENT IN INDIA AND ANDHRA PRADESH : A STUDY

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### ABSTRACT :

Agriculture plays a vital role in Indian economy. 54.6 per cent of the population is promised in agriculture and allied deeds (census 2011) and it subsidises 17.4 per cent to the country's Gross Value Added (current price 2014-15, 2011-12 series). Given the significance of agriculture sector, Government of India took several steps for its supportable development. Steps have been taken to improve soil fertility on a sustainable basis through the soil health card scheme, to provide improved access to irrigation and improved water good organization through Pradhanmantri Gram Sinchai Yojana, to support organic farming through Paramparagat Krishi Vikas Yojana (PKVY) and to support for creation of a unified national agriculture market to boost the incomes of farmers. As per the first revised estimations released by CSO on 29.01.2016, the Agriculture and Allied Sector contributed in the region of 17.0 per cent of India's Gross Value Added (GVA) at current prices during 2014-15. Gross Value Added (GVA) of Agriculture and Connected Sector and its share in total GVA of the country during the last 3 years together with the current year, was reckoned at 2011-12 current prices. The area under food grains was estimated to be 40.72 lakh hectares in 2017- 18 as against 39.70 lakh hectares in 2016- 17, showing an increase of 2.57 per cent. The total production of food grains in 2017-18 was estimated at 157.59 lakh tonnes while it was 149.16 lakh tonnes in 2016-17 showing an increase of 5.65 per cent. The gathering intensity for the year 2016-17 was 1.25. The number of holdings greater than before from 72.16 lakh in 2005-06 to 76.21 lakh in 2010-11. Government is for the most part committed to the welfare of farmers and supplying free power to all agriculture regulars including all the services released. The Budgetary subsidy (electricity) provided for agriculture given by the Government during the year 2017/-18 was Rs.3300 Crores. During the year 2017-18, it was programmed to announcement 50,000 new agricultural acquaintances. Up to 30- 11-2017, 40,154 agricultural services had been released. The total agricultural service station in the state as on 30-11- 2017 were 16.97 lakhs.



**KEYWORDS :** Agriculture plays , Indian economy , gross cropped area , Indian agriculture.

### INTRODUCTION:

As per the land use statistics 2012-13, the total geographical area of the country is 328.7 million hectares, of which 139.9 million hectares is the testified net sown area and 194.4 million hectares is the gross cropped area with a collecting intensity of 138.9 per cent. The net irrigated area is 66.1 million hectares. India has made impressive strides on the agricultural front during the last three decades. Much of the credit

for this success should go to the more than a few million small farming families that form the spinal column of Indian agriculture and economy. Policy support, production strategies, public investment in infrastructure, research and extension for crop, livestock and fisheries have significantly helped to increase food production and its availability. During the last 30 years, India's food-grain production nearly doubled from 102 million tons in the triennium ending 1973 to nearly 200 million tons (MTs) in the triennium ending (TE) 1999. Virtually all of the increase in the production resulted from yield gains rather than expansion of cultivated area.

Increased agricultural efficiency and rapid industrial growth in the recent years have contributed to an important reduction in poverty level, from 55 percent in 1973 to 26 percent in 1998. Despite the extraordinary growth and development, India is still home to the largest number of poor people of the world. With about 250 million below the poverty line, India accounts for about one-fifth of the world's poor. Child malnourishment extracts its highest toll in this country. About 25 per cent children suffer from thoughtful malnutrition. More than 50 per cent of the pre-school children and pregnant women are anomic. The depth of hunger among the undernourished is also high. India has high population compression on land and other resources to meet its food and development needs. The natural resource base of land, water and bio-diversity is under severe pressure.

Despite this decline, India continues to be for the most part an agrarian rural economy, with around 69 per cent of its population existing in rural areas and around 47 per cent of the employees engaged in agriculture. Moreover, around 270 million people in India (22 per cent of India's population) live below the poverty line, of which 80 per cent reside in rural areas. Given this huge dependence of rural households on agriculture, it has become overbearing to focus on its growth in order to ensure food security and eradicate poverty in the country. Supporting this, there are several studies which have shown that related to other sectors, growth in agriculture generally has the largest effect on poverty reduction. However, India's agriculture growth in the 1990s and 2000 hovered 3 per cent, which was lower than the besieged growth rate of 4 per cent.

In developing countries such as India, spending on agriculture is one of the most important government instruments for promoting economic growth and alleviating poverty in rural areas, showed that the Green Revolution in India during the 1960 was largely due to increased government expenditure on food production R andE, irrigation, electricity and rural arrangement. Amongst various types of government disbursements for agriculture, agricultural R andE is said to be one of the most critical for promoting farm yields. In addition, several studies have shown the association of high cost-effectiveness of agricultural research investment on agriculture production.

Similar results are found in the upcoming study on the impact of public investment and subsidies on poverty improvement and agricultural growth. The effect of investment and subsidies on poverty and agricultural growth is studied empirically using a multi-equation model. As a single comparison would be insufficient in explaining the role of government expenditure on poverty and agriculture growth, a system of nine equations has been developed. The linkage of the role of government expenditure on poverty and agriculture growth has been conventional through the development of non-farm employment and rural wages.

The results of the modelling exercise reveal that the marginal returns in terms of the number of people brought out of poverty, to investments in research and education, roads, education, and irrigation outweigh the benefits from input subsidies in power, fertilizer, and irrigation. The number of people brought out of deficiency per million rupees spent on fertiliser subsidy is only 26 as matched to 328 persons for agriculture research and education if an corresponding amount is spent on this item. Similarly the return on unindustrialized GDP per rupees spent is 0.88 for fertiliser subsidy as compared to 11.2 in agricultural research and education. Contrarily, the biggest chunk of expenditure is made on top dressing subsidy, credit subsidy and safety net programs like food subsidy and MGNREGA. The expenditure on investment schemes like the Pradhan Mantri Gram Sadak Yojana, Pradhan Mantri Krishi SinchayeeYojana, Deen Dayal Upadhyaya Gram Jyoti Yojana, the Sub-Mission on Agri-Extension, and farm investigation and education continue to be

meagre. The findings of the study mentioned above clearly brings out the fact that moneys in agricultural research and education, roads and education are unmistakably the best appliances given their higher marginal returns to additional Rupee of investment as compared to input subsidies. Thus, there is a need to focus on 'development' model as an alternative of 'dole' model and focus on massive infusion of public investment.

According to the theories of public economics, the public sector can supply public goods efficiently and at satisfactory amounts as the market tends to under-provide them due to the 'non-excludable' and 'non-rivalries' nature of public-good i.e., the provider of material may not be able to exclude other potential users from accessing information. When supplied in a cost-effective way, public goods are generally expected to generate higher returns than investments in private inputs because they create positive externalities for the economy as a whole. Feder and Slade (1986) found that free markets for agricultural services do not fully satisfy farmers' information needs, and the government maintenance in provision of agricultural services is justified. As per the World Bank (1981, p8), a desirable speculation target for research for many countries with poorly developed agricultural research systems is around 2 per cent of gross domestic product from agriculture.

### FINANCIAL RESOURCES ALLOCATED FOR AGRICULTURE R ANDE AND EXTENSION AND TRAINING

In India, public funding for agriculture R and E is contributed by both central and state governments with around 55 per cent of the total allocation subsidized by the centre and 45 per cent by states. The total R andE expenditure for agriculture and allied activities in real terms (2004-05 prices) had increased from Rs 31,073 million in 2000-01 to Rs 61,552 million 2014-15, thereby recording a composite annual growth rate of 5 per cent for the period 2000-01 and 2014-15. An important element of agriculture R andE is provisioning of funds for extension services to ensure diffusion of new innovations in the field. Around 82 per cent of total extension allocation is funded by the state government and around 18 per cent is allocated by the centre. In 2014-15, India allocated around for Rs 17956 million for agriculture extension and training exclusively, which had grown from Rs 6,407 million in 2000-01 therefore recording a CAGR of 7.6 per cent for the given period.

Central Statistics Office (CSO), Ministry of Statistics and Programme Putting into practicehas released the New Series of National Accounts on 30.01.2015, revising the baseyear from 2004-05 to 2011-12. As per the first revised estimates released by CSO on 29.01.2016, the Agriculture and Allied Sector backed approximately 17.0 per cent of India's Gross Value Added(GVA) at current prices during 2014-15. Gross Value Added (GVA) of Agriculture and Associated Sector and its share in total GVA of the country during the last 3 years including the current year, at 2011-12 current prices is as follows.

**Table-1**  
**Share of Agriculture and Allied Sector in Total GVA**

S. No.	Year	GVA of Agricultural and allied Sector	Per cent to total GVA
1	2011-2012	15,01,816	18.5
2	2012-2013	16,80,797	18.2
3	2013-2014	19,02,452	18.3
4	2014-2015	19,95,251	17.4

**Source:** Central Statistics Office, Ministry of Statistics and Programme Implementation, Govt. of India.

In view of the operational change in the economy, there had been a non-stop decline in the share of agriculture and allied sector in the GVA from 18.5 per cent in 2011- 12 to 17.4 per cent in 2014-15 at contemporary prices. A fall in the share of the agriculture and allied sector in GVA is an expected outcome in a fast growing and operationally changing economy. Growth, over the earlier year, in the Total GVA and that in the GVA of Agriculture and Allied Sector at 2011-12 basic prices is given below.

**Table-2**  
**Growth in Gross Value Added (At 2011-12 basic prices)**

(In per cent)

S. No.	Year	Total GVA	Agricultural and allied Sector GVA
1	2012-2013	5.4	1.5
2	2013-2014	6.3	4.2
3	2014-2015	7.1	-0.2

**Source:** Central Statistics Office, MOSPI

The Cultivation and Allied sectors observed a growth of 1.5 per cent in 2012- 13, 4.2 per cent in 2013-14 and -0.2 per cent in 2014-15 at 2011-12 basic prices.

### Production Scenario 2014-15

Due to the deficient rainfall as well as unseasonal rains and hailstorms, agricultural production in 2014-15 was estimated to be lower than that in 2013-14, a year of record production. As per 4<sup>th</sup> Advance Estimates for 2014- 15, total creation of rice in the country was estimated at 104.80 million tonnes which was lower by 1.85 million tonnes than the production of rice during 2013-14. Production of wheat estimated at 88.94 million tonnes was also lower than its record production of 95.85 million tonnes during 2013-14. The production of Coarse Cereals was estimated at 41.75 million tonnes which was lower than the production of Coarse Cereals during 2013-14. Total food grains production during 2014-15 estimated at 252.68 million tonnes was lower by 12.36 million tonnes than the record production of 265.04 million tonnes of food-grains accomplished during 2013-14. Total production of pulses and oilseeds estimated at 17.20 million tonnes and 26.68 million tonnes respectively was also lower by 2.05 million tonnes and 6.07 million tonnes than their production levels during 2013-14. Table-3 furnished below gives the details of Area, Production and Yield of most important crops.

**Table-3**  
**Area, production and yield of major Crops**

Crops	Area (Lakh hectare)			Production Million Tonnes			Yield (Kg /Hectare)		
	2012-13	2013-14	2014-15	2012-13	2013-14	2014-15	2012-13	2013-14	2014-15
Rice	427.54	441.36	438.56	105.24	106.65	104.80	2461	2416	2390
Wheat	300.03	304.73	309.69	93.51	95.85	88.94	3117	3145	2872
Coarse cereals	247.57	252.20	241.49	40.04	43.29	41.75	1617	1717	1729
Pulses	232.56	252.13	230.98	18.34	19.25	17.20	789	764	744
Food Grains	1207.79	1250.42	1220.72	257.13	265.04	252.68	2129	2120	2070
Oil seeds	264.84	280.51	257.27	30.94	32.74	26.68	1168	1168	1037
Sugar cane	49.99	49.93	51.44	341.20	352.14	359.33	68254	70522	69857
Cotton	119.77	119.60	130.83	34.22	35.90	35.48	486	510	461
Jute and Mesta	8.63	8.38	8.08	10.93	11.69	11.45	2281	2512	2550

**Source:** \* 4th advance estimates @ Production in million bales of 170 kg each.

# Production in million bales 180 Kg. each.

### Production Scenario during Kharif 2015-16

Kharif 2015-16 also experienced poor monsoon with rainfall being 14 per cent less than LPA. As a result the 1st advanced estimate for 2015-16(Kharif) was lower than the estimates for 2014-15. A comparative position of production of Food grains, Oilseeds, Sugarcane and Cotton during Kharif 2015-16 vis-à-vis Kharif 2014-15 is furnished below in table - 4.

**Table-4**  
**Kharif production in 2014-15 and 2015-16**

Crop	2014-15 (4th Advance estimate)	2015-16 (1st Advance estimate)	Absolute difference	Percentage Increase/decrease
Food-grains	126.31	124.05	-2.26	-1.82
Oilseeds	18.33	19.89	1.56	7.84
Sugarcane	359.33	341.43	-17.90	-5.24
Cotton	35.48	33.51	-1.97	-5.88

**Source:** Directorate of Economics and Statistics, Department of Agriculture, Cooperation and Farmers Welfare.

As per 1st advance estimate for 2015-16, production of Kharif Rice, estimated at 90.61 million tonnes was marginally lower than the previous year invention, but higher than the five year average production of 86.68 million tonnes. The estimated production of Coarse Cereals was lower by 1.95 million tonnes than its production during 2014-15. Production of Kharif Pulses is also lower by 0.06 million tonnes than the production of 5.62 million tonnes completed during 2014-15.

### Development of Agriculture Sector in Andhra Pradesh

Andhra Pradesh State is “the bejewelled rice bowl of India”. Agriculture plays a significant role in the source of revenue of people as 63 per cent of the population in Andhra Pradesh live in rural areas and depend on agriculture and related livelihood opportunities. Agriculture Sector contribute 27 per cent share in State GDP. Agriculture plays an important role not only in the economy but also for accomplishing the food security for the state and also for the country. But the main challenges are, growing water scarcity, degrading natural resources like land and decreasing per capita availability of land and water resources. Further, rain-fed agriculture in the whole state and agriculture in the coastal region is very much vulnerable to the influences of natural calamities and the state is treading ahead against these challenges. The State of Andhra Pradesh with 13 districts has great potential for agriculture and allied sectors. Andhra Pradesh State consists of six agro climatic zones and five different soil types to grow wide range of crops throughout the year. The Government accords the highest priority to the agriculture sector and the welfare of farmers. The restrictions and problems which have been concerning the farmers over the years will be addressed through a systematic approach. Every effort will be to make cultivation in the state productive, profitable, and sustainable and climate resilient through building partnerships with research organizations. Government of Andhra Pradesh has designed a strategy to transform the agriculture and allied sectors to enable Andhra Pradesh amongst the best three carrying out states in India by 2022 after 75 years of independence

### Implementing the Action Plan as per the Vision 2022

The Primary Sector mission is the main mission and the following are the objectives:

- Increasing productivity of the primary sector.
- Mitigating the impact of droughts through water Management and micro irrigation.
- Increasing the harvesting intensity.

- Promotion of weather specific cropping pattern to alleviate drought situations.
- Post-harvest controlling to reduce the wastage and
- Establishment of processing, value addition capacity and supply chain of the identified crops.

### Agriculture sectors

Andhra Pradesh stood first for the second consecutive year in the country by distributing Soil Health Cards to the farmers with soil test based recommendations. State government has achieved saturation in soil testing. Through drone-based cloud technology, soil test reports are made available in real time for farmers in the state. During 1st cycle of soil health card scheme 13.48 lakh soil samples were analysed and 54.28 lakh soil health cards were distributed to the farmers. The 2<sup>nd</sup> cycle of soil health card scheme i.e., from 2017-18 and 2018-19 is under progress. The government is committed to develop Andhra Pradesh as Global seed hub and to ensure the availability of quality seed with low cost to every farm holder in the State, entered a MOU with renowned University in the USA. Government of Andhra Pradesh allotted an amount of Rs. 650 Crores to develop the Mega Seed Park in 579 acres at Tangadanancha Agriculture farm in Kurnool District. D- Krishi is a unique, simple, sustainable, secure and standard and user-friendly mobile based DBT solution accessible to farmers.

### Horticulture

Andhra Pradesh stands at 1st position in productivity for Chillies, Cocoa, Lime, Oil Palm, Papaya and Tomato, 2<sup>nd</sup> in Cashew, Mango and Sweet Orange in India. A.P. Ranks 1<sup>st</sup> in area and production of fruits and spices and 2nd in Micro Irrigation area coverage. 15.92 Lakh Ha. area is under Horticulture with production of 268.57 lakhs MTS. So far 20.60 lakh acres of land has been covered under Personal computer irrigation in all the 13 Districts in the State since commencement i.e., from 2003 to 2016. This is benefiting 6.25 lakh farmers. A.P ranks 2nd in Micro Irrigation in area coverage. Andhra Pradesh attituded second in the country in silk production. During the year 2017-18, 7500 acres of Mulberry was brought in to cultivation and 26952 MTs of CB Cocoons and 4676 MTs of BVH Cocoons were produced up to November, 2017.

### Agriculture and Allied Sectors

The noteworthy feature of the evolution configuration in Agriculture and Allied Sectors is that this key sector which is secondary about 60 per cent of the population is steadily continuing an ascending trend during the last three years, especially marked by an encouraging growth rate of 17.76 per cent in 2017-18 at Constant (2011-12) Prices with a GVA of Rs. 1, 63,635 crores – up from Rs.1, 38,957 crore during 2016-17.

### Agriculture

The sub-sector, despite a deficit rainfall of (-) 13.4 per cent during this year, remarkably bounced back from negative territory after three successive years to post a highly encouraging growth rate of 12.30 per cent. Implementation of scientific, innovative and best practices reflects the remarkable growth performance in agriculture. The agrarian state of Andhra Pradesh is heading towards a value addition platform from the predictable production approach.

### 'Horticulture

The sub-sector, accepted by the government as, is a crucial component for food and nutritional security in the State and continued its ascendancy showing an impressive growth of 17.16 Per cent, a reflection of initiatives of the government such as Scattering /Drip Irrigation, Polynets/ Shadenets, Panta Sanjeevini, Panta Raksha. These initiatives augur well for the state to realize its goal of making Rayalaseema as a Horticulture hub. It is pertinent to note that horticulture, no longer a sub-sector to agriculture sector, has crossed agriculture in terms of value addition.

### The livestock

The livestock sector has appeared as an alternative and dependable source of income generation even during the times of severe drought. Increase in the production of Milk (13.53 per cent), Meat (13.68 per cent) and Egg (12.32 per cent) resulted in an encouraging growth rate of 13.05 per cent in the livestock sector. The fodder policy and timely interventions have helped the livestock sector alone book-keeping for more than 28.96 per cent of the total Agriculture sector GVA, to bypass all the other sub sectors in the Agriculture and Allied group. Fisheries sector, which until in recent times was a non-descript sector, started showing phenomenal growth, with its involvement now matching with the agriculture sub-sector. Maintaining the uptrend, the increase in the production of Marine fish (0.49 per cent), Inland fish (21.24 per cent) and prawns/ Shrimps (40.24 per cent) led to register a important growth rate of 30.84 per cent in Fishing Sector. Forestry and Logging Sector, after a series of weak and negative growth routines, registered growth rate of 1.97 per cent in 2017-18.

### Support of Power Sector to Agriculture

- Government is particularly faithful to the welfare of farmers and supplying free power to all agriculture consumers including all the services on the loose. The Budgetary subsidy (electricity) on condition that for agriculture given by the Government during the year 2017/-18 was Rs.3300 Crores.
- During the year 2017-18, it was programmed to release 50,000 new agricultural influences. Up to 30- 11- 2017, 40,154 agricultural facilities had been released. The total agricultural services in the state as on 30- 11- 2017 were 16.97 lakhs.
- Government has put aside the power consumption arrears relating to agricultural consumers of DISCOMs and RESCOs. As per adapted policy, farmers having up to 3 connections in dry land, up to 2.5 Acres land property in wet land are eligible for free power. The modified policy proposes incentives to encourage energy saving measures.

### R-APDRP

Restructured-Accelerated Power Development and Reforms Programme (R-APDRP) is a flagship programme of Government of India which aims at achieving authentic demonstrable show in continual loss reduction. It has two parts – Part-A and part-B.

#### Part-A -I– ITS Implementation

This includes projects for establishing of baseline data and IT applications for energy accounting/auditing and IT based consumer service centres. An amount of Rs.188.26 Crores was sanctioned to cover 75 towns in the state with more than 30,000 populations (as per 2001 census) (APSPDCL covers 46 towns + APEPDCL covers 29 towns). 75 towns (46 in APSPDCL and 29 in APEPDCL) IT project works have completed and declared Gone- Live. An amount of Rs.150.37 Crores was sanctioned (Rs.83.50 Crores in APSPDCL and Rs.66.87 Crores in APEPDCL). Out of total sanctioned amount Rs.188.26 Crores has been spent so far.

#### Part-A -II– (SCADA/DMS)

The Supervisory Control and Data Acquisition/ Distribution Management System (SCADA/DMS) will provide real time monitoring and control, loss minimization/load balancing and considerable improvement in voltage/VAR profiles. It would also facilitate proper handling of loads while load shedding and restoration, efficient planning of network for future growth would be effected by using proven power system planning tools. The scheme consists of installation of Remote Terminal Units (RTU) at each 33/11 KV Sub- stations and integrating these RTUs with centralised control centre to manage distribution system of the town. The eligibility criteria of SCADA/DMS system cover urban areas – towns and cities with population of more than 4, 00,000 and 350 MUs annual input energy. Under SCADA / DMS Visakhapatnam town is covered in APEPDCL- 1, and 3 town's viz., Vijayawada, Guntur and Nellore towns are covered in APSPDCL. Rs.52.35 crores was

sanctioned by PFC for SCADA/DMS in the above 4 towns (Rs 39.19 crores in APSPDCL and Rs 13.16 crores APEPDCL).

- ❖ In APSPDCL the scheme was sanctioned in March'2011 and was scheduled to be completed by December 2017.
- ❖ In APEPDCL the Visakhapatnam Scheme was sanctioned by Steering Committee on 27.9.13 and was scheduled to be completed by March 2018.
- ❖ An amount of Rs.12.33 Crores (Rs.4.14 Crores in APSPDCL and Rs.8.19 Crores in APEPDCL) out of total sanctioned amount Rs.52.35 Crores has been spent.

## CONCLUSION

The results of the displaying implementation reveal that the border line returns in terms of the number of people brought out of poverty, to investments in research and education, roads, education, and irrigation be more imperative than the benefits from input subsidies in power, fertilizer, and irrigation. The number of people brought out of poverty per million rupees spent on top covering subsidy is only 26 as compared to 328 persons for agriculture research and education if an equivalent amount is spent on this item. Similarly the return on agricultural GDP per rupees spent is 0.88 for fertiliser subsidy as compared to 11.2 in agricultural research and education. Contrarily, the biggest chunk of expenditure is made on fertiliser subsidy, credit subsidy and safety net programs like food subsidy and MGNREGA. The sector has emerged as an alternative and responsible source of income generation even during the times of severe drought. Increase in the production of Milk (13.53 per cent), Meat (13.68 per cent) and Egg (12.32 per cent) resulted in a promising growth rate of 13.05 per cent in the livestock sector. The fodder policy and timely interventions have helped the livestock sector, alone accounting for more than 28.96 per cent of the total Agriculture sector GVA, to bypass all the other sub sectors in the Agricultural and Allied group. Fisheries sector, which until recently was a non-descript sector, started showing extraordinary growth, with its involvement now matching with the agriculture sub-sector.

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