

# Agricultural Growth of Southern States in India: A Ringside View

Dr. P. Arunachalam<sup>1</sup> and Dr. M. Elangovan<sup>2</sup>

## Abstract

*Indian economy generally faces several resources constraints in various levels particularly in agriculture. The Indian topography supports the agriculture by plenty of the perennial rivers. In spite of it we find two-third of cultivated land in India is still depending on vagaries monsoons. India's annual average rainfall is 650mm. The total rainfall received by India was about 1093.2mm in the year 2015 and particularly in southern peninsula received 201.7mm.*

*Irrigation on the other hand helps the agriculture by reducing dependence on monsoon and also improves the agricultural productivity and food security in India. It is a network of major and minor canals from rivers, groundwater system, tanks, and other water harvesting projects. According to Agricultural Census 2010-11, India's total level area under irrigation is 67 million hectares. Of this maximum 45 per cent is shared by tube wells followed by canal and well irrigations.*

*The current debate on linking of rivers is expected to pave way to solve irrigation problems in Indian Agriculture. Nevertheless, the agriculture still more is questionable in Indian scenario. Therefore this study seeks to analyze the performance of agriculture in terms of growth in major crop production in the southern states of India particularly Andhra Pradesh, Karnataka, Kerala, and Tamil Nadu during the last decade. This study relies on the secondary sources of data from the handbooks of statistics of RBI.*

*This research finds that the highly volatile in nature of crop production during the study period and the major reason behind that is the gambling of monsoon. Therefore the researcher has suggested the future directions of Indian agriculture will largely depend on the domestic agricultural policy. The agricultural policy seeks to actualize the vast untapped growth and potential of Indian agriculture strength in rural infrastructure to support faster agricultural development.*

---

<sup>1</sup> **Dr. P. Arunachalam**, Assistant Professor, Dept. of Economics, Jaya college of Arts and Science, Thiruninravur- 602 024. [kparunachalam06@gmail.com](mailto:kparunachalam06@gmail.com) 9025993877

<sup>2</sup> **Dr. M. Elangovan**, Assistant Professor, P.G. & Research Dept. of Economics, Erode Arts and Science College, Rangampalayam, Erode.

## Introduction

Agriculture plays a vital role in Indian economic development. It still provides livelihood support to half of the country's population and is the single largest occupation in unorganized sector. The well-being of the people closely related to production on the farm. It is one of the largest contributors to the country's Gross Domestic Product (GDP), in spite of decline in its share in the GDP at current price from 51.8 per cent in 1950-51 to 17.3 per cent in 2016-17 (Planning Commission, 2017). Therefore, there are no significant changes in the proportion of workforce depending on agriculture. It is the largest user of land and water, to maintain the ecological balance. There is a need for sustainable and balanced development of agriculture as sustainability of economic growth of our country however will critically depend on sustainability of agricultural growth. It accounts for fifteen per cent of the total export earnings and also provides raw material to the largest number of industries.

The agriculture sector in India is undergoing major structural changes in the recent years, the followings are ( i ) the share of allied sectors in agriculture; mainly dairying, fisheries and poultry are becoming more important. In fact, the share of livestock products in gross value of agricultural product is progressively increasing and (ii) the changes in the pattern of landholdings; it reveals that the landholding is dominated by the marginal and small holdings. The latest available figures suggest that nearly thirty six per cent of agriculture land in the country is now owned by the small and marginal farmers, whose shares account for nineteen per cent and seventeen per cent, respectively. Further, the land cultivated in the small and marginal holdings is progressively increasing. While the land owned and cultivated by the medium holdings has remained stable, the land owned and cultivated by the larger owners is progressively declining. These changes in agrarian structure are the outcome of institutional, technological and demographic factors.

Apart from shift in importance of allied sectors in the recent years, there is also a shift in the crop composition. There are three major changes have taken place in the crop composition, since Independence. In the first place, the share of non-food crops has increased in terms of area cultivated. Second noteworthy development is some crops like sugarcane, oil seeds, spices and condiments, fruits and vegetables, etc., are acquiring greater importance. The third

important change is that the share of superior cereals like rice and wheat in the total food grains production has been increasing.

The growth performance of agriculture at the national level was splendid during the 1980s and its deceleration during the 1990s was attributed to the reduction in and stagnation of public expenditure on agricultural infrastructure, defunct extension services and biased economic reforms (Mahendradev (2000), Rao, C H Hanumantha (2003), etc.). Under these circumstances, higher growth in agriculture assumes great importance and is a matter of concern for policy planners and research scholars in recent times (Reddy and Mishra, 2009; Vaidyanathan, 2010). In this circumstance, the present study analyzes the trend of crop production in southern states.

### **Statement of the problem**

Even though, the southern states are financially sound in the state income (GSDP), the support on the development of agriculture and other relevant activities are inadequate. The efforts on the development in the area of crop production occupy a significant place towards realizing the spirit of the state policies, even though this area still faces production constraints. In the above scenario the present study analyzes the trend and growth of production of food and major non-food crops in southern state governments, viz., Andhra Pradesh, Karnataka, Kerala and Tamil Nadu covering period between 2007-08 and 2016-17.

### **Objective of the Study**

The three major objectives of the present study are as follows:

- To analyze the trend in crop production in southern states during 2007-08 to 2016-17,
- To reckon the growth and composition of crop production in the southern states and
- To suggest the improvement in the existing practices of agriculture growth and development of southern states in India.

### **Sources of Data & Methodology**

The study relies on the secondary data available in the report on Annual handbook of statistics published by Reserve Bank of India, Annual handbook of statistics of state governments, Central Statistical Office, National Sample Survey Organization and Ministry of Agriculture, Government of India etc. In order to study the trends in the crop production of southern states, the tools such as averages, ratios and growth rates have been used.

## Economic profile of southern states

The economic growth rates of southern states have experienced consistently exceeded country's average growth rate after 1970. The growth rates of southern states were noted by some, to be more reform oriented in terms of economic policy when compared to other Indian states. Over the last decade the GDP of southern states have grown eight per cent annually.

In the southern regions, over forty eight per cent of population is engaged in agriculture, the states are largely dependent on seasonal monsoons for their cultivations. Some of the main crops cultivated in southern states include paddy, sorghum, pulses, sugarcane, cotton, chilli, ragi. The crops like coffee, tea, vanilla, rubber, pepper, tapioca and cardamom are cultivated on the hills, while coconut is grown in abundance in coastal areas.

### The growth and development of Agricultural Production in Southern States

In the present study, an attempt has been made to study the trend in the agricultural production of southern states during 2007-08 to 2016-17. Particular focus has been made towards the analysis of annual growth rate of production of different crops in southern states and relation with in the growth rate of production at all India level. While analyzing the trend in the crop production, we can broadly understand about the development and performance of food and non-food crop production.

The agricultural production of four southern states consists of food crops and non-food crops. Food crops comprise of rice, wheat, coarse cereals and pulses, while non-food crops include oilseeds, coffee, cotton, raw jute and mesta. Oilseeds data comprise groundnut, sesamum, nigerseed, rapeseed and mustard, linseed, safflower, sunflower and soyabean. Cotton data measured in thousands bales of 170kg each, jute and mesta measured in thousand bales of 180 kg each.

**Table 3.1: Annual Average Growth Rate of Rice in Southern States (2007 – 2017)**  
(In Per cent)

Year	Andhra Pradesh	Karnataka	Kerala	Tamil Nadu	All India
2007-08	12	7.9	-16.2	-23.8	3.6
2008-09	6.9	2.3	11.7	2.8	2.6
2009-10	-26.0	-2.9	1.4	9.3	-10.2
2010-11	36.8	13.5	-12.6	2.2	7.7
2011-12	-10.6	-5.6	8.9	28.8	9.7
2012-13	-10.7	-14.9	-10.7	-45.7	-0.1
2013-14	10.6	6.2	0.2	32.1	1.3
2014-15	-9.1	2.5	9.6	9.1	-1.7
2015-16	-35.2	-17.5	-1.6	28.7	-0.4
2016-17	-0.5	-16.0	-18.4	-46.3	5.5
Annual Average	-2.6	-2.5	-2.8	-0.3	1.8

Source: <https://m.rbi.org.in>

Table 3.1 envisages that annual average growth rate of rice production in southern states selected for the study, it was found that all the states in the southern regions showed negative growth rate as compared to all India performance of rice production during the study period. Among the states, the state of Tamil Nadu has lowest negative annual average growth rate of rice production, it was 0.3 per cent, followed by states of Karnataka 2.5 per cent, Andhra Pradesh 2.6 per cent and Kerala 2.8 per cent. During the study period the state of Tamil Nadu showed a highest negative growth rate of 45.7 per cent and 46.3 per cent in 2012-13 and 2016-17 respectively any other states selected for the study. The study further revealed that the negative growth rate of four southern states occurred due to the lack of irrigation facilities in these regions as compared to any other states in India.

**Table 3.2: Annual Average Growth Rate of Coarse Cereals in Southern States (2007 – 2017)**

(In Per cent)

Year	Andhra Pradesh	Karnataka	Kerala	Tamil Nadu	All India
2007-08	42.4	37.3	154.5	-0.4	20.1
2008-09	10.3	-9.9	-39.3	29.3	-1.7
2009-10	-29.6	-5.7	29.4	-6.4	-16.2
2010-11	33.9	33.1	-36.4	-5.2	29.4
2011-12	-4.9	-13.2	-57.1	49.3	-3.1
2012-13	30.6	-11.0	-50.0	-42.6	-4.8
2013-14	-2.4	12.6	0	111.5	8.1
2014-15	-12.4	-2.1	0	5.5	-3.6
2015-16	-59.4	-16.1	0	14.5	-7.7
2016-17	1.6	-6.9	-33.3	-48.8	14.7
Annual Average	1.0	1.8	-3.2	10.7	3.5

Source: <https://m.rbi.org.in>

Another major food crop, coarse cereals and its production in southern states presented in the Table 3.2. All the southern states except Kerala showed a positive annual average growth rate, it was 10.7 per cent in Tamil Nadu, 1.8 per cent in Karnataka, 1 per cent in Andhra Pradesh and whereas, all India it was 3.5 per cent during the study period. Of the southern states with positive growth rate Tamil Nadu had registered a higher annual average growth rate than national annual average growth. Even though, the state of Kerala was a highest growth rate of 154.5 per cent in 2007-08, but it showed negative rate of 3.2 per cent over the study period. It also further revealed that in the state of Kerala had witnessed no changes in the growth rate in the years 2013 -14, 2014-15 and 2015-16.

**Table 3.3: Annual Average Growth Rate of Pulses in Southern States (2007 – 2017)**

(In Per cent)

Year	Andhra Pradesh	Karnataka	Kerala	Tamil Nadu	All India
2007-08	26.0	41.7	0	-36.3	4.0
2008-09	-14.7	-23.2	-25.0	-11.1	-1.3
2009-10	-1.3	15.0	63.5	24.1	0.7
2010-11	0.8	40.0	-70.9	20.5	24.4
2011-12	-14.6	-27.5	-16.7	50.1	-6.3
2012-13	32.0	11.0	28.0	-43.2	7.3

2013-14	-4.4	27.1	-12.5	192.4	5.0
2014-15	-25.5	-7.0	-50.0	5.4	-10.7
2015-16	6.3	-23.5	207.1	-14.3	-4.9
2016-17	-21.0	50.6	-60.5	-20.9	40.4
Annual Average	-1.6	10.4	6.3	16.7	5.8

Source: <https://m.rbi.org.in>

Among the southern states, the state of Tamil Nadu was a highest annual average growth rate of pulse production with 16.7 per cent comparing other states selected for the study during the period. It was 6.3 per cent in Kerala and 10.4 per cent in Tamil Nadu. But the state of Andhra Pradesh showed a negative annual average growth rate with 1.6 per cent during the study period. The state of Karnataka showed a highest growth of 207.1 per cent in the year 2015-16, and the state of Kerala showed a negative growth rate of 60.5 per cent in 2016-17 any other states selected for the study. It can be seen from the Table 3.3.

**Table 3.4: Annual Average Growth Rate of Food-grains in Southern States (2007 – 2017)**  
(In Per cent)

Year	Andhra Pradesh	Karnataka	Kerala	Tamil Nadu	All India
2007-08	18.9	27.0	-15.7	-20.3	6.2
2008-09	5.8	-7.5	10.9	7.9	1.6
2009-10	-25.1	-2.8	2.1	5.8	-7.0
2010-11	32.8	26.7	-13.7	1.1	12.1
2011-12	-9.6	-12.8	8.5	33.7	6.1
2012-13	1.6	-10.2	-10.5	-44.9	-0.8
2013-14	5.4	12.4	0.1	57.0	3.1
2014-15	-11.3	-1.3	9.3	7.7	-4.7
2015-16	-39.0	-17.6	-1.1	21.3	-51.2
2016-17	-2.5	-2.9	-18.7	-45.8	123.7
Annual Average	-2.3	1.1	-2.9	2.3	8.9

Source: <https://m.rbi.org.in>

Table 3.4 reveals that the states of Tamil Nadu and Karnataka showed a positive annual average growth rate of 2.3 per cent and 1.1 per cent of food-grains production during the analysis period, whereas the states of Kerala and Andhra Pradesh showed a negative growth rate of 2.9 per cent and 2.3 per cent respectively the same period. But in all India the annual average growth rate of food-grains secured positive of 8.9 per cent and also highest growth rate of 123.7 per cent in 2016-17. Among the southern states the state of Tamil Nadu showed a highest growth rate of 57 per cent in 2013-14 during the study period. The researcher found that all major states in the southern region selected for the study tend to be lower production in the area of food-grains than all India.

**Table 3.5: Annual Average Growth Rate of Oilseeds in Southern States (2007 – 2017)**  
(In Per cent)

Year	Andhra Pradesh	Karnataka	Kerala	Tamil Nadu	All India
2007-08	148.9	37.7	-25	5.8	22.5
2008-09	-35.4	-21.8	-33.3	-9.0	-6.8
2009-10	-31.5	-17.1	-25.0	-9.9	-10.2
2010-11	33.0	26.4	75.0	-0.7	30.5
2011-12	-36.6	-25.8	14.3	19.4	-8.3
2012-13	30.6	-2.4	-54.2	-26.6	3.8
2013-14	14.2	26.4	-9.1	18.0	5.8
2014-15	-35.3	-9.5	-30.0	-0.3	-18.5



2015-16	-28.4	-28.7	0.0	-3.0	-5.3
2016-17	-11.0	5.5	-14.3	-33.7	27.1
Annual Average	4.8	-0.9	-10.2	-4.0	4.1

Source: <https://m.rbi.org.in>

It is inferred from Table 3.5 that all southern region except Andhra Pradesh showed a negative annual average growth rate in the production of oilseeds. It was 10.2 per cent in Kerala, Tamil Nadu was 4.0 per cent and Karnataka was 0.9 per cent. The state of Andhra Pradesh showed a positive growth rate with 4.8 per cent. Most significantly, it has been noted that state of Andhra Pradesh showed a highest annual average growth rate of oil seeds production when compared southern states and all India production of oilseeds. Among the southern states the state of Andhra Pradesh showed highest growth rate of 148.9 per cent in 2007-08 and the state of Kerala showed a highest negative growth rate of 54.2 per cent in the year 2012-13 during the study period.

**Table 3.6: Annual Average Growth Rate of Sugar-Cane in Southern States (2007 – 2017)**

(In Per cent)

Year	Andhra Pradesh	Karnataka	Kerala	Tamil Nadu	All India
2007-08	-6.4	-8.5	-50.5	-7.4	-2.1
2008-09	-24.2	-11.1	26.4	-13.8	-18.1
2009-10	-23.9	30.5	3.4	-9.3	2.6
2010-11	27.8	30.3	-4.6	15.1	17.1
2011-12	11.5	-2.1	-3.2	12.6	5.4
2012-13	-6.7	-7.9	-37.0	-12.1	-5.5
2013-14	-1.2	6.1	33.7	-4.3	3.2
2014-15	-14.5	10.5	-32.0	-24.6	2.0
2015-16	-28.9	-9.7	-8.4	4.2	-3.0
2016-17	-16.0	-37.8	1.7	-32.5	-12.0
Annual Average	-8.3	0	-7.0	-7.2	-1.0

Source: <https://m.rbi.org.in>

It can be seen from the table 3.6, all states in the southern region except Karnataka showed a negative annual growth rate in the production of sugar cane while the state of Karnataka was neutral. But it was highly fluctuated between the years during the study period. Within the negative annual growth rates, the state of Tamil Nadu stood highest negative growth rate of 8.3 per cent among the southern states and all India. Kerala showed a highest negative growth rate of 50.5 per cent in 2007-08 and a positive growth rate of 33.7 per cent in 2013-14 during the period selected for the study.

### Conclusion and Suggestion:

The present study reveals that all the states in the southern regions showed a negative annual average growth rate as compared to all India performance of rice production during the study period. Among the southern states, the state of Tamil Nadu, it was a lowest negative growth rate of rice production. Further, the study finds that the production of coarse cereals (10.7 per cent) and pulses (16.7 per cent) showed a highest annual average growth rate in Tamil Nadu than any other states selected for study in the southern regions

during study period. In the production of oilseeds, the state of Andhra Pradesh alone showed a positive annual average growth rate of 4.8 per cent during the study period. The state of Karnataka was a neutral in the production of sugar-cane and it was highly fluctuating during the study period.

This research finds that the highly volatile in nature of crop production during the study period and the major reason behind that in the gambling of monsoon. Therefore the researcher has suggested the future directions of Indian agriculture will largely depend on the domestic agriculture policy level. The agricultural policy seeks to actualize the vast untapped growth and potential of Indian agriculture strength in rural infrastructure to support faster agricultural development in the recent years.

## References

1. **Planning commission, Government of India, Report 2017.**
2. Kaushik Basu, "The Oxford Companion to Economics in India", **Oxford University Press**, New Delhi, 2007, p.316.
3. Chinnappa Reddy, Dana Hooag, B.V., and Shobha, B.S., "Economic Incentives for Soil Conservation in India", **International Soil Conservation Organization**, Brisbane, Conference Volume, July 2004, pp.105-110.
4. Krishnakumari A. and Swaminathan, E. "Changing Farming Scene in Nellore District, India", **Indian Geographical Journal**, Vol. No: 65(2), 1992, pp.126-129.
5. Mahendradev, S (1987) Growth and Instability in Foodgrains Production: An Inter-State Analysis. **Economic and Political Weekly**, 22 (39): A82-A92.
6. Mahesh, R. "Causes and Consequences of Change in Cropping Pattern: A Location – Specific Study", Kerala Research Programme on Local Level Development , **Centre for Development Studies**, Discussion Paper 11, Thiruvananthapuram, 1999, pp.56.
7. Mohana Rao, L.K. Presidential Address on "Organic Farming in India Problems and Prospects", 96<sup>th</sup> Annual Conference of **Indian Economic Association**, held at Meenakshi University, Kanchipuram, Tamil Nadu, during 27-29, December 2013, p.1
8. Narayanamoorthy A. and Deshpande, R.S. "Profitability in Crops Cultivation in India: Evidence from Cost of Cultivation Survey Data", **Indian Journal of Agricultural Economics**, Vol.No: 68(1), January – March, 2013, pp.104 – 119.
9. Rao, C H Hanumantha (2003) Reform Agenda for Agriculture, **Economic and Political Weekly**, 33 (29)
10. Reddy, D Narasimha and Srijit Mishra (2009). Agriculture in the Reforms Regime, New Delhi: **Oxford University Press**.
11. Vaidyanathan A (2010). Agricultural Growth in India, Role of Technology, Incentives, and Institutions. New Delhi: **Oxford University Press**.



**Annexure****I. The production of Rice, Coarse & Cereals, Pulses and Total Food Grain of four southern states during 2006-07 and 2016-17.**

(In Thousand Tonnes)

Year	Rice					Coarse & Cereals					Pulses					Total Food Grain				
	AP	KA	KE	TN	AI	AP	KA	KE	TN	AI	AP	KA	KE	TN	AI	AP	KA	KE	TN	AI
2006-07	11872.0	3446.0	631.0	6610.6	93355.3	3001.0	5055.0	1.1	1361.9	33922.6	1347.0	893.0	8.4	290.5	14197.5	16229.0	9599.0	640.5	8263.0	217282.1
2007-08	13324.0	3717.0	528.5	5040.2	96692.9	4274.0	6943.0	2.8	1357.1	40750.4	1697.0	1265.0	8.4	185.0	14761.5	19303.0	12186.0	539.7	6582.3	230775.0
2008-09	14241.0	3802.0	590.3	5182.7	99182.5	4716.0	6254.0	1.7	1755.1	40037.9	1448.0	972.0	6.3	164.5	14566.4	20421.0	11275.0	598.3	7102.3	234466.2
2009-10	10538.0	3691.0	598.3	5665.2	89092.9	3318.0	5895.0	2.2	1642.0	33549.1	1429.0	1118.0	10.3	204.1	14661.8	15295.0	10955.0	610.8	7511.4	218107.4
2010-11	14418.0	4188.0	522.7	5792.4	95979.8	4444.0	7845.3	1.4	1556.5	43397.1	1440.0	1565.0	3.0	246.9	18240.9	20315.0	13877.3	527.1	7594.9	244491.8
2011-12	12895.0	3955.0	569.0	7458.7	105310.9	4227.1	6813.0	0.6	2323.8	42041.3	1230.0	1134.1	2.5	369.3	17088.9	18363.1	12095.1	572.1	10151.8	259323.2
2012-13	11510.0	3364.0	508.3	4049.9	105231.6	5519.5	6061.0	0.3	1333.0	40044.2	1623.0	1259.3	3.2	209.9	18342.5	18662.5	10863.3	511.8	5592.8	257124.7
2013-14	12724.7	3572.6	509.2	5349.8	106645.5	5385.4	6825.8	0.3	2819.7	43294.9	1551.0	1600.5	2.8	613.8	19252.9	19665.9	12208.9	512.4	8783.2	265043.2
2014-15	11565.4	3663.7	558.3	5839.0	104798.5	4715.6	6681.3	0.3	2974.0	41748.4	1155.9	1488.0	1.4	647.2	17191.3	17443.0	12048.0	560.0	9460.2	252676.5
2015-16	7488.7	3021.0	549.3	7517.1	104408.2	1916.0	5608.2	0.3	3406.6	38522.6	1229.0	1138.8	4.3	554.8	16348.7	10633.7	9924.0	553.8	11478.5	123218.3
2016-17	7449.0	2536.8	448.4	4037.9	110152.2	1946.0	5219.1	0.2	1745.1	44191.7	971.0	1715.2	1.7	438.9	22954.3	10366.0	9639.1	450.3	6221.9	275682.4

Source: <https://m.rbi.org.in>

Note: AP-Andhra Pradesh, KA-Karnataka, KE-Kerala and TN-Tamil Nadu.

**II. The production of Oilseeds and Sugar-cane four southern states during 2006-07 and 2016-17**

(In Thousand Tonnes)

Year	Oilseeds					Sugar-cane				
	AP	KA	KE	TN	AI	AP	KA	KE	TN	AI
2006-07	1362.0	1125.0	3.2	1083.5	24289.4	21692.0	28669.7	440.0	41124.0	355519.7
2007-08	3390.0	1549.0	2.4	1146.7	29755.3	20296.0	26240.0	218.0	38071.0	348187.9
2008-09	2189.1	1212.0	1.6	1043.0	27719.0	15380.0	23328.0	275.5	32804.4	285029.3
2009-10	1500.0	1005.0	1.2	939.6	24881.6	11708.0	30443.0	285.0	29745.6	292301.6
2010-11	1995.6	1270.0	2.1	933.1	32479.0	14964.0	39657.0	271.8	34251.8	342381.6
2011-12	1264.7	942.0	2.4	1113.7	29798.7	16686.0	38808.0	263.0	38575.7	360983.4
2012-13	1651.1	919.6	1.1	816.9	30939.7	15567.0	35732.0	165.7	33919.2	341199.7
2013-14	1885.6	1162.0	1.0	964.2	32749.4	15385.0	37905.0	221.5	32454.1	352141.8
2014-15	1220.0	1052.0	0.7	961.1	26674.8	13150.0	41895.0	150.7	24462.8	359330.1
2015-16	873.0	749.7	0.7	932.2	25250.8	9353.0	37833.8	138.1	25494.1	348448.4
2016-17	777.4	791.2	0.6	617.8	32097.0	7854.0	23541.0	140.4	17217.9	306720.5

Source: <https://m.rbi.org.in>

Note: AP-Andhra Pradesh, KA-Karnataka, KE-Kerala and TN-Tamil Nadu.