CHANGES IN THE LEVELS OF INPUT USE AND OUTPUT OF MAJOR CROPS KONASEEMA IN EAST GODAVARI DISTRICT.

Dr. J.Nehru Naik
M. A., B.Ed., B.sp.Ed., Ph.D., D.Litt.
Lecturer in Economics
Government Degree College
Mandapeta
Dr.B.R.Ambedakar Konaseema District.
Andhra Pradesh, India

Abstract:

Indian Agriculture has a tremendous history. It moved from net importer of food grains to self reliance. In this journey, India has adopted several policies through the institutional and the technological interventions to drive the agricultural sector. Though the growth of agriculture in the initial years is very low, the adoption of High Yielding Variety (HYV) technology helped to achieve a significant growth during the Green Revolution period. In the post Green Revolution period the growth rate is sustained and recorded more than 3 percent per annum .Agriculture is the mainstay of the Indian Economy as it provides employment and livelihood to a majority of the population. The share of agriculture in the GDP has registered a steady decline during the last six decades. It almost declined from 55 percent in 1950-51 to about 15 percent in 2012-13. But the dependence of population on agriculture sector has not declined on par with the decline in share of agriculture in GDP in India. Thus, sustainable agriculture is very essential as Indian economy still heavily depending on agricultural sector. Despite several efforts for industrialization and a quantum jump of Indian economy in the service sector still 54.6 percent of total work force in India is depending on agriculture for their livelihood

Key words: GDP,Kharif Paddy ,crops,input

\

1 Introduction

In this analyze the changes in the level of input use and output per hectare of different crops in the study area during the last 30 years by considering three different periods of time i.e., 1980-81, 1993-94 and 2009-10. In order to compare the level of inputuse and output, data collected for the Socio and Agro - Economic Survey of Godavari Delta Region, conducted in 1980-81 by the Department of Economics, Andhra University; Visakhapatnam has been considered for the purpose of benchmark Study. Data have also collected for this analysis from an unpublished M.Phil Dissertation of the Researcher "Analysis of Costs and Returns in Agriculture"- A Study in Konassema Region of East Godavari District of Andhra Pradesh, for 1993-94.The present data are compared with the earlier data. This analysis is carried out for all the important crops as well as for all crops put together for Kharif Paddy, Rabi Paddy, Pulses, Coconut, Banana and Sugarcane.

Objectives of the Study:

The main objectives of the study

1. To analyze the changes in levels of input use and output of major crops in the Study area:

2. To analyze the cost of cultivation and farm business income of major crop in the study area and

3. To suggest measures to improve and to sustain the growth of agriculture in the study Area.

Methodology:

Research methodology is the procedural frame work within which the research is conducted. In general, research methodology describes the overall shape and design of this study and the entire data collection process. The source of data and the analysis of techniques chosen are discussed in detail.

\

Limitations of the Study:

The study confined to Konaseema Region of East Godavari District in Andhra Pradesh and with limited selective respondents. This is because the researcher is interested in re-survey of the same villages. Hence, it may be difficult to generalize the results of the study to Indian Agriculture.

REVIEW OF EARLIER RESEARCH

Shyamal Roy. (1971), study highlighted the impact of Green Revolution and plan wise improvement of agriculture in India. The Study further revealed that net profit per acre of paddy was lower than Wheat due to slower spread of area under High Yielding Varieties of Paddy.

Pranab, K. Bardhan., (1973),[i] study revealed the inverse relationship between farm size and output per acre. Further, observed existence of constant returns to scale in Wheat and diminishing returns to scale in Paddy.

Townsend, R.F. and et. al., (1998) [ii] study reveals that inverse relationship between farm size and productivity has almost become a 'stylized fact' in the literature.

1. Level of Input-Use and Output per Hectare of Kharif Paddy

Data relating to level of input use and output per hectare of Kharif Paddy for the periods 1980-81, 1993-94 and 2009-10 are presented in Table

It can be seen from the Table that the average level of input use and output per hectare in 2009-10 is significantly higher than the level of input use and output per hectare during 1980-81 and 1993-94. The inputs selected for the purpose of comparison are physical quantities of seed, organic and inorganic fertilizers, family and hired human labour, bullock labour and machine labour.

The average use of seed has continuously increased from 72 kgs in 1980-81 to 82 kgs in 1993-94 and further to 89 kgs in 2009-10. The use of seeds has increased by

\

about 14 percent in 1993-94 and to 23 percent in 2009-10 when compare to the use of seed in 1980-81.

Use of organic fertilizers (N+P+K) has increased from 39 kgs in 1980-81 to 53 kgs in 1993-94 and further to 181 kgs in 2009-10, showing that the application of organic manure has increased by 36% in 1993-94 and further to 360% in 2009-10 when compared to the application in 1980-81.

The same trend can be observed in different size groups of operational holding except in the Ha.4.01and above size group. In this size group, application of organic manure has increased over the period of time in the study area but the increase is less compared to the increment in other size groups.

\

TABLE: 1.1 Comparison of Input-Output Relationship per Hectare of Kharif Paddy

S. NO	size group (in heaters)/ item/year	Seed (in kgs)			Organic fertilizers kgs			Inorganic fertilizers kgs			Total fertilizers kgs			Family labour (8 hrs mandays)		
		1980-81	1993-94	2009-10	1980-81	1993-94	2009-10	1980-81	1993-94	2009-10	1980-81	1993-94	2009-10	1980-81	1993-94	2009-10
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	0.50 & below	83.01	93.66	93.27	52.03	59.82	135.57	46.73	161.00	386.89	98.76	220.82	522.46	28.00	41.90	37.81
2	0.51-1.00	80.07	80.16	96.55	65.84	73.21	370.11	88.12	138.80	314.28	153.56	212.01	684.39	18.07	12.14	21.15
3	1.01-2.00	61.25	81.23	95.93	39.88	54.21	168.60	51.67	125.10	356.67	91.55	179.30	525.27	10.84	12.10	11.77
4	2.01-4.00	69.50	79.03	85.20	35.10	46.54	188.18	75.88	111.63	393.45	100.98	158.18	581.63	2.72	3.07	6.31
5	4.01 & Above	75.85	80.10	75.59	34.95	40.43	43.97	100.13	171.74	225.53	135.08	212.17	269.50	11.59	2.75	2.66
	TOTAL / AVERAGE	72.29	82.26 (13.83)	89.30 (23.53)	39.32 ----	53.50 (36.06)	181.28 (361.03)	83.32	145.04 (74.07)	335.04 (302.11)	122.64	197.54 (61.07)	516.32 (321.00)	11.33	12.15	15.94

Source: 1. Field survey in 2009-10

2. M. Bala Swamy, "Analysis of Costs and Returns in Agriculture; A study in
   Konaseema Region of E.G.Dt., Unpublished M. Phil. Dissertation submitted to A.U, 1995.

3. K.V. Ramana & P.V. Sarma, Report on Socio-Agro Economic Survey of Godavari
   Delta Region, Dept of Economics, A.U (mimeo), 1984.

(Continued table 1.1)

S. NO	size group (in hectares) /item/year	Hired labour (8 hrs mandays)			Total labour (8 hrs mandays)			Bullock labour (8 hrs days)			Machine labour days			Total out put (in kgs)		
		1980-81	1993-94	2009-10	1980-81	1993-94	2009-10	1980-81	1993-94	2009-10	1980-81	1993-94	2009-10	1980-81	1993-94	2009-10
		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	0.50 & below	130.28	140.22	151.68	158.28	182.12	189.49	8.50	1.84	0.64	-	1.22	2.74	3006.54	5576	5252
2	0.51 – 1.00	109.63	138.81	171.26	127.70	150.95	192.41	7.94	0.95	-	-	1.26	3.33	3078.55	5890	5637
3	1.01 – 2.00	116.67	127.20	170.63	127.50	139.30	182.40	3.70	0.63	-	-	1.00	2.67	2770.94	4921	5156
4	2.01 – 4.00	136.29	128.31	140.24	139.01	131.38	146.55	1.79	-	-	-	0.91	1.47	3210.45	6120	5192
5	4.01 & above	121.51	173.87	112.69	133.10	176.62	115.35	3.93	-	-	-	1.14	0.82	2685.01	5904	5187
	TOTAL	123.09	146.17 (18.62)	149.30 (21.29)	134.42	158.3 (17.00)	165.24 (22.92)	3.90	0.55	0.64	-	1.10	2.21	2849.57	5764 (102.27)	5284

The use of inorganic fertilizers (N+P+K) per hectare has increased from 83 kgs in 1980-81 to 145 kgs in 1993-94 and further to 335 kgs in 2009-10. It is noticed that the use of inorganic fertilizers has been increased by about 74 percent in 1993-94 to 302 percent in 2009-10 than the use of inorganic fertilizers in 1980-81 in the study area. More or less the same trend can be observed across different size groups in the Study area.

The total fertilizer use per hectare has increased from 122 kgs for Kharif Paddy in 1980-81 to 198kgs in 1993-94 and further to 516 kgs in 2009-10. This increment is about 61 percent in 1993-94 and 321 percent in 2009-10 than the use of total fertilizer in 1980-81. Thus, fertilizer-use for Kharif Paddy has increased significantly in study area during the period under consideration.

1.2 Level of Input-Use and Output per Hectare of Rabi Paddy

Data relating to level of input use and output per hectare of Rabi Paddy for the periods of 1980-81, 1993-94 and 2009-10 is presented in Table 6.2. It is observed from Table that the use of seed has increased from 68 kgs in 1980-81 to 92 kgs in 1993-94 and further to 100.46 kgs in 2009-10, which is 35 percent more in 1993-94 and 48 percent more in 2009-10 than the use of seed in 1980-81.

The total fertilizer consumption per hectare of Rabi Paddy has increased from 198 kgs in 1980-81 to 241 kgs in 1993-94 and further increased to 382 kgs in 2009-10, the increment is about 22 percent more in 1993-94 and 93 percent more in 2009-10 than the use of fertilizer in 1980-81.

\

The total human labour employment per hectare in 1993-94 is increased by one percent and it is more than the employment of human labour in 1980-81, but it is 55 percent more in 2009-10 than that in 1980-81. A similar trend is recognized in case of family labour and hired labour in 1993-94 and 2009-10, compared to 1980-81. The use of hired human labour in 1993-94 decreased by about 2.8 percent than in 2009-10, the hired human labour has increased by about 32 percent when compared to 1980-81.

\

Table: 1.2 Comparison of Input-Output Relationship per Hectare of Rabi Paddy

SNO	size group (in heaters) item /year	Seed (in kgs)			Organic fertilizers (n+p+k) kgs			Inorganic fertilizers (n+p+k) kgs			Total fertilizers (n+p+k) kgs			Family labour (8 hrs mandays)		
		1980-81	1993-94	2009-10	1980-81	1993-94	2009-10	1980-81	1993-94	2009-10	1980-81	1993-94	2009-10	1980-81	1993-94	2009-10
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	0.50 & below	83.08	95.10	101.74	22.42	-	-	167.18	277.14	485.02	183.60	277.14	485.02	25.93	44.74	44.88
2	0.51-1.00	81.70	81.52	113.77	17.76	-	-	207.20	261.77	414.51	224.96	261.77	414.51	18.84	10.73	23.05
3	1.01-2.00	72.83	84.83	110.15	12.94	-	-	175.12	230.32	362.18	188.06	230.32	362.18	7.97	11.55	14.47
4	2.01-4.00	76.21	92.20	79.80	1.07	-	-	216.65	212.30	373.76	217.22	212.30	373.76	0.91	3.30	7.60
5	4.01 & above	57.03	98.39	96.77	8.87	-	-	182.14	235.69	274.11	191.01	235.69	274.11	2.51	2.90	2.74
	TOTAL	67.76	91.77 (35.43)	100.46 (48.25)	10.19	-	-	187.70	241.32	382.07	197.89	241.32 (21.95)	382.07 (93.07)	6.70	12.40	18.54

Source: Same as earlier Table- 6.1
.

(Continued table No. 1.2.)

S NO	size group (in hectares) item /year	Hired labour (8 hrs mandays)			Total labour (8 hrs mandays)			Bullock labour (8 hrs days)			Machine labour Days			Total out put (in kgs)		
		1980-81	1993-94	2009-10	1980-81	1993-94	2009-10	1980-81	1993-94	2009-10	1980-81	1993-94	2009-10	1980-81	1993-94	2009-10
		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	0.50 & below	141.76	137.06	202.09	167.69	181.80	246.97	6.59	2.38	1.00	-	0.93	2.70	3214.29	6554	7072
2	0.51-1.00	131.88	134.03	214.67	150.82	144.76	237.72	5.98	1.83	-	-	1.26	3.29	3152.17	6990	7992
3	1.01-2.00	160.14	123.99	185.31	168.11	135.54	199.78	5.22	0.90	-	-	1.21	2.78	2731.30	5943	6921
4	2.01-4.00	147.58	143.02	184.22	148.49	146.32	191.82	1.41	-	-	-	1.73	1.56	3629.03	7162	6617
5	4.01 & above	138.67	148.48	133.63	141.18	151.38	136.37	2.62	-	-	-	1.33	1.00	3878.33	6836	6640
	Total	143.68	139.66 (-2.80)	183.98 (28.40)	150.38	152.06 (1.12)	202.52 (34.67)	3.53	0.83	1.00	-	1.32	2.26	3503.54	6770 (93.23)	7050

The output per hectare of Rabi Paddy has increased from 35 quintals in 1980-81 to 67.70 quintals in 1993-94 and further increased to 70.50 quintals by 2009-10. The output per hectare of Rabi Paddy has slightly increased in 2009-10 compared to output in 1993-94 even with adverse climatic conditions in 2009-10.

1.3 Level of Input- Use and Output per Hectare of Pulses

Data relating to level of input- use and output per hectare of pulses for the periods of 1980-81, 1993-94 and 2009-10 are presented in Table 6.3. It can be seen from Table that the levels of input-use of pulses crops are relatively lower than the input- use of other crops. The use of seed in 2009-10 is relatively higher than the use in 1980-81 and 1993-94. The total fertilizer application in 2009-10 was higher than that in 1980-81 and 1993-94. Use of human labour employment has increased from 30 mandays in 1980-81 to 33 mandays in 1993-94 and further increased to 51 mandays by 2009-10. Thus, input use of seed, fertilizer and human labour in 2009-10 is higher than that 1980-81 and 1993-94.

Table: 1.3 Comparison of Input-Out put Relationship per hectare of Pulses

S no	Item	1980-81	1993-94	2009-10
1	Seed (kgs)	21.85	21.53 (-1.46)	24.85
2	Organic fertilizers	-	-	-
3	Inorganic fertilizers (n+p+k) kgs	5.91	3.30	47.82
4	Total fertilizers (n+p+k) kgs	5.91	3.30 (-44.16)	47.82
5	Family labor (days)	3.60	9.31	33.22
6	Hired human labor	27.25	24.10	186.66

\

	(days)			
7	Total labor (man days) (5+6)	30.85	33.41 (8.40)	51.30 (66.28)
8	Bullock labor days	1.03	1.58	0.46
9	Machine labor (in hours)	-	0.43	6.00
10	Total output (kgs)	128.53	312.00 (142.74)	446.00 (247.00)

Conclusion:

In this analyze the changes in the level of input use and output per hectare of different crops in the study area during the last 30 years by considering three different periods of time i.e., 1980-81, 1993-94 and 2009-10. In order to compare the level of inputuse and output, data collected for the Socio and Agro - Economic Survey of Godavari Delta Region, conducted in 1980-81 by the Department of Economics, Andhra University; Visakhapatnam has been considered for the purpose of benchmark Study. Data have also collected for this analysis from an unpublished M.Phil Dissertation of the Researcher "Analysis of Costs and Returns in Agriculture"- A Study in Konassema Region of East Godavari District of Andhra Pradesh, for 1993-94.The present data are compared with the earlier data. This analysis is carried out for all the important crops as well as for all crops put together for Kharif Paddy, Rabi Paddy, Pulses, Coconut, Banana and Sugarcane.

\

BIBLIOGRAPHY

Books

Abdul Munir, (1992) "Agricultural Productivity and Regional Development" Manak Publications pvt Ltd, Jaipur & Delhi.

Ashok Rudra, (1982) "Indian Agricultural Economics myths and relatives", Allied Publishers Pvt., Ltd.,

Bhall G.S. and Allagh Y.K., (1979) "Performance of Indian Agriculture A Distric-wise Study" Sterling Publishers Pvt. Ltd.,

Dharam Narain,(1976) "Growth of productivity in Indian Agriculture Occasional paper No.93, Cornell University, Ithaca, New York,

Brahmananda,P. R, (1982) " Productivity in Indian Economy-Raising Inputs for falling outputs", Himalaya Publishing House,p.3.

Earl O Heady, (1964) "Economics of Agricultural Production and Resource use", Prentice Hall of India Pvt. Ltd.,

Hanumantha Rao, CH., (1965) "Agricultural Production functions costs and returns in India", Asian Publishing House, Bombay.

GOI,(2013),"Agriculture and Food Management", (Chapter, VII),Indian Economic Survey,2012-13.

Johnston, J., (1960) "Statistical Cost Analysis", Mc Graw-Hill Book Company, New York.

Krishna Bharadwaj, (1974) "Production conditions in Indian Agriculture; A Study based on Farm Management Surveys", Cambridge University Press.

Krishna Babu, P., (1987) "Regional Planning in India", Chugh Publications Pvt. Ltd,.

Mahendra Dev. S (2013), "India Development Report, 2012-13, Oxford University Press.

Ramana K.V. and Sarma P.V., (1981) "Socio and Agro-Economic Survey of Godavari Delta Region", unpublished Project Report,.

 "Socio and Agro-Economic Survey of Krishna Delta Region", unpublished Project Report, 1984.

Saine G.S.,(1979) "Farm size resource efficiency and Income distribution" Allied Publishers Pvt. Ltd.,

Sarma. P.V, (1999) "Agro-Economic Survey of Godavari Delta Region", Gowri Printers Pvt. Ltd. Visakhapatnam, India.

Suryanarayana Raju, S.K.V., (1987) "Analysis of Productivity Levels and Economic Efficiency in Agriculture", Chugh Publications Pvt. Ltd., Allahabad, India.

\