

Periodic Research

India's Agriculture: an Economic Analysis of Growth and Production in Present Scenario



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Abstract

Agriculture is the dominant sector of Indian economy, which determines the growth and sustainability. In the past few years, Indian agriculture has done remarkably well in terms of output growth. Indian agriculture is benefiting huge from rising external demand and the sector's wider participation in global economy. The 11th five year plan (2007-12) witnessed an average annual growth of 3.6% in the GDP from agriculture and allied sector. The growth target for agriculture in the 12th five year plan is estimated to be 4 percent. India is the first in the world in the production of milk, pulses, jute and jute-like fibers; second in rice, wheat, sugarcane, groundnut, vegetables, fruits and cotton production; and is a leading producer of spices and plantation crops as well as livestock, fisheries and poultry. In this context, the present study analysis the trends in agriculture growth and production in India. Government has also taken initiatives to encourage private investment in the food processing industry. The agriculture sector represents one of the most significant and dynamic sectors of the Indian economy.

Keywords: Agriculture, Growth, GDP, Production.

Introduction

Agriculture has been a way of life and continues to be the single most important livelihood of the masses. India is the second largest economy in Asia after china, as measured in terms of its GDP. High growth rates have significantly reduced poverty in India. However its GDP per head is still very low (estimated at US\$ 820 in 2006), so it remain s classified by the World Bank as a low income country. Agriculture including allied activities, accounted for 14.5 per cent of gross domestic product at 2004-05 prices, in 2010-11 as compared to 14.7 per cent in 2009-10. India has experienced considerable changes in the crop mix, yield and production since the inception of green revolution. The green revolution phase displayed a high yield growth per unit of input. The first post-green revolution phase (from late 1960s to mid-1980s) was marked by the continued growth in returns from land through the intensification in use of chemical inputs and machine labour. The second post green revolution phase (beginning the mid -1980s) was characterized by high input use and decelerating productivity growth.

Agricultural Changes in Global Scenario

Steady globalization of trade has profound implication for future agriculture development. In India with increasing globalization of markets over the years there will be demand for agricultural intensification. This will also favored because of greater backward and forward linkages between agriculture and food industry. Now, increase in production and productivity is bound to be strategically important to economy. Intensification will not only favour alleviation of rural poverty but will also improve resources conservation particularly in the small sector where farmers can be encouraged to take –up organized production of high value crops such as fruits and vegetables , flowers medicinal and aromatic herbs.

Objectives and Methodology

In this background, the present study is to analyze the trends and pattern of agriculture growth and production in India. The present study is based on secondary sources. Secondary data is collected from various governments of India reports, books, articles and economic survey of India.

Objective

1. To analyze the production of major crops in India.
2. To analyze the contribution of agriculture in India's GDP.

Distribution of Agriculture GDP in India

The agriculture and allied sectors contributed approximately

13.9% of India's GDP (at constant 2004-05 prices) during 2013-14. Gross Domestic Product (GDP) of agriculture and allied sectors and its share in total GDP of the country during the last 4 years, including the current year, 2004-05 prices is as follows Table-1 (Rs. In crores)

Items	Year				
	2009-10	2010-11	2011-12	2012-13	2013-14
GDP of Agriculture and allied sectors	6,60,987	7,17,814	7,53,832	7,64,510	7,99,996
Percent to total GDP	14.6	14.56	14.4	13.9	13.9

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

There has been a continuous decline in the share of agriculture and allied sectors in the GDP from 14.6 percent in 2009-10 to 13.9 percent in 2013-14 at 2004-05 prices. Falling share of agriculture and allied sectors in GDP is an expected outcome in a fast growing and structurally changing economy.

Growth (over the previous year) in the total GDP and that in the GDP of agriculture and allied sectors at 2004-05 prices is given below:

Table -2

Period	Total GDP	(In Per cent)
		Agricultural and Allied sectors
2007-08	9.3	5.8
2008-09	6.7	0.1
2009-10	8.6	0.8
2010-11	8.9	8.6
2011-12	6.7	5.0
2012-13(RE)	4.5	1.4
2013-14(BE)	4.9	4.6

Source: Central Statistics Office

The sector witnessed a growth of 5.8 per cent in 2007-08, 0.1 per cent in 2008-09, 0.8 percent in 2009-10, 8.6 per cent in 2010-11, 5.0 per cent in 2011-12, 1.4 per cent in 2012-13 and 4.6 per cent in 2013-14 (BE) at 2004-05 prices.

Indian Agriculture: Performance and Challenges

India is second largest producer of food in the world: more than 200 million tons of food grains, 150 million tones of fruits and vegetables, 90 million tones of milk, 1.6 million tons of poultry meat, 417 million livestock and 6.05 million tones of fish and fish products. The food grain production has increased more than 51 million tones in 1950-51 to 264.4 million tones in 2013-14. The recent trends in performance of Indian agricultural production however present a dismal picture. In this section reviews the trends in agricultural production of both food and non-food

crops in recent years, with a particular focus on the third advance estimates of agricultural production for 2013-14. The analysis shows that there has been a significant overall turnaround in the agricultural situation since 2010-11, both in food as well as in non-food crops.

Indian agriculture has witnessed wide variations in growth performance after independence. The institutional reforms along with the green revolution technologies adopted during 1960s fired up growth in the sector. Indian agricultural output especially that of rice and wheat in irrigated areas, recorded a quantum jump in growth during the 1970s and 1980s in response to the widespread adoption of new seed and fertilizer-based technologies. This was accompanied by substantial growth in rural infrastructure. The growth stimulus spread into rain fed agricultural production beginning in the 1980s with the rapid adoption of high-yielding varieties of coarse cereals, oilseeds, pulses and cotton. Rising yield growth and cropping intensities greatly contributed to buoyant agricultural growth, despite frequent instability due to weather events. These effects remained for almost three decades. Reforms initiated in early nineties had a significant impact on agricultural sector, primarily due to the opening up of economy to external competition, liberalization of trade and deregulation of input and other sub-sectors. These changes, both in structural and technological front reflected sharp fluctuations in growth of Indian agriculture. Agricultural growth has always been an important component of inclusiveness, and recent experience suggests that high GDP growth without high agriculture growth is likely to lead to acceleration in inflation in the country, which adversely affects the larger growth processes. The Eleventh Plan, which had attempted to reverse deceleration of agricultural growth during the Ninth and Tenth Plan, had some success in as food grains production has touched a new peak of 241.56 million tones in 2010-11, and growth in agriculture in the Eleventh Plan is likely to be about 3.3 per cent per year. However, to achieve between 4 and 4.5 per cent average growth in agriculture sector in the Twelfth Plan period adequate efforts on the part of the government required. In view of importance of these issues, critical examination of recent trends in agriculture and the factors underline the slow growth in agriculture is important to reorient programmes and policy in the Twelfth plan.

The Eleventh Five-Year Plan (2007-08 to 2011-12) witnessed an average annual growth of 3.6% in GDP from the agriculture and allied sectors against a target of 4%. Although the performance of the sector fell short of the target, food grains production in the country had improved remarkably and registered an average annual growth of 3.8% as compared to 1.3% in Tenth Plan (2002-03 to 2006-07)

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Table-3
All India Average Annual Growth Rates of Area, Production and Yield of Principal Crops

Crops	Average Annual Growth (%) 10 th Plan (2002-03 to 2006-07)			Average Annual Growth (%) 11 th Plan (2007-08 to 2011-12)		
	Area	Production	Yield	Area	Production	Yield
Rice	-0.39	1.25	1.17	0.18	2.69	2.41
Wheat	1.30	1.11	-0.32	1.31	4.64	3.29
Coarse – Cereals	-0.26	2.55	1.75	-1.59	5.68	7.27
Pulses	1.31	2.66	0.65	1.36	4.28	2.78
Food grains	0.29	1.29	0.59	0.19	3.80	3.55
Oilseeds	3.55	7.99	3.53	-0.07	5.54	5.32
Sugarcane	3.98	4.90	0.66	0.04	0.99	0.87
Cotton**	0.57	20.01	19.40	5.97	10.46	3.93
Jute & Mesta***	-2.15	-0.58	1.45	-0.59	0.62	1.12

Source: Directorate of Economics and Statistics, Ministry of Agriculture, Government of India, State of Indian Agriculture, 2012-13.

Table 4 reveals that although agriculture production from 2000-01 to 2013-14* is continuous increase and record production of food grains at 264.4 million tons (2013-14*) with 2.87 per cent growth rate over the previous year is observed. However, as per 3rd Advanced Estimates the total food grains output is

increase by 7.4 million tons in 2013-14* A part from conducive weather, the record of rising yields ,technological gains, better prices, timely policy intervention and implementation of various schemes such as the “Bringing Green Revolution to the Eastern Region” in the Eleventh Plan (Deokar et al. 2013).

Table 4
Production of Major Crops, 2000-01 to 2013-14(million tones or bales)

Crop	Seasons	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14*
Rice	K	72.78	80.52	63.08	78.62	72.23	78.27	80.17	82.66	84.91	75.92	80.65	92.78	92.4	92
	R	12.2	12.82	8.74	9.91	10.9	13.52	13.18	14.03	14.27	13.18	15.33	12.52	12.9	14.3
	T	84.98	93.34	71.82	88.53	83.13	91.79	93.35	96.69	99.18	89.1	95.98	105.3	105.2	106.033
Wheat	R	69.68	72.77	65.76	72.16	68.64	69.35	75.81	78.57	80.68	80.8	86.87	94.88	93.5	95.8
Coarse Cereals	K	24.86	26.71	19.99	32.22	26.36	26.74	25.61	31.89	28.54	23.83	33.08	32.44	29.79	31.2
	R	6.22	6.66	6.08	5.39	7.1	7.33	8.31	8.87	11.49	9.72	10.32	9.58	10.25	11.4
	T	31.08	33.38	26.07	37.6	33.46	34.07	33.92	40.76	40.03	33.55	43.4	42.01	40.04	42.7
Pulses	K	4.45	4.84	4.15	6.16	4.72	4.86	4.8	6.4	4.69	4.2	7.12	6.06	5.9	6.1
	R	6.63	8.53	6.97	8.74	8.41	8.52	9.4	8.36	9.88	10.46	11.12	11.03	12.4	13.5
	T	11.08	13.37	11.13	14.91	13.13	13.38	14.2	14.76	14.57	14.66	18.24	17.09	18.3	19.6
Food-Grains	K	102.09	112.07	87.22	117	103.31	109.87	110.57	120.95	118.14	103.95	120.85	131.27	128.1	129.4
	R	94.73	100.78	87.55	96.19	95.05	98.73	106.71	109.83	116.33	114.15	123.6	128.01	129.1	135
	T	196.81	212.85	174.77	213.19	198.36	208.6	217.28	230.78	234.47	218.1	244.49	259.29	257	264.4
Oilseeds	K	11.94	13.22	8.98	16.67	14.15	16.77	14.01	20.71	17.81	15.73	21.92	20.7	20.8	22.1
	R	6.5	7.44	5.86	8.51	10.2	11.21	10.28	9.04	9.91	9.15	10.56	9.11	10.2	10.34
	T	18.44	20.66	14.84	25.18	24.35	27.98	24.29	29.75	27.72	24.88	32.48	29.81	30.9	32.4
Sugar-cane	T	295.96	297.21	287.38	233.86	237.09	281.17	355.52	348.19	285.03	292.3	342.38	361.04	341.2	348.4
Cotton**	T	9.52	10	8.62	13.73	16.43	18.5	22.63	25.88	22.28	24.02	33	35.2	34.2	36.5
Jute & Mesta**	T	10.56	11.68	11.27	11.17	10.27	10.84	11.27	11.21	10.37	11.82	10.62	11.4	10.9	11.4

Note: *As per 3rd Advance Estimate, ** (million bales of 170 kg each), *** (million bales of 180 kg each)

Source: Directorate of Economics and Statistics, Ministry of Agriculture, Government of India, State of Indian Agriculture, 2013-14*

Crop Production

During 2012-13, there was record production of food grains at 257.0 million tones, of which 128.1 million tones was during Kharif season and 129.1 million tones during the Rabi season. Of the total food grains production of cereals was 238 million tones and pulses 18.38 million tones. As per 3rd Advance

Estimates for 2013-14*, total food grains production is estimated at 264.4 million tones (129.4 million tones during Kharif and 135.0 million tones during Rabi season). The 7.4 million tones increase in food grains production over past year. The production of rice is estimated at 106.03 million tones , pulses 19.6 million tones, oilseeds at 32.4 million tones, sugarcane at

348.4 million tones and cotton at 36.5 million tones (of 170 kg each). Though, production of rice, sugarcane, cotton, wheat, coarse cereals pulses, food grains, oilseeds and jute Mesta higher than last year. Production of jute is estimated 11.4 bales (of 180 kg

each) which is marginally higher than that of last year (10.9 million bales). Production of major crops since (2000-01 till 2013-14) 3rd Advanced Estimates is given in Table 5.

Production of major crops during 2000-13(million tones/bales)

Year	Rice	Wheat	Coarse Cereals	Pulses	Food Grains	Oilseeds	Sugar-cane	Cotton	Jute-Mesta
2000-01	84.98	69.68	31.08	11.08	196.81	18.44	295.96	9.52	10.56
2001-02	93.34	72.77	33.38	13.37	212.85	20.66	297.21	10.00	11.68
2002-03	71.82	65.76	26.07	11.13	174.77	14.84	287.38	8.62	11.27
2003-04	88.5	72.16	37.60	14.91	213.2	25.18	233.86	13.73	11.17
2004-05	83.1	68.6	33.46	13.13	198.36	24.35	237.09	16.43	10.27
2005-06	91.8	69.35	34.07	13.38	208.60	27.98	281.17	18.50	10.84
2006-07	93.4	75.8	33.92	14.20	217.28	24.29	355.52	22.63	11.27
2007-08	96.69	78.57	40.76	14.76	230.78	29.75	348.19	25.88	11.21
2008-09	99.18	80.68	40.03	14.57	234.47	27.72	285.03	22.28	10.37
2009-10	89.1	80.8	33.55	14.66	218.10	24.88	292.30	24.02	11.82
2010-11	95.98	86.87	43.40	18.24	244.49	32.48	342.38	33.00	10.62
2011-12	105.3	94.88	42.01	17.09	259.29	29.81	361.04	35.20	11.40
2012-13	105.2	93.5	40.04	18.3	257.0	30.9	341.2	34.2	10.9
2013-14*	106.30	95.8	42.7	19.6	264.4	32.4	348.4	36.5	11.4
Mean	93.19	78.94	36.57	14.88	223.6	25.9	307.62	22.17	11.05
SD	9.20	9.89	4.92	2.49	25.23	5.07	40.77	9.48	0.24
CV	9.87	12.49	13.45	16.73	11.2	19.57	13.25	42.76	2.17

Source: Reserve Bank of India: Annual Report 2013-14, GOI Ministry of Agriculture.

Conclusion

From the above evidence we conclude that overall performance of the Indian agriculture growth and production has shown the significant change in the last three decades. It reveals that the agriculture major crops has increase over the period of time An average of 93.19 million tones of rice is produced annually which is higher than production of wheat ,coarse cereals and pulses taken individually. However, it is less than annually average production of food grains (223.6 million tones). Nonetheless, the variation in annual production of all food grains is significant standard Deviation value obtained of rice, cereals, wheat, and pulses have increased comparatively over the last few years. This paper is mainly depends on secondary sources of the different agriculture departments and planning commission.

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