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An Economic Analysis of Agriculture Sector in Gujarat

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Abstratct – The aim of the paper is to analysis the agriculture production trend in Gujarat. It has been identified that there are variations in the production of various crops year on year. Mostly these variations are related to fluctuation in monsoon and agriculture policy of the government. Mostly the credit is given to south west monsoon, soil health analysis, states assistance in seed farm, kruchi-Mahotsav, water resource development, additional water storage and maintaining the water resources etc. This simple analysis is done using secondary data. Data has is taken from RBI. Data reveals that in the last one decade there has been an extraordinary growth in Gujarat agriculture. The growth rates have been better than states like Maharashtra and Rajasthan.

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INTRODUCTION

Gujarat agriculture sector still remains critical as it provides employment to about 52 % (as per 2011census). Moreover this sector is entitled to supply required food, fodder and raw materials for growing population. Notwithstanding the fact that the pioneering work by agriculture scientists, government and the efforts of farmers had helped achieve a breakthrough in the agriculture sector. High agricultural production and productivity achieved in some crops has helped in attaining growth. The food safety net for each and every of the over a billion citizens-a number that is growing- requires enhanced agricultural production and productivity in the form of a Second Green Revolution.

Profile of Gujarat State as of 2016-17

Total Geographical Area: 196 lakh ha and 66% with < 750 mm rainfall

Gujarat comprises 24.94% of arid and 33.66% of semi-arid areas of the country.

Net Area Sown: 103 lakh ha (52%) **Gross Cropped Area:** 139 lakh hectares (71%).

Gross Irrigated area: 44.71% **Net Irrigated area:** 43.24%

Operational land holders: 48.86 lakh **Average land holding:** 2.03 ha

Land holding: < 1 ha (18.1 lakh) 1-2 ha (14.3 lakh) 2 to 5 ha (10.8 lakh) 5 to 10 ha (5.1 lakh) >10 ha (49,000)

Cropping intensity : 118% 70% of GCA under non-food crops.

Increase in total cropped area in last the 15 years: 2.5 million ha (i.e. 1 million ha by conversion of fallow lands and 1.5 million ha in double cropping).

Water harvesting on top priority witn 1.75 lakh check dams & 2.25 lakh bori-bunds in the last decade.

Micro-irrigation (2016-17):12.2 lakh ha| Drip: 6.5 lakh ha Sprinkler: 5.7 lakh ha

Net irrigated area to increase to 64% in the next five years due to Sardar Sarovar Narmada Ltd.

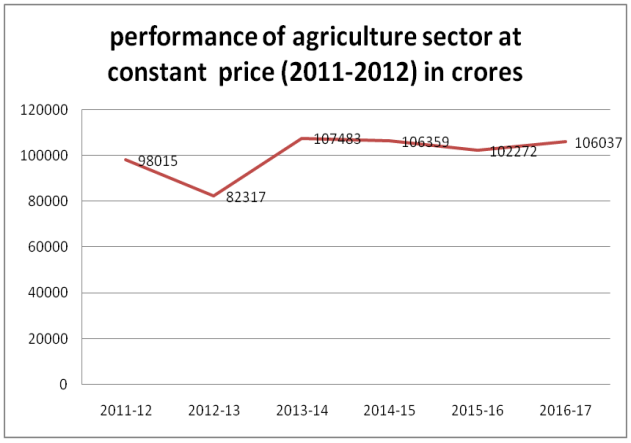
OBJECTIVES AND METHODOLOGY

This study is to analyze the agriculture Production in Gujarat. The Present Study is based on secondary sources. Secondary data is collected from various reports of Government of India, RBI reports, Directors of economics and statistics Gujarat reports, Ministry of Agriculture reports, books, articles, and Economic Survey of India.

Major Agriculture and Horticulture crops of Gujarat

Particular	Name of the Crops
Major Kharif Crops	Cotton, Groundnut, seas mum, castor, paddy, Bajara, Maize, tur, Green Gram.
Major Summer Crops	Wheat, rice, maize, Mustard, Gram, Ground nut, Bajara, sugarcane
Major Vegetable	Onion, potato, Brinja, tomato, okra, cabbage, cauliflower.
Major spices	Cumin, fennel Garlic, Chilly, coriander, Ginger, turmeric, fenugreek, ajawan and suva
Major Fruits	Banana, Mango, papaya, chiku, lemon, citrus, ber, Guava, pomegranate,
Major Flowers	Rose, Marigold, mogra, lilly.

The growth and performance of agriculture sector in Gujarat



During the period 2011-12 to 2016-17, the GSDP for agriculture sector including animal Husbandry increased from Rs. 98015 Crore to Rs.106037 crores. This shows a positive performance in overall agriculture production in Gujarat.

The production of food grains during 2017-18 is estimated at 66.88 lakh tones compared to 92.57 lakh tonnes in 2011-12 this is due to the reason that During first week of September, 2012, all districts of the state received very good rainfall which will help in improving crop prospects for rabi season.

Agriculture Growth Rate in Gujarat	
Year	Agriculture growth of Gujarat %
2001-02	-11.52
2002-03	30.64
2003-04	-6.83
2004-05	39.89
2005-06	-6.76
2006-07	23.10
2007-08	7.48
2008-09	-7.41
2009-10	-0.50
2010-11	18.12
2011-12	5.70
2012-13	-6.96
2013-14	-13.79
2014-15	26.55
2015-16	0.01
2016-17	-1.39

Source: RBI

AGRICULTURE GROWTH IN GUJARAT

The agricultural growth rate in Gujarat raised from 3.3 per cent in the 1990s to 11.1 per cent during the decade 2001-2002 to 2011-2017. In fact, the production of cotton, wheat, fruit crops and milk have played a vital role in sustaining the agricultural growth in the State economy. During the period of 2001-2010 high agriculture growth has been credited to better investment in irrigation, dedicated power supply availability, Adoption of embedded technology and by and large management of groundwater, and about 15 lakh ha of arid land was converted to cultivable land. This initiation boosted the crop output. Finally the promise of reasonable central-MSP- spurred sowing of large acreage under major cash crops such as Bt-Cotton etc-(ASSOCHAM-2011)

Although, the farmers of Gujarat have shown a move towards cash crops, fruits and vegetables and oil seeds, it is a matter of pride that the total production of food grains crossed 100 lakh MT for the first time in the history of the State in 2010-2011. However in the year 2017-18 it dropped to 6688 thousand tonnes. Agriculture continues to contribute 15 per cent of Gujarat's Gross State Domestic Product (GSDP) and provides employment to almost 51.58 per cent of our workforce.

According to CARE Ratings the State contributes more than 7 per cent to India's GDP; in particular, it for 13 per cent of manufactured and 11 per cent of primary sector output (mainly agriculture) of the country. During the 11th five year plan period (2007-12) the average agriculture growth rate of Gujarat was 5.49 percent per annum as compared to all India average growth rate of 4.06 percent per annum. As against 26.64 percent growth in 2014-15 and 0.01 percent growth in 2015-16, Gujarat has registered -1.39 percent growths in 2016-17 presently.

Year Wise Production of Major Crops in Gujarat (1981-2017) (In thousand tonnes /bales)

Year	Rice	Wheat	Coarse Cereals	Pulses	Food Grains	Oilseeds	Cotton(Lint)	Sugarcane
1980-81	556.6	1298.3	2353.7	266.5	10110.2	1861.8	1713.7	4435.2
1981-82	736.7	1407.3	2595.1	349.5	9345.5	2518.1	2095.3	5022.8
1982-83	488.9	1352.3	2082.3	472.7	7461.2	1785.3	1547.5	6695.4
1983-84	754.3	1627.0	2803.6	558.7	10710.1	2377.7	1444.5	7746.3
1984-85	838.1	1329.3	2533.7	555.9	10633.5	2214.6	2068.8	7582.3
1985-86	454.2	782.8	1160.7	338.3	8751.7	880.0	1986.7	6489.6
1986-87	446.0	661.7	1752.6	287.6	3147.9	1674.1	1093.4	5565.9
1987-88	279.4	351.2	595.0	159.7	1385.3	398.2	295.3	6077.8
1988-89	866.0	1512.5	2455.8	644.6	5478.9	3594.2	1469.9	7907.1
1989-90	817.3	1101.7	2301.4	729.1	4949.5	2486.9	1755.5	9159.8
1990-91	791.1	1443.7	1982.1	761.9	4978.8	2106.2	1322.9	10599.7
1991-92	690.6	905.7	1403.5	485.2	3485.0	1643.7	1180.7	10239.4
1992-93	829.6	1360.2	2571.8	859.6	5621.2	3185.6	1988.5	10872.1
1993-94	838.6	928.2	1473.1	626.2	3866.1	1572.4	1622.8	10232.0

1994-95	942.1	1962.4	1823.9	664.9	5393.3	3706.9	2269.3	10785.0
1995-96	826.6	1123.5	1696.4	581.2	4227.7	2164.4	2202.0	10511.2
1996-97	946.0	1336.0	2262.8	663.8	5208.6	3807.1	2657.7	11404.3
1997-98	1042.3	1647.0	2407.2	613.3	5709.8	3837.6	3180.0	11836.2
1998-99	1015.8	1702.6	2214.8	633.5	5566.7	3886.3	3903.0	13566.3
1999-00	984.9	1020.0	1641.3	405.6	4051.8	1726.2	2085.6	14066.2
2000-01	472.7	649.0	1226.6	190.7	2539.0	1661.6	1161.4	12694.7
2001-02	1040.1	1144.7	2341.0	379.8	4905.6	3635.5	1702.7	12464.6
2002-03	541.7	856.6	1840.8	327.2	3566.3	1683.1	1684.6	14071.3
2003-04	1277.0	2036.5	2635.4	622.4	6571.3	5665.0	4026.9	12669.1
2004-05	1238.2	1805.5	1734.5	479.3	5257.5	2986.9	4724.8	14570.0
2005-06	1298.0	2473.0	1836.0	547.0	6154.0	4682.0	6772.0	14580.0
2006-07	1390.0	3000.0	1516.0	593.0	6499.0	2569.0	8787.0	15630.0
2007-08	1474.0	3838.0	2151.0	743.0	8206.0	4725.0	8276.0	15190.0
2008-09	1303.0	2593.0	1976.0	609.0	6481.0	4015.9	7013.8	15510.0
2009-10	1292.0	2352.0	1600.0	517.0	5761.0	3097.0	7986.3	12400.0
2010-11	1496.6	4019.5	2102.6	723.0	8341.6	4896.1	10400.0	13760.0
2011-12	1790.0	4072.0	2232.3	780.0	8874.3	5035.0	12000.0	12750.0
2012-13	1541.0	2944.0	1999.0	572.2	7056.2	2705.0	8850.0	12690.0
2013-14	1636.0	4694.0	2120.6	729.0	9179.6	6870.4	10150.0	12550.0
2014-15	1637.0	3220.0	1547.9	581.0	6985.9	3983.6	11089.0	14060.0
2015-16	1702.0	2484.0	1549.7	543.6	6279.3	4179.1	9400.0	11120.0
2016-17	1930.0	2743.0	1929.0	818.0	7420.0	4781.3	8220.0	11950.0
CAGR from 2000-01 to 2017	9.19072	9.42683	2.870139603	9.528	6.9322796	6.828891	13.01032522	-0.37712
CAGR from 1980-01 to 2017	3.51431	2.099504	-0.551216375	3.1643	-0.85566748	2.654535	4.451556783	2.79147

Source: RBI

CROP PRODUCTION

Crop production will become more difficult with climate change, resource scarcity (e.g. land, water, energy, and nutrients) and environmental degradation (e.g. declining soil quality and surface water). To pursue the fastest and most practical route to improved yield, the near-term strategy is application and extension of existing agricultural technologies. Agricultural productivity is measured as the ratio of agricultural outputs to agricultural inputs so it is called efficiency of farm. The productivity of a region's farms is important for food sufficiency, growth prospects, income distribution, etc. An increase in a region's agricultural productivity implies a more efficient utilization of scarce resources, which leads to higher incomes from low cost. As farms become more prolific, the wages earned by workers in agriculture also increases and at the same time, food supplies become more stable.

After-2000s period can be considered a watershed after which output has recorded tremendous increase, making Gujarat the foremost state in India in terms of growth in value of agricultural output. The strong performance of Gujarat agriculture is also reflected in terms of increased crop yields in groundnut, wheat and rice(doubling formers income by 2020 Gujarat Report). Average production of food grain is highest (6220.6 thousand tons) and it is followed by cotton (4327.8 thousand tons) in the state. Average production of the oil seeds 3097.31 thousand tons) and Average production of the oil seeds 1958.1 thousand tons and it is followed by wheat 1885.9 & rice (1032.6 thousand tons respectively) in the Gujarat state.

Cotton and Wheat have grown at CAGR 13.01% and 9.4% respectively. While rice, pulses, Food grain and oilseeds have grown at CAGR at 9.19%, 2.8%, 6.9% and 6.8% respectively in the state.

Crop wise Highest and Lowest production (2001 to 2017)

Name of Crop	Highest production		Lowest Production	
	Year	Production	Year	Production
Rice	2016-17	1616	2002-03	541.7
Wheat	2013-14	4694	2000-01	649.6
Coarse/cereals	2003-04	2635.4	2000-01	1226.6
Pulses	2016-17	818	2000-01	190.7
Food-grains	2013-14	9179.6	2000-01	2539
Oilseeds	2013-14	6870.4	2000-01	1661.1
Cotton	2011-12	12000	2002-03	1161.04

CONCLUSION

From the above evidence we can conclude that overall performance of the Gujarat 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 6220.0 million tonnes of food grain is produced annually which is higher than production of rice, Wheat, Coarse cereals, Pulses and oilseeds taken individually. However, it is less than annually average production of all Cotton (4327.8 million tonnes). Nonetheless, the variation in annual production of all food grains is significant standard Deviation value obtained of cotton, Food grain, oilseeds and wheat have increased comparatively over the last few years. The choice before the state is clear to invest more in agriculture and allied sectors with the right strategies, policies, and interventions. This is also a 'necessary' condition for 'inclusive growth' and for ensuring that the benefits of growth reach a larger number of people.

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