

EXPLORING POTENTIAL OF DEVELOPMENT IN INDIAN AGRICULTURE

Abstract

The main objectives of the study are to examine the growth and trends in area, production and yield of major crops in India and Punjab over a period of 1960-61 to 2014-15. For this purpose, necessary secondary data required for the study has been collected from Directorate of Economics and Statistics of Ministry of Agriculture and Statistical Abstract of Punjab. The results of the study show that growth rate of production and yield of all major crops in India has increased during the period of the study whereas the area under cultivation of groundnut has witnessed a negative growth during the same period. Whereas in Punjab the area under the cultivation of major crops has decreased whereas the production and yield of major crops in Punjab agriculture has increased over the period of time.

Keywords: Agriculture, Major crops, Area, Production, Yield, Growth, Trends

1. Introduction

In spite of economic development and industrialization, agriculture is the backbone of the Indian economy. Nearly two-third of its population depends directly on agriculture for its livelihood. Agriculture is the main stay of India economy and it contributes about 14% of the Gross Domestic Product (GDP). From agricultural point of view India is a unique country. It has vast expanse of level land, rich soils, wild climatic variations suited for various types of crops, ample sunshine and a long growing season (Muthu 2015). Agricultural production can be broadly classified into food crops and commercial crops. In India the major food crops include rice, wheat, maize, gram, bajra. Similarly, the commercial crops or non-food crops include raw cotton, sugarcane, rapeseed and mustard, groundnut. In India, total production has been increasing with the combined effect of growth in total cultivated areas and increase in the average yield per hectare of various crops. After the introduction of modern agricultural technique along with the adoption of hybrid seeds, extension of irrigation facilities and application of intensive method of cultivation in India, yield per hectare of all crops has recorded a steep rising trend.

2. Objectives

- i) To study the production of major crops, area under major crops and productivity of major crops in India and Punjab.
- ii) To analyze the growth and trends of area, production and productivity in agriculture in India.

3. Methodology

In this project an attempt has been made to examine the area, production and yield of major crops in Indian agriculture. The study is based on secondary data. Hence the analysis was covered for the period from 1960-61 to 2014-15. The secondary data required for the study will be collected from published sources from the Directorate of Economics and statistics, Ministry of Agriculture, Government of India, and Statistical Abstract of Punjab. Simple percentage and graphs have been employed in this study to analyze the data.

4. Trends of Area, Production and Yield thousand hectares of different crops In India

The trends of area, Production and yield of major crops such as rice, wheat, cotton, maize, gram, bajra, rapeseed and mustard, sugarcane, groundnut and potato during the period between 1960-61 and 2014-15 has been presented in following Tables.

Table-1: Trends of Area of Major crops in India

(*000 Hectares)

Crops	Years								
	1960-61	1970-71	1980-81	1990-91	2000-01	2010-11	2012-13	2013-14	2014-15
Rice	34130	37590	40150	42690	44710	42860	42750	44140	43860
Wheat	12930	18240	22280	24170	25730	29070	30000	30470	30970
Cotton	7610	7610	7820	7440	8530	11240	11980	11960	13080
Maize	4410	5850	6010	5900	6610	8550	8670	9070	9260
Gram	9280	7840	6580	7520	5190	9190	8520	9930	8190
Bajra	11470	12910	1160	10480	9830	9610	7300	7810	7120
Rapeseed & Mustard	2280	3320	4110	5780	4480	6900	6390	6650	5790
Sugarcane	2420	2620	2670	3690	4320	4880	5000	4990	5140
Groundnut	6460	7330	6800	8310	6560	5860	4720	5510	4680
Potato	380	480	730	940	1220	1860	1990	1970	2070

Source: Directorate of Economics and statistics, Ministry of Agriculture

The table 1 shows that the area under cultivation of rice, wheat, cotton, maize, rapeseed & mustard, sugarcane and potato has increased during the period of the time whereas the area under the cultivation of gram, bajra and groundnut has decreased during the period of study.

Table-2: Trends of Production of Major crops in India

(*000 metric tons)

Crops	Years								
	1960-61	1970-71	1980-81	1990-91	2000-01	2010-11	2012-13	2013-14	2014-15
Rice	35660	42220	53630	74290	86080	95980	105300	106650	104800
Wheat	11000	23830	36310	55140	69680	86870	93510	95850	88940
Cotton*	5600	4760	7010	9840	9520	33000	34220	36900	35480
Maize	4080	7490	6960	8960	12040	21730	22260	24260	23670
Gram	6250	5200	4330	5360	3860	8220	8830	9530	7170
Bajra	3280	8030	5340	6890	6760	10370	8740	9250	9050
Rapeseed & Mustard	1350	1980	2300	5230	4190	8180	8030	7880	6130
Sugarcane	110000	126370	154250	241050	295960	342380	341200	352140	359330
Groundnut	4810	6110	5010	7510	6410	8260	4700	9710	6560
Potato	2720	4810	9670	15210	22490	42340	45340	41560	45950

Source: Directorate of Economics and statistics, Ministry of Agriculture

Notes: *- thousand bales of 170 kilogram each

The table 2 shows that the production of all major crops has been increased during the 1960-61 to 2014-15. There has been record of production of sugarcane at 359330 thousand metric tons during 2014-15. The production of sugarcane and potato has increased respectively to 359330 thousand metric tons and 45950 thousand metric tons during 2014-15. The production of rice has been estimated to be 104800 thousand metric tons in 2014-15 which is marginally lower than that of in last year (106650 thousand metric tons). Similarly the production of wheat, cotton, maize, gram, bajra, rapeseed & mustard and groundnut in 2014-15 also is lower than that of in last year.

Table-3: Trends of Yield of Major crops in India**(Per Hectare in kilogram)**

Crops	Years								
	1960-61	1970-71	1980-81	1990-91	2000-01	2010-11	2012-13	2013-14	2014-15
Rice	1013	1123	1336	1740	1901	2239	2461	2416	2390
Wheat	851	1307	1630	2280	2708	2988	3117	3146	2872
Cotton	125	106	152	225	190	499	486	510	461
Maize	926	1279	1159	1518	1822	2542	2566	2676	2557
Gram	674	663	657	712	744	894	1036	960	875
Bajra	286	622	458	658	688	1079	1198	1184	1272
Rapeseed & Mustard	467	594	560	904	936	1185	1262	1185	1089
Sugarcane	45549	48322	57844	65395	68578	70091	68254	70522	69860
Groundnut	745	834	736	904	977	1411	955	1765	1400
Potato	7251	9976	13258	16254	18404	22724	22760	21060	22210

Source: Directorate of Economics and statistics, Ministry of Agriculture

The table 3 indicates that the per hectare yield of rice, wheat, cotton, maize, gram, rapeseed & mustard, sugarcane and groundnut has recorded respectively 2390, 2872, 461, 2557, 857, 1089, 69860, 1400 per hectare in kilogram during 2014-15 which is lower than that of in last year. Similarly the yield of bajra and potato has increased respectively 1272 per hectare in kilogram and 22210 per hectare in kilogram during 2014-15.

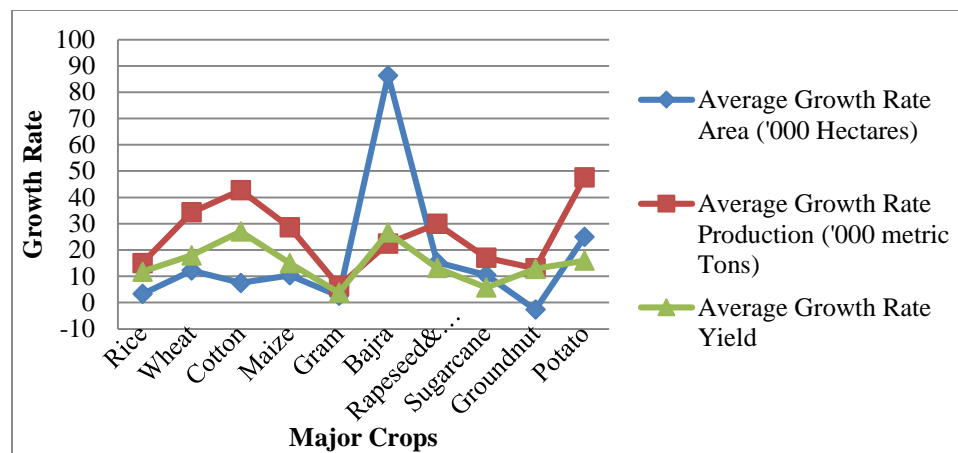
5. Growth rate of area, production and yield of major crops in India

The average growth rate of area, production and yield of major crops such as rice, wheat, cotton, maize, gram, bajra, rapeseed & mustard, sugarcane, groundnut and potato during the period 1960-61 to 2014-15 has been presented in the following table-4.

Table 4: Average growth rate of area, production and yield of major crops in India**(In percentage)**

Crops	Average Growth Rate		
	Area	Production	Yield
Rice	3.28	15.07	11.76
Wheat	12.19	34.36	17.98
Cotton	7.51	42.71	27.01
Maize	10.38	28.64	15.01
Gram	2.57	6.37	3.77
Bajra	86.33	22.48	26.68
Rapeseed & Mustard	15.32	29.96	13.17
Sugarcane	10.46	17.07	5.71
Groundnut	-2.63	13.03	12.84
Potato	25.05	47.58	15.99

Figure 1: Growth rate of area, production and yield of major crops in India



The table 4 and figure 1 shows that the growth of production and yield for all major crops has recorded positive growth during the period from 1960-61 to 2014-15 whereas the growth rate of area under cultivation of groundnut has witnessed a negative growth during the period 1960-61 to 2014-15. The highest growth rate in the area under cultivation has been observed in case of bajra. The high growth rate in production has been observed in case of potato and high growth rate in yield has been observed in case of cotton.

5. Trends of Area, Production and Yield of different crops In Punjab

The trends of area, Production and yield of major crops such as rice, wheat, cotton, maize, gram, bajra, rapeseed and mustard, sugarcane, groundnut and potato in Punjab during the period between 1960-61 and 2014-15 has been presented in Table 5.

Table 5: Trends of area ('000 hectares), production ('000 Metric Tons) and yield (Per Hectare in Kilogram) of major crops in Punjab

Crops		Years								
		1960-61	1970-71	1980-81	1990-91	2000-01	2010-11	2012-13	2013-14	2014-15
Rice	Area	227	390	1180	2015	2612	2830	2849	2849	2894
	Production	229	688	3233	6506	9157	10833	11390	11259	11107
	Yield	1009	1765	2733	3229	3506	3828	3998	3952	3838
Wheat	Area	1400	2299	2812	3273	3408	3510	3517	3510	3505
	Production	1742	5145	7677	12159	15551	16472	16614	76610	15088
	Yield	1244	2238	2730	3715	4563	4693	4724	5017	4304
Cotton	Area	447	397	649	1001	474	483	481	445	420
	Production	709	818	1178	1909	1199	1822	1626	1491	1342
	Yield	539	737	570	760	845	1118	1035	1023	943
Maize	Area	327	555	382	188	165	140	130	131	131
	Production	371	861	612	333	461	478	517	482	510
	Yield	1135	1555	1602	1786	2793	3415	3981	3680	3898
Gram	Area	838	358	258	60	8	2.8	2.4	2	1.8
	Production	681	284	150	45	8	3.5	3.4	2.5	1.9
	Yield	813	797	582	744	953	1300	1413	1245	1085
Bajra	Area	123	207	69	12	6	4	3	3	1
	Production	58	248	86	13	5.2	4	3	3	1
	Yield	472	1176	1244	1107	893	1495	1050	895	975
Rapeseed& Mustard	Area	107	103	136	69	55	32	29	30	31
	Production	54	57	77	69	67	42	37	39	38.7
	Yield	-	-	567	1003	1218	1307	1284	1306	1257
Sugarcane	Area	133	128	71	101	121	70	82	89	94
	Production	486	527	392	601	777	417	483	552	581

	Yield	3654	4117	5526	5941	6425	5925	5888	6197	6186
Groundnut	Area	67	174	83	11	4	2.2	1.7	1.13	1.4
	Production	62	169	104	9	4	4	3	2.4	2.6
	Yield	925	970	1249	816	879	1825	1739	1850	1860
Potato	Area	8.7	16.9	39.7	23.1	59.6	64.4	78.9	89.9	171.6
	Production	128.8	216	767.4	453.2	1166	1609.2	1979.8	2262.4	3645.7
	Yield	14805	12752	19287	19863	19563	24988	25092	24140	25510

Source: Statistical Abstract of Punjab

Table 5 shows that the area under the cultivation of cotton, maize, gram, bajra, rapeseed & mustard, sugarcane and groundnut has been decreased during the period from 1960-61 to 2014-15. The production of gram, bajra, rapeseed & mustard and groundnut has been decreased whereas the yield of the all major crops increased in Punjab during the period from 1960-61 to 2014-15.

6. Conclusion

From the results it is concluded that the trends of area, production and yield of major crops in India has increased over the period of the time. The growth rate of production and yield for all major crops has recorded positive growth during the period of the study whereas the growth rate of area under cultivation of groundnut has witnessed a negative growth during the period of the study in India. Whereas in Punjab the area under the cultivation of major crops has decreased whereas the production and yield of major crops in Punjab agriculture has increased over the period of time.

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