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Growth and performance of agro-based industries in major districts of state Haryana (India)

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Abstract: The ever rising share of rice, wheat, rapeseed & mustard and cotton to total cropped area may be attributed to the major change in production technology of these crops, expansion of irrigation facilities, market infrastructure, institutional arrangements and government policies (especially minimum support price, identification of export production zone, globalization of agriculture trade). The plausible reasons for crops registering. declining share in acreage may be low productivity, absence of high yielding varieties, low market price, difficulty in marketing of the product and high risks involved. Percentage decline in area under sugarcane also witnessed due to not timely payment of produce and its disposal pattern. Over the years, the increase in production of crops may be achieved as a result of use of improved varieties seeds, fertilizers, plant protection measures, efficient use of available both canal and underground water improved cultivation practices, mechanization of farm activities for timely operations. Some crops increased over the time period but production level showed decline due to decrease in area as a result of non profitability of crops. The above findings indicate that with further increase in the availability of irrigation water and demand of agricultural, output both at national and global level even keeping the input price matrix at constant, the acreage as well as production level of water intensive and less risky crops is likely to increase in future. The rice and wheat production exhibited positive and significant increase per annum during the period under study. This may be attributed to increase in area under high yielding varieties of these crops. The continuous decline in area under gram resulted in decrease in production. The production of cotton and rapeseed and mustard registered a positive growth rate but at a varying degree in all the periods.
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Introduction:

In India, Agriculture and dairy sectors have achieved remarkable successes over the last three and half decades besides being one of the world's largest producers of food grains, India ranks second in the world in the production of fruits and vegetable and first in milk production providing must needed food security to the nation. The accomplishment of the green and white revolutions have however not been matched by concurrent developments in supply chain management and in new technologies for better processing, preservation and storage of food.

Increased urbanization improved standards of living and the convenience needs of dual income families point to major market potentialities in the food processing and marketing sectors. This is also evident from the presence of several global food giants and leading Indian industrial enterprises in the country's food processing sector such as Nestle India Ltd Cadbury's India Ltd, Kellogg's India, Hindustan lever Ltd., ITC-Agro, MTR food Ltd.

The food and agriculture integrated development action (FAIDA) report (1997) prepared by Mckinsey has estimated that driven by changing consumer preferences the annual consumption of value added foods alone would grow to Rs. 225,000 crore by 2007, larger than the entire manufacturing sector.[1]

A more recent report has stated an absolute revenue increase of Rs. 900 billion in food Manufacturing between 1993 and 2000. Overall the value of the Indian food industry has increased from Rs. 3.09 trillion in 1993-94 to Rs. 3.99 trillion in 2000-01. The segments with the largest growth potential have been identified as dairy wheat, fruits and vegetables and poultry.

The agro-products and food processing sector in India has a turnover of nearly Rs. 2500000 million out of which value added products comprise Rs. 800000 million. The share of food processing industries in the gross value of he manufacturing sector is output has been estimated at 15.19 percent. This is pathetically

low considering the fact that the country is the world's largest or second largest produces of many food items including fruits vegetables and milk. Around 1.8-2.0 percent of India fruit and vegetable output is processed in the country compared to 30 percent in Thailand 80 percent in brazil and about 90 percent in countries like the UK and the US.

According to Dr. S. Gurusamy. "The establishment of agro industries in rural areas may reduce the migration of people from rural to urban areas. More over, the development of agro-industries may be used as one of the effective tools in bringing prosperity in rural areas as they may give the desired "push" to agriculture."[2]

These units will act as a source of demand as well as supply to agriculture in the sense that they may absorb the farm produce and supply inputs to agriculture.

Agro industries appear to have forward and backward linkages and spread positive effects. Their establishment may lead to improve the infrastructure facilities in backward areas and may create potential for some other industries.

Review Of Literature

Many agricultural commodities are to be processed to the consumable form before disposal to the final consumer. Considering processing is as important as production, the processing adds value to the products and creates employment opportunities. Our farmer's efforts in using green revolution technologies are strengthening our food and income security in addition to generating surplus production while a part of the surplus production is stored in our buffer stock the remaining portion is yet to attract the value addition chain the key for agricultural growth in the context of liberalization. Presently agro-based industries in India account for 19 percent of total industrial output and provide employment to the extent of 14 percent of total industrial workers and contributing 18 per cent of G.D.P. (Sekhon et. Al. 2003).

(Bhalla et. al. 1990. Chadha. 2004) Agricultural transformation through creation of forward and backward linkages with industry is recently emerging phenomenon. The forward and backward linkages between agriculture and industry have also a pace.

Mostly markedly in the regions where agriculture has been growing at a fast pace due to structural change in Indian economy during 1990's.

(Acharya, 1997 and Subrahmanyam, 1995). Agro –based industries not only stimulates value addition but also generates desired and indirect employment particularly in rural areas of the country to absorb the surplus workforce.

(Shiv Kumar et. al. 1999) Moreover the symbiotic relationship and linkage between agriculture and agro-processing industries not only prevent the proverbial rural exodus but also promote overall development and rural urban interaction.

(Shrivastava. 2000) The capital employment ratio in the processing units is also quite favourable to the labour intensive methods of operation that the highly populated country like India needs so badly provide employment opportunities to her masses, particularly the rural poor.

Study the role of agro-processing industries in economic development.

Kamala and Khote (1966) reported that development of agricultural processing industry makes agriculture a commercial proposition and also increase proposition of construction, banking and credit, higher education, etc.

Pant and Pal (2004) examined economic viability and employment generation of agro-based units for groundnut in southern Rajasthan. They concluded that processing units utilized about 51 percent of their installed capacity and maximum utilization capacity was in medium units i.e. 62 percent. Of the ground nut pods processed 26.09, 32.58 and 7.04 percent were shells oil and oil cake respectively and remaining 4.29 percents went as wastage. The difference in the size of processing units had no influence on recovery of oil, oil cake and shell. Employment generated in groundnut processing was 464, 1736 and 6931 man days on different categories of processing units. While the employment generated by processing one quintal of groundnut in small medium and large units were 4.94, 3.76 and 1.83 hours respectively.

Methodology

Sampling and Collection of data

The present study is based on secondary data. Secondary data of production and employment and capital for the years 1966-67 to 2004-19 were collected from different issues of statistical abstract of Haryana. Data for the production of Haryana for the year of 2004-2019 were collected from different bulletins published by agro-industries corporation. The data pertaining to agriculture produce were collected from Haryana state agriculture Marketing Board, Panchkula. The detailed information like production and employment related to various agro industries in Haryana state was collected from various issues of Statistical Abstract of Haryana and agro- industries department Govt. of Haryana, Chandigarh for the period 2004-2019.

To fulfill the second third and fourth objectives was selected purposively keeping in view the large number of agro based units. The secondary data of selected agro-based industries i.e. wheat, cotton

ginning, gram processing rapeseed and mustard processing and rice mills working in Haryana were collected through District statistical department of Karnal. The secondary data of Agro-industries were collected from District industries corporation, Medium small scale industries department, Khadi and village industry department at Karnal.

Analytical Tools and Techniques.

To draw meaningful inferences from the collected information the analytical tools like percentage average etc. were used. Further, to avoid the fluctuation in the data, triennium ending averages were calculated. The growth rates in relation to production of various crops as well as employment of agro-based industries were computed by fitting exponential function.

$Y=ab^t$

In log linear form

Log Y= log a + t log b

The linear trend equation & were also fitted for production and employment of different agro based industries for the period 2004-81 to 2004-05 by fitting the linear equation.

$Y= a+b^t$

Where Y dependent variable for which growth rate is calculated i.e. production of various crops of agriculture produce, production and employment pattern of agro-based industries.

a= constant

b = Regression coefficient

t = Time period in years

CGR (Compound growth rate)= (Antilog b-1) X 100

Results:

The present study derived from the data collected and analysed by applying different empirical statistical tools have been presented in this chapter. First of all information regarding triennium ending averages of production of major industries in Haryana state were collected for the period triennium ending 1985, 1995 and 2019 to avoid fluctuations in data. The production pattern and growth rates of production of various industries were also worked out for the state as a whole for the period 1966-67 to 2004-81, 1981-82 to 1990-91, 1991-92 to 2004-05 and 1966-67 to 2004-05 to ascertain trend in different periods.

The averages of triennium endings 1985, 1995 and 2019pertaining the levels of production and employment, capital of various agro industries in the state were also studied for the different periods. Further growth rates for production and employment of agro industries were computed for periods 2004-81 to 1989-90, 1990-91 to 2004-05 and 2004-81 to 2004-05 while linear trend was fitted for the period as a whole i.e. 2004-2019.

Table – 1 Number of Agro-based Industries.

Sr. No.	***District***	**Oil Mill**	***Dal Mill***	Cotton Ginning Mill
1.	Ambala	25	03	-
2.	Bhiwani	31	24	24
3.	Faridabad	28	08	-
4.	Fatehabad	15	01	44
5.	Gurgaon	24	04	-
6.	Hisar	105	33	133
7.	Jhajjar	07	-	-
8.	Jind	27	4	32
9.	Kaithal	01	-	-
10.	Karnal	06	-	-
11.	Kurukshetra	02	-	-
12.	Mohindergarh	24	10	-
13.	Panipat	01	-	-
14.	Panchkula	05	-	-
15.	Rewari	19	01	-
16.	Rohtak	11	04	-
17.	Sirsa	30	07	-
18.	Sonipat	11	-	-
19.	Yamuna Nagar	03	-	-

Source: Statistical Abstract of Haryana

Production Pattern Of Agro Industries:

The data presentation table-2 revealed the production of cereals and pulses processing, village oil ghani, gur and Khand sari industries has declined in 1985, 1995 and 2019.

Table – 2 Production Of Various Agro Industries In Haryana

Particulars	Triennium ending 1985	Triennium ending 1995	Triennium ending 2019
Processing of cereals and pulses industry ('000 quintals)	49.96	40.96	35.12
Village oil ghani industry ('000 quintal)	8.19	2.01	0.96
Gur-Khandsari ('000 quintals)	155.17	75.16	64.67
Fibre industry (Rs. in lakh)	42.10	146.52	131.33
Fruit preservation industry (Rs. in Lakh)	5.05	30.86	116.12
Khadi Industry (Rs. in lakh)	27.07	310.78	324.17

Source: Statistical Abstract of Haryana

Table-3 Growth Rate Of Production Of Agro Industries In Haryana

Particular	Period-I 2004-81 to 1989-90	Period II 1990-91 to 2004-05	Period III 2004-81 to 2004-05
Processing of cereals and pulses industry	2.50	-2.96	-3.47
Village oil and Ghani industry	-11.52	-7.85	-20.22
Gur Khand sari industry	-11.10	-3.21	-5.24
Fibre industry	18.22	-2.05	6.48
Fruit preservation industry	24.36	10.53	12.37
Khadi industry	4.12	2.04	11.29

Source: Statistical Abstract of Haryana

The date depicted in table-3 has also shown the similar trend of production in the cereal and pulse, village oil ghani industry and gur and Khandsari industry have observed negative growth rates. While the growth rates of fibre, fruit preservation and Khadi industries remained positive during all the three period with the exception of negative growth in production of fibre industry second period. But the rate of growth has slowed down during second period in these three agro industries and further improved in third period but still remaining lower the first period.

Table-4 Linear Trend In Production Of Agro-Industries In Haryana 2004-2019

Particulars	Trend equation	R^2
Processing of cereals and pulses industry	Y=66.1430-1.4467 x (0.5449)	0.313
Village oil ghani industry	Y=23.5939-11.3296 x (0.4874)	0.291
Gur-Khandsari Industry	Y=132.097-3.8398 x (2.6057)	0.338
Fibre-Industry	Y=68.1926+4.4656 x (2.3116)	0.506
Fruit Preservation Industry	Y=17.695+4.6895 x (1.1143)	0.497
Khadi Industry	Y=25.5058+17.4058 x (10.1287)	0.736

Significant at 5 percent pattern of probability
(Source: Statistical abstract of Haryana)

Linear Trend:

It is obviously clear from the data depicted in table-4 that there was a positively significant linear relationship between dependent variable (production) in agro industries of fibre, fruit preservation and Khadi industry with independent variable time. While the significant negative trend was observed in case of cereal and pulses processing industries.

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