

A Comprehensive Study on Agricultural Growth and Plan Expenses of Haryana State

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ABSTRACT

In this paper, the author has studied about the agricultural growth and plan expenses of Haryana. As per the Statistics reports, Haryana has recorded excellent performance in agriculture after its formation in 1966. The potential of the high yielding variety seeds-fertilizer technology has been exploited to a great extent. As a result, production and productivity of wheat and rice including mustard and cotton increased significantly. These developments have made Haryana a second ranking state in agricultural development in India. This breakthrough in agriculture has created problems such as resource degradation. The findings of this study suggest that state government has reduced capital expenditure in agriculture, which is crucial for creating infrastructural facilities in the present atmosphere of globalising agriculture. Hence, urgent attention should be given to this aspect and it should be strengthened without losing time. In view of scarce availability of literature on this subject at the state level, present report would be of immense utility for the policy makers, researchers and professionals.

Keywords: agricultural development, water, potential, land.

INTRODUCTION

Agriculture in India is beset with problems like stagnant and low productivity, continuously rising prices of food items and farm distress due to unviable cultivation. Allocation of resources is an important instrument to carry out corrections and a medium to realize objectives of public policy. After realizing, government has started putting more emphasis on agriculture in resource allocation but emphasis also has to be on fixing the system/outcomes. Sometimes, it needs more fixing than money. Therefore, it seems urgent for the government to have an appraisal of its expenditure in terms of achieving physical targets along with financial allocations. Many times, financial targets of programmes are achieved but physical targets as crucial as supplying seeds remain partially attained. Absence of this mechanism appears to be one of the reasons for lower outcomes. This common study was formulated to understand the flow of budgetary resources in agricultural sector. Our Centre was assigned the responsibility for carrying out this study for Haryana. The present report on Haryana is a part of this study. The specific objectives of the study are as under.

- To examine trends in budgetary allocation of resources to the agricultural sector as a whole and in the sub-sectors of agriculture.
- To document schemes under operation in Haryana to accelerate development of agricultural sector.
- To analyse the impact of these schemes on agricultural sector in the state.

The study on budgetary expenditure requires a wide range of information on relevant indicators. The available information on these aspects is limited. A serious attempt has been made to gather information from all secondary sources. The study is primarily based on data collected from Statistical Abstract of Haryana, Statistical Abstract of India and Agricultural Statistics at Glance. These are supplemented with the information obtained from Directorate of Agriculture and Planning Department, Government of Haryana, Haryana. The analysis covers a period from 1985-86 to 2004-05. It is further sub-divided into two sub-periods. First period/pre-reform period extends from 1985-86 to 1990-91 and second period/reform period from 1991-92 to 2004-05. The compound growth rates and coefficients of variation are used for analysis of the time series data on various aspects related to the problem. The compound growth rates are calculated by fitting a log linear function ($\log y = \log a + b \log X$).

Agriculture contributes around 19% of the GDP and employs almost 52% of the work force in India. But, this sector has been languishing in growth despite the overall growth of more than 8% during the last few years. Unfortunately, it could not achieve even a modest growth target of 4% despite its overwhelming importance in reducing poverty and providing food security to the nation. It has grown at the rate of 2.5% per year during the Ninth (1997-2002) and Tenth Five Year Plan periods (2002-07). This is the result of inadequate attention of the policy in allocation of resources and evaluating the outcomes. The allocation of planned resources to agricultural sector during the Tenth Five Year Plan was 3.75 per cent of total allocation. The share of agriculture remains almost the same during the Eleventh Five Year Plan too. The low provision to agriculture in comparison to other sectors reflects poor realization of the needs of agricultural sector. Particularly, public investment in this sector has been low. It has grown at the minimal rate of 0.74% per annum between 1990 and 1999 (Bathla and Thorat, 2006). Productivity increase in agriculture is also considerably dependent on capital formation both from the public and private sectors. Unfortunately, Gross Capital Formation (GCF) in agriculture as a proportion to the total capital formation has shown a continuous decline. It declined from 8.6 per cent in 1999-00 to 5.8 per cent in 2006-07. GCF in agriculture relative to GDP in this sector has, however, shown an improvement from 9.6 per cent in 2000-01 to 12.5 per cent in 2006-07. This needs to be raised to 16 per cent during the Eleventh Five Year Plan to achieve the target growth of 4 per cent in this sector (Economic Survey, 2007-08)

REVIEW OF LITERATURE

Haryana state and the green revolution in Indian agriculture were born simultaneously in 1966-67. This year was a turning point in the course of development of agriculture in the state. For understanding this phenomenon, an insight into the past is essential. A scant literature is available on the development of Haryana (Gupta 1978; Singh, 1976, 1986; Singh, 1996). A few attempts have been made to study economic development in Haryana (Gupta & Gupta 2000; Singh & Kaur, 2004). Most of these studies have been carried out after the formation of Haryana in the year in 1966. Some of these studies have analysed issues related to agricultural development of the state and these contain some component of resource allocation. Here we will focus on issues related to budgetary expenditure and agricultural development. Gupta (1978) has analysed agricultural development in Haryana from 1952-53 to 1975-76. Prior to the formation of the state, three Five Year Plans had an appreciable effect on the growth of agriculture.

The agricultural production in Haryana between the triennium ending 1955-56 and triennium ending 1965- 66 recorded a compound growth rate of 2.8 per cent per annum. This growth rate although compared favourably with the all-India growth rate of 2.2 per cent, was far below the growth rate of 5.6 per cent achieved in Punjab. Moreover, growth rate was much faster in Haryana after 1966-67. The findings of the study reveal that annual compound growth rate for foodgrains' production (4.3 per cent) was lower than that of non-foodgrains (5.6 per cent) before 1965-66. After this year, growth rate in the production of foodgrains (6.3 per cent) was more than twice for non-foodgrains (2.7 per cent). This was due to the adoption of HYV seeds for the main cereal crops. The growth of agricultural production has resulted from increase in area under cultivation, land reclamation, increase in crop intensity and changes in crop pattern induced by all-round improvement in irrigation facilities.

In order to ensure that gains from increasing agricultural production are equitably shared, greater attention should be given to special programmes already initiated in the state for providing better employment and income earning opportunities to weaker sections of the society and less developed areas of the state. Singh (1976) has carried out a detailed study on agricultural development in Haryana. He has mentioned that agriculture has dominated the rural landscape and claimed the best part of the cultivator's waking hours for centuries in Haryana. The state displays an extreme degree of diversity in her agricultural land utilization changes, which occurred therein. Farming exhibits a complete list of commercial or subsistence farm products (fine or coarse foodgrains) and a high degree of diversification on account of an extraordinary diversity in agricultural potentials in terms of climate, capability of soil, extent of irrigational facilities, magnitude of technology and size of operational holdings.

The author has given some suggestions for solving the food problem in India. The most suitable agricultural strategy seems to be raising the level of agricultural production per hectare by reaping multiple crops from the same field. The scope for horizontal expansion of the cultivated area is sombre as Haryana has already reached the limit of physical frontiers in cultivation since percentage of cultivated area to total area is about 83 per cent, which is highest in the country. Moreover, extent of cultivable wastelands is very meager and bringing marginal lands under cultivation will require heavy investment, which can be justified only on the basis of appropriate investment profit ratio. Hence, for increasing food production at home, sole option seems to appreciate the contemporary cropping patterns or emerging ones and their comparability to the

recommended patterns and to suggest changes in the proportion of area under various crops at a point of time, i.e. during a cropping season and an agricultural year.

It is highlighted that potential of the new seed-fertilizer technology has been fully exploited in Haryana. The limited scope for expansion of irrigation facilities by canals was circumvented by increasing number of tube wells and pumping sets from about 28,000 to over five lakh. Haryana has been catapulted in the forefront of agricultural scene prevailing in the country. The high growth in various sectors of economy could help in visualizing overall perspective. Economic growth during 1981- 91 is more representative as Haryana faced a serious flood situation in 1995 along with other parts of the country. It has lately been experiencing recession in the industrial sector.

During the period 1981-91, real GSDP grew at 6 to 7 per annum, sustained by a 7-8 per cent per annum growth in the industrial and service sectors and a 4 per cent growth in the agricultural sector. It has been contributing about 3 per cent to the national income (GDP), which is more than 50 per cent of its share in population. The share of the industrial sector in the GSDP in 1980-81 was around 20 per cent, which rose to 25 per cent in 1997-98. Conversely, though agriculture continues to have a dominant place in economy, its share in GSDP has come down from 53.8 per cent in 1980-81 to 37.2 percent in 1997-98. The share of the service sector has appreciated from 26.7 per cent to 37.2 per cent during this period.

A recent study by Singh and Kaur (2004) has reviewed important indicators of economic development in Haryana. These include state income by industrial origin, human resource development, pattern of development in various sectors and infrastructural facilities. One chapter is devoted to agricultural sector. It analyses development of agriculture in Haryana on the basis of various output and input indicators such as crop pattern, irrigation, use of modern technology, etc. The role of state in agricultural development has also been discussed in the analysis. Some basic issues related to agricultural development have been highlighted at the end of this chapter. They have asserted that strong, simple, hard working and patriotic people of Haryana have been doing their best to make Haryana a model state of the country in every field of economic development. Haryana has marched towards modernity with leaps and bounds. Much more, however needs to be done. Some of the assertions given below are noteworthy.

The occupational distribution of workers is the most important determinant of social, cultural, economic as well as environmental development of a region. It is responsible for social progress, creation of wealth, development of science and technology. Economic development of a region depends on proportion of working force engaged in primary, secondary and tertiary sectors. Agriculture is important source of employment in Haryana and around 52 per cent of workers earned their livelihood from this sector in 2001. Like all India, proportion of workers was the highest in agriculture followed by other workers and household industry workers (Table-1.).

Table 1: Area, Population and Work Participation Rate in Haryana and India (2001)

Item	Haryana	India
I. Area	2001	2001
Total Area (000' Sq. km.)	44 (1.34)	3287 (100.00)
II Population		
Total Population (lakh)	211.5 (2.05)	1028737 (100.00)
Sex Ratio (No.)	861	933
Rural Population (lakh)	150.29	742618
% of Rural Population to Total Population	71.08	72.22
Population Density per Sq. km.	478	325
Literacy Rate (%)	67.91	65.00
III. Workers		
Work Participation Rate (%)		
Male	50.47	51.90
Female	27.30	25.70
All	39.76	39.30
% of main Workers to Total Workers	74.49	77.80
% of Marginal Workers to Total Workers	25.51	22.20

Brackets show percentage of all India Source: Statistical Abstract of India, 2004

The economic development of any area is best reflected in infrastructural facilities. A good infrastructure can be achieved by investment in basic amenities like roads, power, water and communication. The infrastructural development of Haryana has been one of the important components of development planning but so far, it has not been satisfactory. A serious effort is needed to enhance these facilities to promote economic development.

AGRICULTURAL DEVELOPMENT IN HARYANA

Agricultural development has been impressive in Haryana during the study period. This is an important sector because it employs more than 50 per cent of workers and provides livelihood security to the major proportion of population in the rural areas. At the outset, we will discuss land use pattern, which is manifestation of combined effect of various physio-climatic conditions in the region. Table-2 indicates that net sown area occupies dominant proportion of land and covers more than 80 percent of the reported area in the state. It may be noted (Table-2) that share of forests, land not available for cultivation, permanent pastures and other grazing lands in total geographical area of Haryana has declined over the reference period. The share of forestland has dropped from 3.78 per cent to 1.01 per cent. This is not appropriate for the sustainable development of agriculture in the state. Also, area not available for cultivation has declined due to utilization of land for habitation and industrial purposes. On the other hand, proportion of cultivable wastelands has increased.

Table 2: Land Use Pattern in Haryana (1985-86 to 2004-05)

Year	Forests	Not available for cultivation	Permanent pastures & other grazing lands	Land under misc. tree crops & grooves	Cultivable waste lands	Fallow lands	Current fallows	Net sown area	Cropping intensity	% of net sown area as irrigated
1985-86	3.78	3.55	0.64	0.02	0.52	0.00	3.83	82.88	155	62.2
1986-87	3.78	3.92	0.68	0.05	0.52	0.00	12.02	73.63	156	65.4
1987-88	3.78	3.53	0.59	0.07	0.57	0.00	4.76	81.17	145	70.8
1988-89	3.78	3.53	0.59	0.07	0.57	0.00	4.76	81.17	169	71.0
1989-90	3.84	2.37	0.48	0.09	0.66	0.00	4.00	82.03	157	73.9
1990-91	3.86	2.22	0.53	0.09	0.48	0.00	3.86	81.66	166	72.7
1991-92	3.88	2.33	0.57	0.09	0.98	0.00	5.84	80.00	159	76.0
1992-93	3.91	1.97	0.71	0.09	0.75	0.00	5.48	79.80	168	75.3
1993-94	3.82	2.08	0.66	0.09	0.87	0.00	4.78	80.32	166	75.8
1994-95	2.52	2.01	0.62	0.09	0.32	0.00	3.57	81.46	168	76.4
1995-96	2.50	2.14	0.55	0.09	0.52	0.00	3.55	81.54	167	77.0
1996-97	2.61	2.00	0.55	0.09	0.52	0.00	3.11	82.18	167	76.0
1997-98	2.61	1.95	0.57	0.11	0.52	0.00	3.27	82.58	169	76.8
1998-99	2.62	2.03	0.55	0.11	0.84	0.00	3.28	82.57	174	78.3
1999-2000	2.61	2.18	0.50	0.11	0.84	0.02	4.98	80.73	170	81.3
2000-2001	2.61	2.32	0.77	0.16	0.52	0.00	5.27	80.10	173	82.0
2001-02	1.03	2.31	0.57	0.16	0.41	0.00	3.96	81.56	177	83.9
2002-03	1.03	2.26	0.57	0.14	0.69	0.07	5.33	79.06	175	85.8
2003-04	1.03	2.29	0.57	0.14	0.80	0.09	4.39	80.00	181	84.0
2004-05	1.01	2.19	0.57	0.14	0.82	0.25	4.60	80.64	183	NA

Source: Ibid

Within the category of fallow lands, share of fallows as well as current fallows has increased between 1985-86 and 2004-05. The net result has been a decline in the percentage of net sown area from 82.88 per cent to 80.64 percent. The cropping intensity has improved with increase in multiple cropping. The resultant increase in the GCA over the entire period has been 14.05 per cent. The GCA increased from 5601 thousand hectares in 1985-86 to 6388 thousand hectares in 2004-05. Haryana has 0.82 per cent of geographically area under cultivable wastelands. These can be used for growing fruits. This will help in increasing income of the farming community. These lands can be brought under cultivation through proper planning and execution. These areas can also be utilized for plantation of fruits and flowers. Fallow lands comprised less than 1 per cent of the reported area but current fallows constitute 4.60 per cent of geographical area. It is quite high and should be reduced through policy interventions.

The net sown area formed 82.88 per cent of the geographical area during 1985-86. Out of this area, around 55 per cent was sown more than once. The percentage of net irrigated area to net sown area in Haryana was 62.2 per cent and it has been constantly rising during the referred years. The share of gross irrigated area in gross cropped area also has been growing simultaneously during the study period. Major sources of irrigation are government canals, tubewells and wells. Other sources like tanks, etc. have very little contribution. In a nutshell, land use pattern has shown some change but it was not perceptible in Haryana during the study period. It may be noted that average size of operational holdings is only 2.13 hectares in Haryana. Around 65 per cent of holdings are marginal and small. The area operated by this category of farmers is less than 2 hectares.

The size of these holdings is tiny and therefore, scale of economies cannot be availed of which makes crop husbandry low income generating proposition. Generally, these farmers opt for wheat rice rotation and grow vegetables as an additional crop but use expensive inputs when it is urgent. They also grow high value crops to augment their income. Urgent policy initiatives are needed for the development of smallholdings. The options like dairying, poultry and horticultural high value crops should be encouraged to increase per unit productivity of the available small pieces of land for cultivation. Growth in Area, Production and Yield of Important Crops We begin with analyzing crop pattern. It indicates percentage of gross cropped area devoted to different crops in a region during an agricultural year. The agro-climatic variations in Haryana are large and hence state is bestowed with a variety of crops.

In dry areas of Bhiwani and Mahendergarh, oilseeds and pulses dominate the crop pattern while in Karnal and Kurukshetra, wheat and paddy are the main crops (Table-3). Wheat (30.37%) followed by gram (13.59%), rice (10.43%) and rapeseed and mustard (6.79%) were principal crops of the state during 1985-86 (Table 3). In addition, cotton and sugarcane were also grown on almost 8 percentage points of gross cropped area. The fact remains that crop pattern in Haryana was dominated by food grains, which occupied 72.19% of GCA in 1985-86. The share of food grains dropped to 67.28% in 2003-04. The proportion of area under wheat and rice increased while gram has indicated a decline of more than 10%. It appeared that traditional crops like pulses and millets lost heavily while wheat, rice, rape and mustard gained significantly. Particularly, pulses lost area by more than 10 per cent during the reference period. This shift could be attributed to expanding irrigation facilities in Haryana.

Table 3: Percentage of GCA under Important Crops in Haryana

Year	Rice	Wheat	Maize	Gram	Total Pulses	Total foodgrains	Rapeseed/ Mustard	Sesamum	Total Oilseeds	Sugar-cane	Potatoes	Cotton
1985-86	10.43	30.37	0.98	13.59	15.11	72.19	6.48	0.11	6.79	1.86	0.18	6.14
1986-87	13.40	38.04	1.16	13.04	14.49	88.34	6.06	0.13	6.34	2.68	0.19	6.56
1987-88	7.72	28.79	0.68	3.33	4.41	52.99	5.44	0.05	5.59	2.37	0.17	8.87
1988-89	10.01	30.39	0.73	10.74	12.11	70.05	6.37	0.08	6.51	2.17	0.18	7.20
1989-90	11.35	32.86	0.73	9.30	10.69	69.71	7.74	0.09	7.91	2.42	0.23	8.35
1990-91	11.17	31.26	0.59	10.97	12.54	68.92	8.00	0.10	8.25	2.50	0.18	8.30
1991-92	11.44	32.42	0.52	5.51	6.99	64.21	11.45	0.08	12.59	2.91	0.23	9.08
1992-93	12.09	33.55	0.54	6.63	7.88	67.85	9.61	0.06	10.22	2.36	0.22	9.11
1993-94	12.98	34.28	0.51	6.97	8.22	66.95	9.91	0.06	10.24	1.92	0.19	9.68
1994-95	13.29	33.15	0.45	6.67	7.92	66.99	9.67	0.05	10.33	1.98	0.20	9.30
1995-96	13.89	33.01	0.44	6.31	7.53	67.30	9.62	0.06	10.23	2.41	0.20	10.91
1996-97	13.67	33.21	0.42	5.68	6.88	66.28	10.09	0.05	11.07	2.67	0.22	10.39
1997-98	14.87	33.49	0.42	5.76	7.04	68.16	9.05	0.04	10.03	2.30	0.12	10.53
1998-99	17.18	34.62	0.32	5.65	6.47	70.92	7.88	0.05	8.32	2.03	0.22	9.22
1999-2000	17.96	38.42	0.33	1.67	2.27	71.14	7.45	0.08	7.67	2.26	0.21	9.02
2000-2001	17.24	38.51	0.25	2.04	2.57	71.03	6.69	0.06	6.77	2.34	0.15	9.11
2001-02	16.26	36.40	0.28	2.26	2.99	67.31	8.49	0.08	8.62	2.55	0.15	9.08
2002-03	15.01	37.57	0.26	0.91	2.19	65.91	10.06	0.16	10.29	3.13	0.17	8.55
2003-04	15.89	36.25	0.26	1.92	3.10	67.28	9.69	0.06	9.90	2.51	0.16	8.23

Source: Ibid

PLAN EXPENDITURE ON AGRICULTURE IN HARYANA

Attaining regional balance in economic development has been one of the important objectives of the Five Year Plans in India. Therefore, a significant proportion of the total expenditure of the Central Government is incurred as plan outlays/expenditures. Thus, plan expenditure is the annual fund allocated by the Central Government to the state governments for development schemes outlined in the on-going Five Year Plan, while the expenditure incurred on maintenance of the projects already created is accounted under the non-plan expenditure. The devolution of resources from the Centre to the states is designed to bridge regional inequality in services and developmental activity. Yet, according to a recent study, (Saksena, 2005) no significant development has been made in terms of per capita and state income. On the contrary, fresh imbalances seem to be cropping up. In such circumstances, it is essential to study the pattern of fund allocation under Five Year plans to each of the state. We have analysed plan outlay to Haryana for the Seventh, Eighth, Ninth and Tenth Five Year Plan.

Table 4: Plan Expenditure on Agriculture and Allied Activities in Haryana

Plan	Expenditure on Agriculture	% to total Expenditure
Seventh Plan(1985-1990)	23929.00	9.53
Annual Plan(1990-91)	6542.00	10.64
Annual Plan(1991-92)	6334.00	9.06
Eighth Five Year Plan (1992-97)	45158.00	9.22
Ninth Five Year Plan (1997-02)	47620.00	5.96
Tenth Five Year Plan (2002-07)	54782.00	4.57

With the active intervention of the Central Government in the economic development of the states, plan outlay has become a major instrument of policy. It is therefore, necessary to gauge the pattern of plan outlay for Haryana. Table-4 presents Plan outlay for Haryana since the Seventh Five Year Plan (1985-90). The share of total expenditure on agriculture and allied activities was 9.53 per cent during the Seventh Five Year Plan. It increased by around one percentage point in the next year (Annual plan, 1990-91). After words, a lower share of total plan outlay was allotted to agriculture and allied activities during the Eighth, Ninth and Tenth Five Year Plans. In the early eighties, highest priority was accorded to crop husbandry. Clearly, outlay on this item (30.51 per cent) is predominant, probably in conformity with the needs of the state. Centre has spent a higher proportion on this item when compared to other activities all through the plans.

Agricultural research and education followed by agricultural finance institutions was the next priority of the government because more than 10 per cent of the outlay was incurred on these items. The plan-to-plan variations in outlay on different items are quite significant. The highest share of total plan outlay on crop husbandry was spent during the Seventh Five-Year Plan and this trend continued in the Eighth, Ninth and Tenth Plans too with its declining share. A further analysis of expenditure on agriculture makes clear that a large part of the variation is due to change in the focus of policy (Table-5). The expenditure on animal husbandry and dairy development were the next items in the Seventh Five-Year Plan outlay of Haryana. The expenditure on these items was 13.00 and 8.98 per cent of the total outlay in 1985-90.

The proportion of Tenth Five-Year plan outlay spent on agricultural research and education was 7.12 per cent. It seems lower in view of the needs of the state. It was found lower in comparison to dairy development and animal husbandry. To conclude, crop husbandry, soil and water conservation, agricultural finance institutions, dairy development and animal husbandry were the most important items of expenditure in the Plan outlay of Haryana.

Table 5: Item wise Percentage of Plan Expenditure on Agricultural and Allied Activities in Haryana

Item	Seventh Five Year Plan	Eighth Five Year Plan	Ninth Five Year Plan	Tenth Five Year Plan
Crop Husbandry	30.51	25.45	24.04	22.33
Soil and Water Conservation	9.07	14.16	15.40	16.21
Animal Husbandry	13.00	12.01	10.09	8.20
Dairy Development	8.98	9.08	10.81	11.62
Fisheries	2.30	2.53	2.71	3.01
Forestry and Wild Life	3.42	3.31	3.61	4.25
Plantation	-	5.41	4.24	3.61
Food Storage and Warehousing	5.05	4.42	5.41	5.68
Agricultural Research and Education	13.58	8.20	4.86	7.12
Agricultural Finance Institute	13.16	12.70	15.22	14.41
Cooperation	0.93	2.73	3.61	3.56
Total	100.00	100.00	100.00	100.00

CONCLUSIONS

The main objective of this study was to analyse growth in the agricultural sector in Haryana. The specific objectives of the study are as under:

- To analyse trends in budgetary allocation of resources to the agricultural sector as a whole and in the sub-sectors of agriculture.
- To analyse schemes under operation in Haryana to accelerate the development of agricultural sector.
- To analyse the impact of these schemes on agricultural sector in the state.

The study on budgetary expenditure requires a wide range of information on relevant indicators. The available data on these aspects are limited. However, a serious attempt has been made to gather information from all secondary sources. The study is primarily based on data collected from Statistical Abstract of Haryana.

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