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STATE BUDGETARY RESOURCES AND AGRICULTURE DEVELOPMENT IN HARYANA

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P R E F A C E

Budgetary allocation of resources is an important instrument of economic policy of the government to accelerate economic growth and reduce disparities. Its size and pattern has great influence on development of various sectors. Agriculture in India is beset with problems like slow growth, 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. With this realization, present study was formulated to analyse growth and pattern of budgetary allocation to the agricultural sector in Haryana. It is based on secondary sources of data.

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 strengthen without loosing 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.

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Introduction

Importance of Budgetary Resources

Public expenditure is an important instrument of economic policy of the government to accelerate economic growth and reduce disparities. Its size and pattern has great influence on development of various sectors. The ideal of welfare state has increased the magnitude of expenditure over the years. It has emerged as an important factor influencing the sectoral growth. The level and composition of public expenditure is determined by the political, social and economic factors. Normally, welfare state would spend on public goods and take care of the growth of agriculture along with promoting manufacturing and tertiary sectors.

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)

I. Objectives and Research Methodology

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 Uttrakhand and Haryana. The present report on Haryana is a part of this study. The specific objectives of the study are as under.

i) To examine trends in budgetary allocation of resources to the agricultural sector as a whole and in the sub-sectors of agriculture.

ii) To document schemes under operation in Haryana to accelerate development of agricultural sector.

iii) 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 ($\log y = \log a + b \log X$).

II. 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 trienniam 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.

Singh (1986) has looked into various aspects of agricultural productivity in Haryana. He states that agriculture occupies a dominant place in the economy of Haryana and is favourably placed in respect of water resources and soil potential. The old and new alluviums are ideal for the production of wheat and rice under irrigated farm conditions. The contribution of Karnal, Kurukshetra and Ambala region in the production of fine foodgrains is significant. Therefore, it is known as granary and the rice-bowl of Haryana. Of the total cropped area, more than two-third is shared by foodgrains. In addition, cash crops such as sugarcane, oilseeds and cotton are also grown. The legumes are gradually loosing area. The introduction of these crops in crop rotation may increase production of fine foodgrains due to complementary relationship between grains and legumes or green manure crops. This will reduce cost of production and improve farm economics. The farmer must

search for the combinations that will provide highest farm business income from his limited land and economic resources. It is imperative to determine the most profitable rotation, by using two variables, namely total value received and production cost per hectare for each crop over a period of three to four agricultural years.

A study by Gupta and Gupta (2000) analysed economic development of Haryana for the past three decades. With 1.3 per cent of the country's area and around 2 per cent of its population, Haryana is one of India's smaller states, a "Lilliput among Titans", but within a span of three decades, it has made remarkable progress in the agricultural and industrial sectors and is front-runner amongst the states in terms of per capita income. Its 44,000 sq. km. area is territorially divided into four divisions.

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 tubewells 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 alongwith 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.

Singh (1996) has reviewed agricultural development and distribution of gains in Punjab and Haryana. The main objectives of the study have been to examine pace and pattern of agricultural development in different regions of Punjab and Haryana and to analyse trend in selected dimensions of income distribution among the farming community of these states. The study covers a period of two decades from 1969-72 and 1989-92. The share of agriculture in net domestic product of

Haryana has declined during this span. The percentage share of agriculture and animal husbandry in net state domestic product of Haryana has dropped to 49.50 per cent in 1990-91 from its earlier level of 54.55 per cent in 1980-81.

Results reveal that there has been a sharp shift in area under different crops. It has occured in favour of those crops, which provide higher returns due to fast increase in productivity, or sharp increase in prices or both. In Haryana, rice wheat, rapeseed-mustard and american cotton have shown faster growth in output. For these crops, growth in area and yield has been impressive but growth in area was comparatively higher. In view of higher proportion of area under rice-wheat rotation in the region first and rice being the most uneconomic consumer of irrigation water, it is experiencing sharp decline in groundwater table and deterioration in agro-economic system. It is therefore, important to reduce area under this crop rotation in order to sustain production and agro-eco-system in the long run.

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.

Growth of agriculture in the state has been remarkable, yet large accumulation of rice and wheat stocks, alongwith distinct shift in the consumption pattern away from cereals to non-cereals is a stark reminder that policy focus needs to be reoriented towards the growth of non-cereal crops, i.e. oil seeds, pulses, fruits, vegetables and dairying. Diversification of agricultural production requires development of rural infrastructure, i.e. transportation, rural roads, improved and reliable power supply, watershed management, cold storage, quality testing labs and institutional support by providing new market facilities, removal of restrictions on

stock limits and agricultural product movements. Agricultural research and extension would also require reorientation to meet the changing requirements of the agricultural sector. Emphasis on minimum price support which has benefited only rice and wheat at the cost of other crops and agricultural products requires a re-examination of policy so that crop diversification gains momentum.

In Haryana, more than 50 per cent of the population in rural areas is engaged in the primary sector, namely, agriculture, livestock, forestry, plantation, etc., for their livelihood. However, for enhancement of production in this sector, advanced technological inputs are in short supply and ecologically inappropriate.

The economy of Haryana is predominantly based on agriculture and its related activities. As a consequence, population in the state is primarily dependent on agricultural activities both for livelihood and employment. But, agricultural economy is unable to provide regular and gainful employment opportunities to the growing labour force and adequate income to the farm households, engaged in this sector.

All these studies conclude that Haryana continued to be a progressive state in terms of agricultural development. The production of important crops has increased. Around 14 per cent of the rural population was below the poverty line in 2004-05 .It is much lower than national figure of 28.30 per cent. Thus, efforts to overcome the initial backwardness of this region through implementation of various schemes initiated by the government have yielded appreciable results. Special efforts are needed to uplift weaker sections of the rural society.

Allocation of budgetary resources can play an important role in accelerating development of agriculture and devising proper policies for this sector. None of the aforesaid studies analysed the pattern and composition of expenditure incurred by the government on agriculture and allied activities in Haryana since its inception. This is a crucial aspect and this study explores issues related to this aspect.

III. Profile of the State

Haryana is located on the northwestern side of the Indian union adjoining Delhi. The state extends from 27°3' to 31°9' of north latitude and 74°6' of east longitude. It is bounded by the states of Punjab and Himachal Pradesh in the north, by Delhi and Uttar Pradesh in the east and by Rajasthan in the South and West.

Haryana has a total surface area of 44,212 square kilometres and is one of the smallest states of the Indian union.

Physiographically, Haryana can be divided into two distinct regions of plains and hills. The plains cover entire state except southern part of Mahindergarh district, southwestern part of Gurgaon district and northeastern part of Panchkula district. The plains can be further sub-divided into eastern and western regions on the basis of aridity. The western plains cover Hissar and Mahindergarh district and have higher degree of aridity. Most of the land is covered by thorny bushes symptomatic of a desert. The unevenness in the surface of these plains is due to sand dunes or sand stumps of different size or extension of rocky hills. The eastern plains extend west of Yamuna river. These plains are remarkably flat. They form a rich fertile tract and produce major proportion of agricultural production of the state. Sometimes, smoothness of the surface is disturbed by the presence of old banks of abandoned channels of streams, which change their course frequently. The slope is from northeast to southwest and west except in Bhiwani. In Mahindergarh and Gurgaon, slope is towards north inhibiting expansion of irrigation.

The Aravalli range is a narrow ridge stretching into Haryana for 90 kms. in the northeast and southwest directions of Delhi. It covers southern parts of Mahindergarh and adjoining areas of Gurgaon district. The Aravalli range at no place is higher than 518 metres above the sea level. The ridge area is generally unfavourable for cultivation due to its rocky nature.

There is not a single perennial river passing through Haryana. The Yamuna along with the Punjab rivers is the main source of irrigation. The Yamuna flows along the eastern boundary of the state. The Ghaggar, which is non-perennial, passes through the state and sometimes causes considerable damage to agriculture. There are other small rivulets like the Saraswati, Chautang and Sahibi and its tributaries like Kanseoti. In most of the months, these are dry except the monsoon season.

The total population of Haryana was 211.5 lakh persons in 2001. The sex ratio was 861, which is significantly lower than the all India level. The density of population defined as number of persons per square kilometre was 478 persons against 325 at the all India level. It is due to the proximity of Delhi and availability of employment opportunities in the primary, secondary and tertiary sectors (Table-1.1).

The literacy rate in Haryana has been 67.91 percent and a little higher than all India level (65 per cent). Among males, 79.25 percent and among females 56 per

cent were literate during 2001. The contribution of women is important for the growth of the economy in Haryana. Therefore, it is essential to provide substantial educational facilities to women in the region. They should be motivated for this purpose.

In Haryana, 39.76 per cent of population was workers. Among males, this proportion was 50.47 per cent while it was 27.30 per cent among females. Work participation rate of population in the state is marginally higher than the all India level. It could be attributed to relatively higher work participation rate of female population. This figure is 27.30 per cent against 25.70 per cent for the all India. Looking at the development of the state, female work participation rate is low. Historically, females in well to do sections of farming community have not been participating in agriculture. Only, females from weaker sections used to look for employment opportunities and this feature has reduced the overall work participation rate in Haryana. However, work participation rate of females in Haryana is marginally above the national level. It could be due to the significant contribution of women in various economic activities, primarily in agricultural based activities.

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-1.2).

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.

Table 1.1

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

Table 1.2
Occupational Classification of Main Workers in Haryana and India (2001)

Category	Haryana		India	
I. Cultivators	No. ('000)	%	No. ('000)	%
Male	1873	32.75	86328	31.33
Female	1173	44.03	41300	32.51
All	3046	36.33	127628	31.71
II. Agricultural Labourers				
Male	712	12.45	57354	20.83
Female	564	21.17	50093	39.43
All	1276	15.23	107448	26.69
III. Household Industry Workers				
Male	126	2.21	8312	3.02
Female	81	3.04	8084	6.36
All	207	2.47	16396	4.07
IV. Other Workers				
Male	3007	52.59	123469	44.82
Female	847	37.79	27571	21.70
All	3854	45.97	151040	37.52
% of Agricultural Workers to Total Workers		51.56		58.40
% of Cultivators to Total Agricultural Workers		70.47		54.29
% of Agricultural Labour to Total Agricultural Workers		29.53		45.71
% of Female Agricultural Workers to Total Agricultural Workers		40.18		38.88

Source: Agricultural Statistics at a Glance, 2008

IV. State Income

The economy of Haryana has recorded excellent growth between 1985-86 and 2004-05. The GSDP of the state at factor cost at current and constant prices has risen at the rate of 14.98 and 5.60 per cent per annum during this period. The growth in GSDP was higher in the first period than second period. It implies that economic reforms have not contributed much in the state income. An examination of year-to-year changes in terms of coefficient of variation indicate that disparity was low in the first period (1985-86 to 1990-91) in comparison to the second period (1991-92 to 2004-05). The overall coefficient of variation at current prices was as high as 71.54 per cent (Table-1.3). The growth of GSDP during the study period is mainly due to good performance of primary, secondary and tertiary sectors. The sectoral analysis reveals (Table 1.4) that GSDP at current prices from primary sector which comprises of agriculture, livestock, forestry, fishing and mining sectors has increased from Rs. 3522 crore in 1985-86 to Rs. 20734 crore in 2004-05 showing an increase of 10.76 per cent per annum. Out of the two periods, period first was better and recorded an increase of 15.12 per cent per year. The GSDP from secondary sector which covers manufacturing, construction, electricity, gas and water supply sectors has risen from Rs 1275 crore in 1985-86 to Rs. 25789 crore in the study period. This sector has registered an increase of 15.71per cent per annum. First period was observed marginally better than the second period. The tertiary sector, which comprises of trade, transport, banking, public administration and other services, has recorded a growth rate of 16.62 per cent per year during the reference period. Its contribution has increased from 26.77 per cent in 1985-86 to 43.95 per cent in 2004-05.

The structural composition of state economy has witnessed significant change between 1980-81 and 2004-05 (Table 1.4). But, agriculture sector still continues to occupy a significant position in the state economy despite continuously declining share of this sector in the GSDP. The importance of agricultural sector is also responsible for good deal of instability in the rate of growth of economy due to fluctuations in agricultural output. Uncertainty in rainfall often causes substantial change in crop production, which eventually results in fluctuation and instability in the growth rate of state economy. The composition of the GSDP at current prices reveals that share of primary sector which includes agriculture and allied sectors has declined from 53.76 per cent during 1985-86 to 24.98 per cent during 2004-05.

Table 1.3

Growth of GSDP in Haryana (1985-86 to 2004-05)

(Rs.Crore)

Year	GSDP at 1993-94 prices	GSDP at current prices
1985-86	15205.44	6551.93
1986-87	15242.05	6885.02
1987-88	15144.40	7738.90
1988-89	18477.68	10014.96
1989-90	18783.26	11146.63
1990-91	20552.34	13636.43
1991-92	21074.08	16279.49
1992-93	21109.39	17343.30
1993-94	22131.30	22131.30
1994-95	23692.13	26244.77
1995-96	24276.30	29788.93
1996-97	27094.82	35642.38
1997-98	27482.65	38649.07
1998-99	29010.69	43534.72
1999-2000	31230.33	48909.93
2000-2001	33367.16	55005.45
2001-02	35180.42	60561.44
2002-03	36938.70	66175.43
2003-04	40131.13	73960.74
2004-05	43501.62	83002.54

Coefficient of Variation

Period	Constant Price	Current Price
Pd. I (1985-86 to 1990-91)	13.62	29.76
Pd. II (1991-92 to 2004-05)	24.34	48.33
Pd. III(1985-86 to2004-05)	32.62	71.54

Compound growth rate

Period	Constant Price	Current Price
Pd. I (1985-86 to 1990-91)	6.90	16.58
Pd. II (1991-92 to 2004-05)	5.87	13.34
Pd. III(1985-86 to2004-05)	5.60	14.98

Source: Various issues of Statistical abstract of Haryana

Table 1.4
Share of Important Sectors in Income of Haryana (1980-81 to 2004-05)

(%)

Year	Primary		Secondary		Tertiary	
	% GSDP	% Work-force	% GSDP	% Work-force	% GSDP	% Work-force
1980-81	53.76	76.48	19.47	5.80	26.77	17.72
1985-86	45.40		24.60		30.01	
1986-87	43.98		24.46		31.65	
1987-88	39.20		25.97		34.84	
1988-89	41.95		26.78		31.26	
1989-90	43.32		24.47		32.21	
1990-91	44.10	73.87	24.82	8.18	31.08	17.95
1991-92	44.68		23.21		32.10	
1992-93	45.79		21.62		32.59	
1993-94	42.44		26.24		31.32	
1994-95	41.31		27.83		30.85	
1995-96	36.90		31.44		31.65	
1996-97	37.95		29.77		32.27	
1997-98	35.08		30.90		34.02	
1998-99	34.81		29.85		35.33	
1999-2000	32.88		29.56		37.56	
2000-2001	31.10	51.56	29.15	2.47	39.75	45.97**
2001-02	28.59		30.20		41.22	
2002-03	26.85		30.87		42.28	
2003-04	26.72		30.74		42.54	
2004-05	24.98		31.07		43.95	
COMPOUND GROWTH RATE						
Pd. I (1985-86 to 1990-91)	15.12		16.00		16.60	
Pd. II (1991-92 to 2004-05)	8.39		15.92		16.12	
Pd. III (1985-86 to2004-05)	10.76		15.71		16.62	

Note: Work-force data are available only for Census years (1981, 1991 and 2001)
* Household Industry Workers
** Other Workers
Source: Ibid

Secondary sector occupies an important place in the state economy and it has witnessed a considerable improvement in its share overtime. Its contribution has increased from 19.47 per cent during 1980-81 to 31.07 per cent during 2004-05, reflecting a healthy sign of industrialization in the state. Tertiary sector which is a combination of different services like trade, transport, banking, public administration, education, health, etc. has also witnessed significant, increase in its' share. Its share in the GSDP at current prices has increased from 26.77 per cent in 1980-81 to 43.95 percent in 2004-05.

In a nutshell, composition of the GSDP of Haryana reveals that share of primary sector is continuously declining whereas the shares of secondary as well as tertiary sectors are continuously rising. It implies that state economy is shifting from agriculture to manufacturing and service sectors, which is a sign of structural change. This phenomenon has influenced proportion of workforce employed in the primary, secondary and tertiary sectors. But, decline in the share of agricultural sector in the GSDP and dependence of work force on this sector do not coincide. It was recorded significantly higher for the first indicator in comparison to the second indicator.

V. 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 out set, we will discuss land use pattern, which is manifestation of combined effect of various physio-climatic conditions in the region. Table-1.5 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-1.5) 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.

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-1.6).

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 1.6). 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 1.5

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: Source: Ibid

Table 1.6

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

Table 1.7

Percentage Change in Area Cultivated 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	-	-	-	-	-	-	-	-	-	-	-	-
1986-87	7.53	4.77	-1.09	-19.71	-21.84	2.38	-21.79	-1.61	-19.74	20.44	-9.09	10.76
1987-88	-26.07	-2.88	-25.05	-67.23	13.13	-23.05	15.15	-50.82	-60.94	13.39	14.44	9.19
1988-89	29.59	5.55	7.13	222.38	16.45	32.21	17.22	56.67	174.52	-8.15	4.85	4.09
1989-90	6.61	1.65	-5.50	-18.53	14.15	-6.46	14.14	4.26	-17.05	4.74	20.37	9.01
1990-91	3.07	-0.38	-15.53	23.49	9.33	3.55	8.32	24.49	22.83	7.96	-19.23	4.03
1991-92	-3.66	-2.39	-16.95	-52.76	43.56	-12.32	34.63	-27.87	-47.56	9.54	23.81	3.05
1992-93	11.05	8.73	9.00	26.48	-14.67	11.04	-11.85	-25.00	18.61	-14.52	0.77	5.34
1993-94	6.73	1.54	-5.08	4.49	-0.52	-1.97	2.44	0.00	3.53	-19.22	-13.74	5.63
1994-95	5.44	-0.42	-10.03	-1.38	3.93	3.05	0.54	-9.09	-0.71	6.26	3.54	-1.07
1995-96	4.26	-0.66	-3.35	-5.75	-1.24	0.21	-0.78	26.67	-5.19	20.96	0.85	17.06
1996-97	0.06	2.28	-1.15	-8.39	10.07	0.13	6.63	-13.16	-7.05	12.67	11.86	-4.76
1997-98	10.02	1.98	1.56	2.55	-8.40	4.01	-9.25	-18.18	3.44	-12.66	-43.94	1.77
1998-99	18.86	6.37	-23.37	0.88	-14.61	7.04	-10.43	11.11	-5.43	-9.48	89.19	-7.76
1999-2000	-0.27	5.87	0.50	-71.88	-12.05	-4.31	-9.84	63.33	-66.60	6.25	-9.29	-6.69
2000-2001	-2.66	1.65	-23.38	24.00	-10.51	1.27	-8.95	-28.57	14.93	5.15	-26.77	0.74
2001-02	-2.54	-2.33	16.23	14.46	31.52	-2.09	31.21	37.14	20.13	12.73	3.23	1.28
2002-03	-11.85	-1.43	-11.17	-61.61	14.09	-6.47	13.16	95.83	-30.06	17.25	7.29	6.67
2003-04	12.09	2.13	4.40	124.50	1.85	8.05	2.01	-61.70	50.34	-15.19	1.94	1.54

Source: ibid

Table-1.8

Growth in Acreage under Important Crops in Haryana

(Area 000' hect.)

Year	Rice	Wheat	Maize	Gram	Total Pulses	Total foodgrains	Rapeseed/Mustard	Sesamum	Total Oilseeds	Sugar-cane	Potatoes	Cotton
1985-86	584.00	1701.30	54.90	760.90	846.30	4043.40	363.00	6.20	380.10	104.20	9.90	344
1986-87	628.00	1782.40	54.30	610.90	679.20	4139.80	283.90	6.10	297.10	125.50	9.00	381
1987-88	464.30	1731.00	40.70	200.20	265.30	3185.50	326.90	3.00	336.10	142.30	10.30	416
1988-89	601.70	1827.00	43.60	645.40	728.30	4211.50	383.20	4.70	391.40	130.70	10.80	433
1989-90	641.50	1857.20	41.20	525.80	604.10	3939.40	437.40	4.90	446.80	136.90	13.00	472
1990-91	661.20	1850.10	34.80	649.30	742.00	4079.30	473.80	6.10	488.50	147.80	10.50	491
1991-92	637.00	1805.80	28.90	306.70	389.10	3576.60	637.90	4.40	701.30	161.90	13.00	506
1992-93	707.40	1963.40	31.50	387.90	461.50	3971.50	562.30	3.30	598.40	138.40	13.10	533
1993-94	755.00	1993.60	29.90	405.30	477.80	3893.30	576.00	3.30	595.30	111.80	11.30	563
1994-95	796.10	1985.30	26.90	399.70	474.40	4011.90	579.10	3.00	618.70	118.80	11.70	557
1995-96	830.00	1972.10	26.00	376.70	449.80	4020.50	574.60	3.80	611.00	143.70	11.80	652
1996-97	830.50	2017.00	25.70	345.10	418.10	4025.80	612.70	3.30	672.50	161.90	13.20	621
1997-98	913.70	2057.00	26.10	353.90	432.50	4187.10	556.00	2.70	616.00	141.40	7.40	632
1998-99	1086.00	2188.00	20.00	357.00	409.00	4482.00	498.00	3.00	526.00	128.00	14.00	583
1999-2000	1083.10	2316.50	20.10	100.40	136.60	4289.00	449.00	4.90	462.60	136.00	12.70	544
2000-2001	1054.30	2354.80	15.40	124.50	157.00	4343.50	408.80	3.50	414.00	143.00	9.30	548
2001-02	1027.50	2299.90	17.90	142.50	188.60	4252.90	536.40	4.80	544.50	161.20	9.60	555
2002-03	905.70	2267.10	15.90	54.70	131.90	3977.70	607.00	9.40	621.20	189.00	10.30	518
2003-04	1015.20	2315.40	16.60	122.80	198.30	4298.00	619.20	3.60	632.70	160.30	10.50	526
Compound growth -rate												
Pd I (1985-86 to 1990-91)	2.73	1.72	-8.32	-0.21	0.02	0.50	8.29	-0.82	7.81	5.65	4.21	7.38
Pd II (1991-92 to 2003-04)	3.87	2.05	-5.99	-13.11	-10.28	1.07	-1.00	3.58	-1.52	1.76	1.97	0.32
Pd III(1985-86 to2003-2004)	4.10	1.84	-6.65	-9.76	-8.00	0.60	2.64	-0.71	2.58	1.43	-0.07	2.39

Source: Ibid

Table-1.9
Growth in Production of Important Crops in Haryana

(000' tonnes)

Year	Rice	Wheat	Maize	Gram	Total Pulses	Total foodgrains	Rapeseed/ Mustard	Sesamum	Total Oilseeds	Sugar-cane	Potatoes	Cotton
1985-86	1633.00	5260.00	64.00	625.00	686.60	8146.60	26.00	2.60	287.80	501.00	145.90	745
1986-87	1543.00	5057.00	67.00	413.00	467.10	7628.10	220.00	2.20	228.30	684.00	131.90	903
1987-88	1077.00	4861.00	34.00	67.00	112.40	6311.40	329.00	0.90	333.70	524.00	159.40	690
1988-89	1443.00	6225.00	42.00	604.00	673.50	9504.50	480.10	1.60	484.20	658.00	171.10	846
1989-90	1750.00	5907.00	60.00	367.00	429.50	8708.50	431.00	1.80	434.80	736.00	209.00	1191
1990-91	1834.00	6436.00	49.00	469.00	541.70	9558.70	634.00	2.00	638.00	780.00	164.80	1155
1991-92	1803.00	6496.00	47.00	202.00	273.10	9078.10	662.00	1.30	757.90	905.00	235.40	1341
1992-93	1880.00	7108.00	55.00	260.00	326.10	10281.10	518.00	1.20	558.50	672.00	219.50	1411
1993-94	2061.00	7217.00	36.00	403.00	468.70	10242.70	798.00	1.00	822.90	646.00	189.60	1124
1994-95	2230.00	7297.00	44.00	440.00	516.30	10972.30	802.00	1.00	860.50	696.00	160.00	1371
1995-96	1847.00	7291.00	48.00	381.00	450.70	10171.70	329.00	1.00	783.10	809.00	161.60	1284
1996-97	2463.00	7826.00	44.00	276.00	346.00	11448.00	894.00	1.10	985.10	902.00	179.00	1102
1997-98	2556.00	7528.00	50.00	309.00	376.00	11332.00	368.00	0.90	455.90	750.00	67.70	1107
1998-99	2432.00	8568.00	39.00	294.00	323.00	12105.00	615.00	1.00	653.00	701.00	213.00	874
1999-2000	2583.00	9650.00	48.00	58.00	78.20	13065.00	595.00	1.50	604.60	764.00	199.80	1304
2000-2001	2695.00	9669.00	34.00	80.00	99.80	13294.80	560.00	1.00	562.80	817.00	141.20	1315
2001-02	2726.00	9437.00	47.00	122.00	148.30	13298.30	800.00	1.40	805.40	927.00	203.10	1383
2002-03	2468.00	9188.00	29.00	41.00	82.80	12328.80	697.00	3.90	705.60	1065.00	291.90	1038
2003-2004	2790.00	9114.00	41.00	100.00	143.10	13193.10	965.00	1.00	976.80	928.00	256.90	1407
Compound growth -rate												
Pd I (1985-86 to 1990-91)	3.64	5.04	-4.07	1.18	1.02	4.70	6.9	-3.75	19.67	7.90	6.06	9.17
Pd II (1991-92 to 2003-04)	3.54	3.29	-2.09	-13.81	-12.28	2.97	1.94	3.57	0.22	2.23	1.35	0.40
Pd III(1985-86 to2003-2004)	4.19	3.80	-2.03	-8.82	-7.92	3.44	8.94	-1.52	5.11	2.56	1.50	3.60

Source:Ibid

Table-1.10
Growth in Productivity of Important Crops in Haryana

(Kg./hec.)

Year	Rice	Wheat	Maize	Gram	Total Pulses	Total foodgrains	Rapeseed /Mustard	Sesamum	Total Oilseeds	Sugar-cane	Potatoes	Cotton
1985-86	2796	3092	1166	821	811	2015	760	419	757	4808	14737	367
1986-87	2457	2837	1234	676	688	1843	775	361	768	5450	14656	404
1987-88	2320	2808	835	335	424	1981	1006	300	993	3682	15476	282
1988-89	2398	3407	963	936	925	2257	1253	340	1237	5034	15843	332
1989-90	2728	3181	1456	698	711	2211	985	367	973	5376	16077	429
1990-91	2774	3479	1408	722	730	2343	1338	328	1306	5277	15695	400
1991-92	2830	3597	1626	659	702	2538	1038	295	1081	5590	18108	451
1992-93	2658	3620	1746	670	707	2589	921	364	933	4855	16756	450
1993-94	2730	3620	1204	994	981	2631	1385	303	1382	5778	16779	339
1994-95	2801	3676	1636	1101	1088	2735	1385	333	1391	5859	13675	373
1995-96	2225	3697	1846	1011	1002	2530	573	263	1282	5630	13695	334
1996-97	2966	3880	1712	800	828	2844	1459	333	1465	5571	13561	370
1997-98	2797	3660	1916	873	869	2706	662	333	740	5304	9149	291
1998-99	2239	3916	1950	824	790	2701	1235	333	1241	5477	15214	255
1999-2000	2385	4166	2388	578	572	3046	1325	306	1307	5618	15732	408
2000-2001	2556	4106	2208	643	636	3061	1370	286	1359	5713	15183	407
2001-02	2653	4103	2626	856	786	3127	1491	292	1479	5751	21156	424
2002-03	2725	4053	1824	750	628	3099	1148	415	1136	5635	28340	340
2003-04	2748	3936	2470	814	722	3070	1558	278	1544	5789	24467	455
Compound growth -rate												
Pd I (1985-86 to 1990-91)	0.88	3.27	4.63	1.38	1.01	4.17	5.60	-2.95	11.01	2.13	1.78	1.79
Pd II (1991-92 to 2003-04)	-0.32	1.21	4.14	-0.81	-2.22	1.88	2.96	-0.01	1.77	0.46	3.39	0.08
Pd III(1985-86 to 2003-2004)	0.08	1.92	4.95	1.03	0.09	2.75	6.15	-0.81	2.46	1.11	1.57	1.21

Source:Ibid

Table-1.7 gives information on year-to-year percentage change in cultivated area under important crops in Haryana. The results are different for each crop in each year. Most of the years have shown an increase in the area cultivated under rice. However, six years have indicated drop in the area under this crop. The highest decline of 26.07 per cent was noticed in 1987-88. The most important crop in Haryana, wheat has also exhibited positive as well as negative changes in the area cultivated but these are not abrupt and negative change is not very prominent. Other important crops like gram, potatoes, sugarcane, rape and mustard; total oilseeds and cotton have also recorded negative as well as positive changes. These could be attributed to the level of farm harvest prices and quantum of rainfall in the state. In a nutshell, none of the crops has shown decline or increase. The trend was mixed for all the crops.

After harvesting wheat and paddy, other crops are generally sown as pure crop or mixed crops. The land unsuitable for main crop is often devoted to other crops. Information presented in Table-1.7 suggests that main crops occupy major share of area and rest of GCA is devoted to other crops like vegetables and fruits. Among fruits, mangoes and grapes are grown while among vegetables; potatoes, onions and other vegetables are cultivated.

An examination of growth in acreage under important crops between 1985-86 and 2003-04 indicates that rice has gained area at the rate of 4.10 per cent per annum during the study period despite declining water table in the state. Acreage growth was found better in the reform period in comparison to eighties. Rape and mustard and sugarcane were other two crops with 2.64 per cent and 1.43 per cent per annum growth in acreage during the same period. Unlike rice, first period was better than second period for area expansion under these crops. Wheat has gained acreage at the rate of 1.84 per cent per year between 1985-86 and 2003-04. Although, area has declined under maize, total pulses, potatoes, sesamum, gram appeared to be the biggest looser by indicating a decline at the rate of 9.76 per cent per year. The drop was as high as 13 per cent per year during the second period. This has influenced area under total pulses, which has declined at the rate of 8.00 per cent per annum in the reference period (Table-1.8).

After analyzing acreage under important crops, we would focus on the status of production of important crops. Table-1.9 gives information on absolute production and its growth over the study period (1985-86 and 2003-04). Since, area cultivated under rice has increased, production has also moved up at the rate of 4.19 per cent per annum. The production of rape and mustard, wheat, total foodgrains and oilseeds has risen at the rate of more than 2 per cent per annum during the study period. Of these, rape and

mustard was the fastest growing crop due to area expansion and higher increase in yield. It may be noted that production of gram and total pulses has declined at the exceptional rate of 8.82 and 7.92 per cent per annum during the reference period. The crop of rape and mustard has indicated out standing growth (8.94%per year) during the reference period because it can be grown successfully under water stress too.

Yield is the most important factor influencing production. In Haryana, yield of important crops is generally higher than all India average. The productivity per hectare of rice, wheat, maize, gram, sugarcane, rape and mustard and total food grains was 2796 kg/ha, 3092 kg/ha, 1166 kg/ha, 821 kg/ha, 4808kg/ha., 760 kg/ha, 2015 kg./ha. during 1985-86. Table-1.10 indicates that productivity of the important crop that is rice in the state has increased at the marginal rate of 0.08 per cent per annum during the study period. Particularly, yield of rice declined at the rate of 0.32 per cent per annum during the second period. The two crops with good performance in productivity have been maize, rape and mustard. The productivity of rape and mustard grew at the rate of 6.15 per cent per annum during the study period. First period was far superior than the second period. The second crop with higher growth in the yield is maize (4.95 per cent per annum) between 1985-86 and 2003-04. The other crops with significant increase in productivity are wheat (1.92 per cent) and sugarcane (1.11 per cent per annum). It is amazing that yield rates of gram and total pulses have not shown significant increase in an agriculturally developed state like Haryana. To conclude, productivity of most crops has increased but in a few cases, it has remained almost constant or increased marginally during the study period. It is disappointing to note that productivity of important crop that is rice in Haryana has shown a marginal increase. Under these circumstances, policy needs to take an urgent action so that yield of rice can be enhanced. This is possible by adoption of high yielding variety seeds on the scale as recorded for wheat. The full adoption of recommended farm practices would maximize benefits.

VI. Input Use

The utilization of HYV seeds, fertilizer, pesticides, tractor and tube wells play an important role in boosting the agricultural development of a region. Haryana is using these inputs for a long time. The consumption of fertilizer was 199 kg./ha. during 2003-04. The nitrogenous fertilizers were preferred over phosphatic and potassic fertilizers. The state of Haryana has already moved towards agricultural mechanization. Use of tractors and combine harvesters is found common (Table-

1.11). It may be noted that Haryana is ahead of many states in the production as well as distribution of high yielding variety seeds. These were used on 99 per cent of cultivated area in case of wheat while for maize, it was only 63 per cent.

The agricultural output per hectare in Haryana at current prices in 2003-04 was Rs.46857. It ranks second in India. Also, Haryana has a good network of metalled roads. Potential of organic farming in Haryana is excellent. In view of rising demand for organic products, state should exploit this opportunity. Lack of infrastructural facilities in remote areas creates problems for the cultivators. Especially power sector needs improvement. It is not available round the clock in rural areas and it hinders agricultural operations. Massive investment is needed to address this shortcoming. Government should give priority to this aspect to boost growth of agriculture in the state.

Table 1.11
Status of Input use in Haryana

Item	2003-04
% of Cultivated Area under HYV Seeds	
Wheat	98.7
Rice	72.3
Bajra	85.4
Maize	63.3
Fertilizer consumption (Kgs/ha)	
N	132
P	41
K	26
Total	199
Tractors per '000 hectares	39
Tubewells per '000 hectares	85
Harvester combines per '000 hectares	37
% of Power used for agriculture	41.20
Gross value of agricultural output per ha. at current prices (2003-04)	46857

Source: Statistical Abstract of Haryana

VII. Organization of the Study

The study is divided into five chapters. Chapter-1 is introductory and gives an overview of the state in terms of area, population, workers, income, agricultural development and input use. It also provides a brief review of available studies. Chapter-2 deals with the main theme of the study that is trends and pattern of budgetary expenditure on agriculture and allied activities. Chapter-3 analyses the schemes being implemented for agricultural development in the state of Haryana, while chapter-4 reviews nexus between state intervention and agricultural development. The final chapter presents summary and conclusions of the study.

Chapter-2

Trends and Pattern of Budgetary Expenditure on Agriculture

Introduction

Budgetary expenditure plays a key role in planning for development. Its classification has crucial importance for the economy because it indicates relative importance of different sectors in the government expenditure. Under Article 112 and 202 of the Constitution, Central and state governments are required to present their expenditure estimates under the categories of (a) revenue expenditure and (b) capital expenditure. To this classification is added a further division, viz, plan and non-plan expenditure (both capital & revenue) on the projects undertaken during a plan period.

This chapter aims to analyse growth and composition of budgetary expenditure on agriculture in Haryana. It is divided into three sections. Section-1 presents trends in budgetary expenditure on agriculture. Section-2 deals with changing composition of expenditure on agriculture while Section-3 focuses on plan expenditure. It also presents expenditure on agriculture as a share of NSDP in Haryana. The data to fulfill these objectives are collected from various issues of Statistical Abstract of Haryana. These are supplemented with other secondary sources such as the Centre for Monitoring Indian Economy on Finance and Agriculture (CMIE) and the Economic Survey of India. 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 rate and coefficient of variation are used for analysis of time series data on various aspects related to the problem. The compound growth rates are calculated by fitting a log linear function ($\log y = \log a + b \log X$)

Section-1

Expenditure on Agriculture and Allied Activities

Expenditure on agriculture includes revenue and capital expenditure. We will first define these terms and then will present the empirical results. Revenue expenditure relates to the normal running of the government and various services such as interest payments on debt incurred by the government, grants given to the state governments and subsidies, etc. Broadly speaking, all those expenditures of

the government that do not result in the creation of physical or financial assets are treated as revenue expenditure. Budget documents classify total revenue expenditure into plan and non-plan expenditure. Out of total budgetary expenditure of Haryana in 2000-01, 19.79 per cent was the plan expenditure and rest of 81.21 per cent was the non-plan expenditure. Their proportion became 22.82 and 77.18 per cent respectively during 2004-05.

We will now define capital expenditure. The expenditures of the government, which lead to creation of physical or financial assets or reduction in recurring financial liabilities, fall under the category of capital expenditure. Such expenditures pertain to payments on acquisition of assets like land, buildings, machinery, and equipment, investment in shares, loans and advances given to the state governments, public sector enterprises and other parties. Capital disbursements are of two kinds, those spent directly (capital outlays) and those spent indirectly by extending loans and advances.

The revenue and capital expenditure cover a wide variety of general, social and economic services provided by the government. First, we briefly describe the items included in these services and then present the empirical results for Haryana. The general services include both civil and defence services while social services cover expenditure incurred on basic social amenities to the population as consumers. These relate to expenditure on education, art and culture, sports, medical, housing, labour, employment, social security and welfare. The category of economic services includes all such expenditures, which promote productive activity within the economy. In other words, benefits of expenditure under this category accrue to people as producers. The major heads of expenditure of this sector are general economic services, like foreign trade and export promotion, agriculture and allied activities, rural development, irrigation, flood control, energy, industries, transport, science and technology.

There are un-allocable revenue expenditures, which cannot be related to specific purposes. The main items included under these are: statutory grants in aid, advances, ad-hoc loans, technical and other loans.

The rationale underlying the categorization of government expenditure into the above-mentioned categories is that while general services relate to the defence of the country and the general upkeep of the government, social services provide

basic amenities to citizens as consumers, economic services extend benefits to citizens as producers, and un-allocable expenditures signify lack of specific purpose.

The revenue and capital expenditure on economic services, agriculture & allied activities and total expenditure in Haryana at current prices and 1993-04 prices are presented in Table-2.1. It also provides their compound growth rates and coefficients of variation for the study period. The total revenue expenditure of Haryana government in 1985-86 at current prices was around Rs. 854 crore which became Rs. 11407 crore in 2004-05. It increased at the rate of 14.88 per cent per annum. It may be noted that the rate of increase was higher in the first period in comparison to the second period. In total expenditure, capital expenditure accounted for 19.10 per cent in the beginning, which decreased to 7.28 per cent in 2004-05. The overall results imply that capital expenditure received some attention in the total expenditure of the state but it experienced declining share. An exceptional decrease of around 1000 crore was noticed in 2002-03 over 2001-02. The total expenditure increased by more than 10,000 crore during the study period. The compound growth rate of total expenditure came down from 15.17 per cent in first period to 11.77 per cent in second period. The capital expenditure grew at the rate of 13.02 per cent per annum during the study period. Out of the two study periods, second period showed an increase at the rate of 12.7 per cent per annum in capital expenditure. Surprisingly, it was negative in the first period. The detailed perusal of data on capital expenditure indicated that capital expenditure in some years was negative due to excess of receipts and recoveries over expenditure under the procurement and grain supply schemes in Haryana.

The coefficients of variation for the above mentioned items were found more than 20 per cent for the first, second and entire period. The lowest value of 19.92 per cent was observed for total expenditure on economic services during first period. On the other hand, these coefficients were found above 100 per cent for capital expenditure on economic services between 1985-86 and 2004-05. Also, it was around 106 and 118 for total expenditure on agriculture and allied activities during second period and entire period in Haryana.

Table 2.1

Trends in Total Budget, Economic Services and Agriculture Expenditure in Haryana

(Rs Crore)

At Current Prices									
	Total Expenditure			Economic Services			Agriculture and Allied Activities		
Year	Revenue	Capital	Total	Revenue	Capital	Total	Revenue	Capital	Total
1985-86	854.22	201.72	1055.94	318.57	184.48	503.05	72.33	18.58	90.91
1986-87	967.36	172.26	1139.62	352.16	149.08	501.24	78.51	-28.95	49.56
1987-88	1287.48	60.49	1347.97	481.46	43.4	524.86	87	-41.21	45.79
1988-89	1442.93	140.15	1583.08	460.08	117.24	577.32	93.11	-2.55	90.56
1989-90	1701.73	132.67	1834.4	546.23	112.7	658.93	110.96	13.11	124.07
1990-91	1933.07	132.67	2065.74	649.25	154.75	804	158.07	27.42	185.49
1991-92	2274.02	186.16	2460.18	789.9	108.95	898.85	226.78	-42.35	184.43
1992-93	2379.34	228.33	2607.67	808.27	160.91	969.18	214.36	7.99	222.35
1993-94	3401	309.92	3710.92	876.33	225.62	1101.95	192.35	56.62	248.97
1994-95	6272.92	206.58	6479.5	1613.49	109.73	1723.22	199.32	-28.46	170.86
1995-96	5361.56	258.87	5620.43	1197.21	183.5	1380.71	231.17	-26.38	204.79
1996-97	6767	446.65	7213.65	1696.29	235.14	1931.43	271.17	-26.78	244.39
1997-98	6617.17	492.21	7109.38	1779.3	339.47	2118.77	265.37	12.64	278.01
1998-99	7018.89	1025.76	8044.65	2155.2	848.97	3004.17	331.69	159.22	490.91
1999-2000	6952.05	894.09	7846.14	1791.48	702.34	2493.82	327.83	0.02	327.85
2000-2001	7181.37	1445.16	8626.53	1542.81	1272.4	2815.21	358.19	607.66	965.85
2001-2002	8656.5	1467.12	10123.6	2414.82	1125.26	3540.08	392.65	568.12	960.77
2002-2003	9342.13	435.8	9777.93	2532.48	176.16	2708.64	411.25	-405.22	6.03
2003-2004	10117.19	385.65	10502.8	2706.05	25.52	2731.57	422.75	-675	-252.25
2004-2005	11407.1	896.93	12304	3199.08	551.85	3750.93	463.34	-244.07	219.27
Co-efficient of variation									
Pd I (1985-86 to 1990-91)	30.52	33.93	26.40	26.17	38.35	19.92	31.42	-1213.19	53.19
Pd II (1991-92 to 2004-05)	40.62	71.99	40.45	41.36	93.03	41.76	29.65	-12784.3	106.23
Pd III(1985-86to2004-2005)	66.22	91.05	65.94	62.82	106.64	62.63	50.72	-10978.5	117.96
Compound growth rate									
Pd I (1985-86 to 1990-91)	18.33	-5.66	15.17	14.8	-2.05	9.76	15.4	31.81	22.14
Pd II (1991-92 to 2004-05)	11.58	12.70	11.77	10.51	6.53	11.07	7.13	1.79	-14.14
Pd III(1985-86to2004-2005)	14.88	13.02	14.7o	12.63	7.83	12.37	10.29	2.27	-1.01

…contd. Table 2.1

At Constant Prices (1993-94=100)

Year	Revenue	Capital	Total	Revenue	Capital	Total	Revenue	Capital	Total
1985-86	1687.85	398.58	2086.43	629.46	364.51	993.97	142.92	36.71	179.63
1986-87	1806.46	321.68	2128.14	657.63	278.39	936.02	146.61	-54.06	92.55
1987-88	2221.71	104.38	2326.09	830.82	74.89	905.71	150.13	-71.11	79.02
1988-89	2317.22	225.07	2542.28	738.85	188.28	927.12	149.53	-4.10	145.43
1989-90	2544.83	198.40	2743.23	816.85	168.54	985.39	165.93	19.61	185.54
1990-91	2621.82	179.94	2801.76	880.58	209.89	1090.47	214.39	37.19	251.58
1991-92	2711.69	221.99	2933.68	941.93	129.92	1071.85	270.43	-50.50	219.93
1992-93	2578.11	247.40	2825.52	875.79	174.35	1050.15	232.27	8.66	240.93
1993-94	3401.00	309.92	3710.92	876.33	225.62	1101.95	192.35	56.62	248.97
1994-95	5570.98	183.46	5754.44	1432.94	97.45	1530.39	177.02	-25.28	151.74
1995-96	4409.18	212.89	4622.06	984.55	150.90	1135.45	190.11	-21.69	168.41
1996-97	5319.97	351.14	5671.11	1333.56	184.86	1518.42	213.18	-21.05	192.13
1997-98	4982.81	370.64	5353.45	1339.83	255.63	1595.46	199.83	9.52	209.34
1998-99	4988.55	729.04	5717.59	1531.77	603.39	2135.16	235.74	113.16	348.91
1999-2000	4784.62	615.34	5399.96	1232.95	483.37	1716.32	225.62	0.01	225.64
2000-2001	4612.31	928.17	5540.48	990.89	817.21	1808.10	230.05	390.28	620.33
2001-2002	5366.71	909.56	6276.27	1497.10	697.62	2194.72	243.43	352.21	595.64
2002-2003	5600.80	261.27	5862.07	1518.27	105.61	1623.88	246.55	-242.94	3.62
2003-2004	5751.67	219.24	5970.92	1538.40	14.51	1552.91	240.34	-383.74	-143.41
2004-2005	6090.28	478.87	6569.16	1708.00	294.63	2002.63	247.38	-130.31	117.07
Co-efficient of variation									
Pd I (1985-86 to 1990-91)	17.35	44.36	12.56	13.27	46.19	6.88	16.74	-783.29	41.27
Pd II (1991-92 to 2004-05)	23.35	60.52	23.03	22.45	81.97	24.35	11.82	5094.05	87.18
Pd III(1985-86to2004-05)	38.07	64.41	37.32	30.54	78.02	30.57	19.15	17425.72	83.00
Compound growth rate									
Pd I (1985-86 to 1990-91)	9.21	-14.71	6.07	6.94	-10.45	1.87	8.45	0.26	6.97
Pd II (1991-92 to 2004-05)	6.42	6.09	6.40	4.68	6.50	4.93	-0.68	7.56	-4.73
Pd III(1985-86to2004-05)	6.99	0.97	6.22	5.39	-1.11	3.76	2.93	-206.89	-2.23

Source: Various issues of Statistical Abstract of Haryana,Govt. of Haryana, Chandigarh

The expenditure on economic services was Rs. 503 crore in Haryana in 1985-86. It increased to around Rs. 3751 crore in 2004-05. The compound growth rate of increase was 7.83 per cent per annum. It may be noted that the share of capital expenditure out of total expenditure on economic services was 36.58 per cent during1985-86. It showed a significant growth but its share declined to 14.72 per cent in 2004-05. It indicates that this crucial component received low priority in the policy in Haryana.

Table 2.1 also presents revenue, capital and total expenditure on agricultural and allied activities for the study period. The total expenditure on this sector rose

from Rs 90.91 crore in 1985-86 to Rs. 219.27 crore in 2004-05. The rate of increase was negative (-1.01 percent per year) for this period. The overall growth during first period has been quite impressive (22.14 per cent) but the second period indicated a negative growth of 14.14 per cent per annum. It is common to expect that revenue expenditure on agriculture and economic services would grow along with other expenditures. But, share of revenue and capital expenditure in total expenditure on agriculture would depend on government policy. The share of revenue and capital expenditure in total expenditure was 75.56 and 24.44 percent during1985-86. It is surprising to note that capital expenditure on agriculture and allied activities became negative during 10 years out of total twenty years. The growth rate of revenue expenditure was significantly higher than capital expenditure. This indicates that capital expenditure in agriculture sector received inadequate attention by the government of Haryana.

The second part of Table-2.1 provides expenditure on economic services agriculture and allied services and total at constant prices. Like current prices, a significant growth was observed in total expenditure and on economic services between 1985-86 and 2004-05. But, the gap narrowed down. The compound growth rates of these expenditures came down substantially. It essential to note that expenditure on agriculture and allied services became negative in the second period and entire reference period. It suggests that agriculture was not benefited by government policy in real terms in Haryana during the span of the study, which covers a period of almost two decades. Results indicate that capital expenditure at constant prices showed negative growth for economic service as well as agriculture and allied activities in Haryana.

Capital formation in agriculture is a burning issue and demands urgent attention. The capital expenditure at current prices overtime in agriculture in Haryana has been declining. The compound growth rate of 31.81 per cent per annum during the first study period plummeted to merely 1.79 per cent. It implies that infrastructure for agriculture was given inadequate priority. The capital formation is a process and even if we do something now, it is going to take some time. It cannot be created overnight. Particularly, creation of infrastructure for important items such as irrigation needs a time lag. Hence, policy should plan in advance so that growth is not hampered in the long run.

Table 2.2
Share of Agriculture Expenditure in Total Expenditure and Expenditure on Economic Services in Haryana

(%)

Year	Total Expenditure			Economic Services		
	Revenue	Capital	Total	Revenue	Capital	Total
1985-86	8.47	9.21	8.61	22.70	10.07	18.07
1986-87	8.12	-16.81	4.35	22.29	-19.42	9.89
1987-88	6.76	-68.13	3.40	18.07	-94.95	8.72
1988-89	6.45	1.82	5.72	20.24	-2.18	15.69
1989-90	6.52	9.88	6.76	20.31	11.63	18.83
1990-91	8.18	20.67	8.98	24.35	17.72	23.07
1991-92	9.97	-22.75	7.50	28.71	-38.87	20.52
1992-93	9.01	3.50	8.53	26.52	4.97	22.94
1993-94	5.66	18.27	6.71	21.95	25.10	22.59
1994-95	3.18	-13.78	2.64	12.35	-25.94	9.92
1995-96	4.31	-10.19	3.64	19.31	-14.38	14.83
1996-97	4.01	-6.00	3.39	15.99	-11.39	12.65
1997-98	4.01	2.57	3.91	14.91	3.72	13.12
1998-99	4.73	15.52	6.10	15.39	18.75	16.34
1999-2000	4.72	0.00	4.18	18.30	0.00	13.15
2000-2001	4.99	42.05	11.20	23.22	47.76	34.31
2001-02	4.54	38.72	9.49	16.26	50.49	27.14
2002-03	4.40	-92.98	0.06	16.24	-230.03	0.22
2003-04	4.18	-175.03	-2.40	15.62	-2644.98	-9.23
2004-05	4.06	-27.21	1.78	14.48	-44.23	5.85

Source: Ibid

Table 2.1 also presents coefficients of variation for total expenditure, revenue and capital expenditure for agriculture and economic services. The highest coefficient of variation was noticed for total expenditure on agriculture while the lowest was noticed for total expenditure on economic services during the first period. The overall results of coefficients of variation show moderate to high variability in indices across the time periods and type of expenditures.

It is essential to look into the share of expenditure on agriculture and allied activities to expenditure on economic services and total budget expenditure. These expenditures on revenue account were 8.47 and 22.70 per cent respectively during 1985-86. Their proportion declined during the reference period. It became 4.06 and 14.48 per cent respectively during 2004-05. It may be noted that share of total budgetary expenditure and expenditure on economic services to agricultural sector declined by 7 per cent and 12 per cent respectively. This implies change in focus of policy during this period. It is essential to mention that capital expenditure in both the cases became negative over the years. This affected capital formation in agriculture adversely (Table-2.2).

Share of Agriculture and Allied Activities in NSDP of Haryana

The share of expenditure on important sectors in the NSDP is useful indicator to gauge relationship between overall growth in the region and growth in a particular sector. Table 2.3 gives an overview of agricultural sector expenditure as percentage of NSDP (Net State Domestic Product) for the period 1985-86 to 2004-05. Share of expenditure on agriculture and allied activities to the NSDP was 1.57 per cent during 1985-86, which declined to a miniscule 0.30 per cent in 2004-05. No clear relationship emerged between the two indicators. The rate of increase in the two indicators was fluctuating. The yearly growth in the NSDP was more than 10 per cent except for 1986-87, which showed 4.39 per cent growth over the previous year. The share of the NSDP spent on agriculture and allied activities was between 1.99 and 0.01 per cent. This is extremely low given the status of agriculture in the economy of the state. It implies that expenditure on agriculture did not grow proportionately with rising income of the state in Haryana. As a result, correlation coefficient between these two indicators was weak (0.12). The expenditure showed year-to-year variations. These results imply that agriculture received relatively lower priority in government expenditure in Haryana.

Table 2.3
Share of Expenditure on Agriculture and Allied Activities in NSDP of Haryana

Year	Growth in NSDP	Share in NSDP
1985-86	-	1.57
1986-87	4.39	0.82
1987-88	11.14	0.68
1988-89	13.18	1.02
1989-90	11.18	1.25
1990-91	12.29	1.52
1991-92	11.99	1.26
1992-93	10.55	1.44
1993-94	12.60	1.28
1994-95	11.87	0.74
1995-96	11.37	0.78
1996-97	11.93	0.78
1997-98	10.82	0.82
1998-99	11.31	1.28
1999-2000	11.25	0.76
2000-2001	11.25	1.99
2001-2002	10.98	1.80
2002-2003	11.30	0.01
2003-2004	10.73	0.39
2004-2005	11.30	0.30

Source: Ibid

Correlation Coefficient between Growth in NSDP and Share in NSDP = 0.117

Table 2.4

Itemwise Share of Expenditure (Revenue Account) on Agriculture and Allied Activities in Haryana

(%)

Year	Crop Husbandry	Soil &Water Conservation	Animal Husbandry	Dairy Development	Fisheries	Forest & Wild Life	Food storage & Ware-housing	Agri. Research & Education	Co-operation	Others	Total
1985-86	25.65	9.91	16.02	1.33	2.64	22.33	1.65	14.83	5.49	0.15	100.00
1986-87	24.77	11.22	17.64	1.20	2.14	21.17	1.60	14.44	5.45	0.36	100.00
1987-88	23.86	8.95	23.17	1.20	2.13	18.86	0.67	14.75	6.00	0.41	100.00
1988-89	21.03	8.60	21.82	1.16	2.18	21.62	1.35	15.96	6.03	0.25	100.00
1989-90	20.38	7.62	19.65	1.07	2.38	27.19	1.21	15.00	5.26	0.25	100.00
1990-91	16.32	7.00	16.37	1.20	1.62	25.86	0.92	11.31	19.21	0.20	100.00
1991-92	15.94	5.05	12.62	0.73	1.28	20.56	0.59	9.83	33.08	0.32	100.00
1992-93	29.92	5.67	14.33	0.73	1.45	21.68	1.04	10.90	14.14	0.14	100.00
1993-94	27.00	7.25	18.00	0.91	1.98	24.28	1.15	13.52	5.72	0.18	100.00
1994-95	20.80	8.50	21.00	1.01	1.78	23.54	1.12	14.46	7.58	0.20	100.00
1995-96	20.21	10.12	20.19	1.03	2.37	22.95	1.17	14.65	7.12	0.19	100.00
1996-97	21.94	9.65	21.78	1.34	1.97	18.82	1.53	16.33	6.45	0.19	100.00
1997-98	20.22	9.88	23.24	1.22	1.90	19.96	1.64	16.25	5.49	0.21	100.00
1998-99	21.41	7.94	26.13	1.22	2.34	20.40	1.24	13.56	5.56	0.19	100.00
1999-2000	22.74	8.09	27.78	1.25	2.26	18.42	1.78	11.85	5.58	0.25	100.00
2000-2001	21.77	9.11	24.86	1.22	2.36	15.73	1.56	17.87	5.26	0.25	100.00
2001-2002	21.24	10.47	22.99	1.24	1.75	16.71	1.28	19.26	4.84	0.23	100.00
2002-2003	20.68	9.88	24.52	1.12	2.06	17.58	1.05	18.18	4.72	0.22	100.00
2003-2004	20.30	10.12	24.85	0.68	2.21	17.21	1.16	18.21	5.05	0.20	100.00
2004-2005	20.37	7.91	25.60	0.45	2.10	20.41	1.04	17.05	4.91	0.17	100.00

Source: Ibid

Table 2.5
Item-wise Per Hectare Expenditure (Revenue Account) on Agriculture and Allied Activities in Haryana

(Rs.)

Year	Crop Husbandry	Soil &Water Conservation	Animal Husbandry	Dairy Development	Fisheries	Forest & Wild Life	Food storage & Warehousing	Agri. Research & Education	Co-operation	Others	Total
1985-86	33.12	12.80	20.69	1.71	3.41	28.83	2.12	19.16	7.09	0.20	129.14
1986-87	41.51	18.80	29.56	2.01	3.59	35.47	2.69	24.20	9.13	0.60	167.54
1987-88	34.53	12.96	33.53	1.73	3.08	27.30	0.96	21.34	8.68	0.60	144.71
1988-89	32.57	13.32	33.80	1.80	3.38	33.48	2.10	24.72	9.33	0.38	154.87
1989-90	40.01	14.95	38.58	2.11	4.67	53.39	2.37	29.45	10.33	0.50	196.35
1990-91	43.57	18.69	43.72	3.21	4.33	69.05	2.45	30.21	51.29	0.54	267.06
1991-92	64.92	20.56	51.36	2.98	5.21	83.72	2.41	40.04	134.67	1.29	407.15
1992-93	109.57	20.78	52.49	2.68	5.31	79.40	3.81	39.91	51.79	0.51	366.24
1993-94	89.30	23.99	59.55	3.01	6.55	80.33	3.82	44.71	18.93	0.58	330.78
1994-95	69.23	28.30	69.88	3.37	5.93	78.34	3.72	48.14	25.23	0.67	332.81
1995-96	78.21	39.15	78.16	3.98	9.16	88.82	4.54	56.70	27.55	0.75	387.01
1996-97	97.94	43.09	97.25	5.98	8.78	84.03	6.83	72.92	28.79	0.84	446.44
1997-98	87.34	42.68	100.37	5.26	8.20	86.23	7.06	70.19	23.72	0.93	431.99
1998-99	112.37	41.65	137.14	6.42	12.28	107.07	6.52	71.17	29.19	1.01	524.83
1999-2000	123.67	43.99	151.07	6.78	12.27	100.17	9.69	64.44	30.34	1.34	543.76
2000-2001	127.54	53.36	145.64	7.16	13.85	92.13	9.13	104.69	30.79	1.46	585.76
2001-2002	131.97	65.05	142.89	7.69	10.86	103.88	7.93	119.69	30.09	1.42	621.48
2002-2003	140.86	67.26	166.98	7.64	14.00	119.73	7.17	123.78	32.13	1.47	681.03
2003-2004	134.31	66.97	164.45	4.52	14.64	113.92	7.69	120.52	33.45	1.31	661.79
2004-2005	146.88	57.06	184.64	3.22	15.14	147.18	7.49	122.93	35.39	1.23	721.15

Source : Ibid

An enquiry into the relationship between revenue expenditure on agriculture and allied activities and per capita income of the state was also found weak. The per capita income was rising all through but the rate of increase varied from year-to-year. But, this is not found true for expenditure on agriculture. These results imply that two indicators do not coincide. It is possible that a state with high per capita income may spend less on agriculture or vice versa. It is imperative for the state like Haryana that a larger share of income is spent on agricultural sector to enhance the growth and income. This is urgent since more than 50 per cent of workers still depend on agriculture for livelihood security.

Section-2

Pattern and Composition of Expenditure on Agriculture

In the earlier section, we have focused our attention on the macro view of expenditure on agriculture and allied activities and briefly compared expenditure level in 1985-86 with that in the year 2004-05. We define agricultural sector expenditure as the total of expenditure on crop husbandry, soil and water conservation, animal husbandry, dairy development, fisheries, forestry and wild life, food storage and warehousing, agricultural research and education, cooperation and other agricultural programmes. Now, we will analyse pattern and composition of revenue expenditure on various items of agriculture for the study period. Its break up is given in Table-2.4.

Haryana spent 25.65 per cent of agricultural expenditure on crop husbandry in 1985-86. It came down to 20.37 per cent in 2004-05. It reached to the highest level in 1992-93 (29.92 per cent). Thus, proportion of agricultural expenditure on crop husbandry has indicated mixed trend. It has been rising in a few years and declining in some other years. The share of expenditure on soil and water conservation in total agricultural expenditure ranged between 5.05 and 11.22 per cent during the reference period. It was higher than rest of the years in 1986-87. The proportion of expenditure on animal husbandry was between 12.62 and 27.78 per cent. It reached to the highest level in the year 1999-00.

Dairy and fishries development is crucial for the survival of small and marginal farmers with small land holdings in Haryana. Unfortunately, share of these sectors in agricultural expenditure was minuscule. It was merely 0.45 per cent for dairy development and 2.10 per cent for fisheries during 2004-05. The expenditure on

forestry and wild life also decreased from 22.33 per cent during 1985-86 to 20.41 per cent in 2004-05 and reached to the highest level of 27.19 per cent in 1989-90.

A special priority should be accorded to agricultural research and education to further enhance the yield of major crops and sustainable development in Haryana. Its share has shown a rising trend from 14.83 per cent in 1985-86 to 17.05 per cent in the year 2004-05. The percentage of expenditure on cooperation showed a downward movement. It remained almost constant till 1989-90 and then started rising and became 19.21 and 33.08 per cent respectively. But, again started declining and remained less than 10 per cent in rest of the years.

Next, we take up item-wise per hectare expenditure on agriculture and allied activities in Haryana (Table-2.5). It indicates that total expenditure per hectare of GCA increased from Rs. 129.14 in 1985-86 to Rs. 721.15 in 2004-05. It is almost six fold increase. A look at the item wise break up indicates that crop husbandry; forest and wild life received the highest priority in per hectare terms during 1985-86. However, animal husbandry, forestry and wild life followed by crop husbandry became prominent during 2004-05.

A perusal of item wise year-to-year change in expenditure on agriculture and allied activities (Table-2.6) indicates that change was positive as well as negative. But in majority of the cases, expenditure has increased but the rate of change varied significantly.

Section-3
Plan Expenditure

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-2.6
Item-wise Year-to-Year Change in Expenditure on Agriculture and Allied Activities (Revenue Account) in Haryana

(Rs)

Year	Crop Husbandry	Soil &Water Conservation	Animal Husbandry	Dairy Development	Fisheries	Forest & Wild Life	Food storage & Ware-housing	Agri. Research & Education	Co-operation	Agril. Prog.	Others
1885-86	-	-	-	-	-	-	-	-	-	-	
1986-87	4.85	22.87	19.50	-2.08	-12.04	2.91	5.88	5.68	7.81	154.55	8.54
1987-88	6.74	-11.58	45.56	10.64	10.12	-1.26	-53.97	13.14	21.96	28.57	10.81
1988-89	-5.68	2.82	0.79	3.85	9.73	22.67	117.24	15.82	7.47	-36.11	7.02
1989-90	15.47	5.49	7.28	10.19	30.05	49.88	6.35	11.98	4.10	21.74	19.17
1990-91	14.06	30.89	18.72	59.66	-3.03	35.47	8.21	7.45	419.86	14.29	42.46
1991-92	40.21	3.53	10.55	-12.63	13.28	14.09	-7.59	24.72	147.07	125.00	43.47
1992-93	77.35	6.20	7.38	-5.42	7.24	-0.34	66.42	4.75	-59.59	-58.33	-5.48
1993-94	-19.02	14.72	12.73	11.46	22.51	0.52	-0.45	11.30	-63.68	13.33	-10.27
1994-95	-20.16	21.51	20.85	15.43	-6.82	0.45	0.45	10.88	37.24	17.65	3.62
1995-96	12.69	37.99	11.57	17.82	54.08	13.09	21.52	17.48	8.93	12.50	15.99
1996-97	27.33	11.89	26.52	52.52	-2.56	-3.81	53.14	30.76	6.26	13.33	17.29
1997-98	-9.82	0.19	4.38	-11.02	-5.44	3.78	4.58	-2.64	-16.70	11.76	-2.14
1998-99	32.38	0.38	40.56	25.70	53.97	27.75	-5.07	4.31	26.63	12.28	24.99
1999-2000	4.98	0.76	5.09	0.74	-4.64	-10.76	41.75	-13.63	-0.87	26.56	-1.16
2000-2001	4.60	23.04	-2.22	7.09	14.46	-6.71	-4.45	64.79	2.95	9.88	9.26
2001-2002	6.91	25.96	1.37	10.96	-19.01	16.49	-10.22	18.12	0.96	1.12	9.62
2002-2003	1.95	-1.24	11.62	-5.14	23.18	10.10	-13.57	-1.22	2.00	-1.11	4.67
2003-2004	0.93	5.40	4.25	-37.31	10.65	0.71	13.39	3.07	10.21	-5.62	2.86
2004-2005	9.99	-14.31	12.93	-28.37	4.06	29.94	-2.04	2.58	6.41	-5.95	9.60

Source : Ibid

Table 2.7

Plan Expenditure on Agriculture and Allied Activities In Haryana

(Rs. Lakh)

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

Source: Ibid

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-2.7 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-2.8).

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-2.8

Itemwise 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

Source: Government of Haryana, Chandigarh

Chapter-3

Agricultural Development Schemes in Haryana

Introduction

The progress made by agricultural sector in Haryana is commendable. Agriculture was underdeveloped in the state at the time of creation. Now, it ranks second in the country in terms of income from agriculture. Haryana contributes around 15 per cent of wheat and 3.16 per cent of rice output in India.

Haryana has emerged as a significant producer of food grains in India. But, future progress would depend on expansion of area and increase in yield. There is a limited scope for increasing the cultivable area in the state. The percentage of net area sown to total area of the state has been fluctuating between 83 per cent to 80 per cent since 1985-86. Haryana seems to have reached a saturation point as far as net area sown is concerned. The agriculture production can only be increased through enhanced cropping intensity, change in cropping pattern, adoption of improved technology and availability of better post harvest technology.

The agricultural development schemes have played an important role in the growth of agricultural sector in Haryana. The Central government and state government of Haryana have been constantly making efforts to accelerate growth of agricultural sector by assisting farmers through various schemes. The necessary initiatives have been taken to identify the problems and constraints and accordingly schemes have been formulated and implemented. These schemes relate to seeds, sprinkler sets, gypsum, tractors, other farm implements and bio-fertilizers. This chapter presents an overview of these schemes in Haryana.

Section-I
State Sponsored Schemes

The increase in agricultural production depends to great extent on the development of improved variety seeds and its efficient adoption along with appropriate input use by the farmers. The government of Haryana is currently implementing following schemes for this purpose.

SCHEME FOR INTEGRATED PEST MANAGEMENT (IPM)

This scheme envisages the implementation of IPM programmes in the state on paddy and bajra crops through popularizing various activities adopting villages. It covers compact area of a village which is regarded as IPM village for components like pest surveillance, demonstrations, using bio-agents/ bio-pesticides, training of farmers, organizing farmers field schools (FFS), distributing pp equipment, organizing campaigns for rodent control, monitoring of pesticide residues, strengthening of bio-control laboratories, etc. The total outlay of the scheme has been at a level of Rs. 60 lakh for the year 2004-2005. The brief description of various components is as follows: -

Table-3.1
Component wise Cost of the Scheme for Integrated Pest Management

Sr. No.	Component	Physical target (no.)	Financial allotment (Rs lakh.)
1.	IPM Villages IPM Villages on paddy (200 hect. each, assistance @ Rs.1500 per hect)	5	15.00
2-	IPM Demonstrations a- IPM demonstration on paddy assistance @ Rs.1500 per hect. b- IPM demonstration on bajra assistance @ Rs. 1000 per hect.	250 (500 Hect.) 500	7.50 5.00
3.	Farmers Field Schools (each of Rs.17,000)	10	1.80
4.	Strengthening of Bio-control Laboratory (for fixture & gadgets, etc.)	2	7.00
5.	Use of Light Traps (assistance @ Rs.300 per trap) or 25% of the cost whichever is less.	4183	12.55
6.	a) Training of Farmers (each training camp will be of 50 farmers and an assistance of Rs.100/- per farmer is provided for making seating arrangement, refreshment and stationary, etc. b) Training of 20 farmers for bio-agent mass production in two groups	100 2	5.00 0.15
7.	Monitoring of Pesticides Residues (for providing chemicals and glass wares, etc.)	1 (Study)	1.00
8	The Rodents Control (Supply of Rodenticide free of cost) for controlling rodents on fallow and banjar lands, etc. through state Deptt. of Agriculture.	3.50 Lakh hect.	5.00
	Total		60.00

Source: Government of Haryana, Haryana

In order to promote and educate farmers on the use of bio-agents / bio-pesticides for the management of leaf folder, stem borer, grass hopper, etc. in paddy and other crops, five villages in paddy growing areas of the state were adopted and integrated pest` management activities were adopted with the financial assistance of Rs. 1500 per hectare to a maximum of two hectares per farmer. The demonstrations were laid on compact area of 200 hectares or village as a whole The assistance was provided in the form of chemicals for seed treatment, bio-agents, bio-pesticides, light traps and pesticides, fungicides. The total expenditure incurred was Rs. 15 lakh. Besides, IPM villages, 250 demonstrations were laid out for paddy and 500 for bajra. The farmers were provided financial support of Rs. 1500 and Rs.1000 per hectare for light traps, bio-agents, bio-pesticides, fungicide and pesticides. In addition, 10 Farmers Field Schools on paddy and bajra crops during the year 2004-2005 were organized. Each participant was provided IPM literature, necessary IPM kit and refreshment, etc. The expenditure worth Rs 17000 was incurred on each FFS. The FFS were organized for 12 weeks from 1st week of July to end of September. A total provision of Rs. 1.80 lakh has been made under this component.

The objective of IPM programme is to educate farmers and develop their skills on IPM technology, so that they can make effective use of it in their fields. For this purpose, 100 training camps of one day each during the kharif season with a financial support of Rs.5000 per training camp for 50 farmers were organized. In addition, expenditure was incurred on sitting arrangement; refreshment, literature and stationary. Also, Rs. 5 lakh were spent on it. The increased use of pesticides by the farmers to save their crops from pests has rendered soil and water contaminated throughout the state. It has become imperative to carryout study on monitoring of pesticide residues covering different agro climatic regions of the state. The Haryana Agricultural University is monitoring pesticide residues.

The rodents not only damage the standing crops in the field but they also destroy the foodgrains in storage. They are omnivorous and eat whatever is available to them. Thus, losses in foodgrains are very high and enormous.

Keeping in view the severity of rodents in the state and losses of foodgrains, it is imperative to reduce their population to a minimum level. Above all, rodents play as carrier for vector diseases like plague. It can be controlled if control operations are organized in entire area during rabi and kharif seasons. It is possible if rodenticides are distributed free of cost to the farmers during campaign for entire area so that there may not be migration of the rodents population to the untreated areas. Therefore, it is essential that campaign should be organized in blocks to achieve desired results for which a sum of Rs. 5 lakh have been spent for supply of rodenticides free of cost as the rodent problem is more serious in fallow and banjar lands for which no body comes forward to contribute towards the cost of rodenticides.

Scheme for Agriculture Engineering and Services

The government assists farmers in installing highly efficient tubewells. The components of the scheme include following items.

Table-3.2
Components of the Scheme for Agriculture Engineering and Services

S.No.	Name of the scheme	Pattern of assistance
1	Installation of tube wells	Boring machines are provided to the farmers for boring work at nominal rates.
2	Enforcement of Dangerous Machines Act, 1983	Help the victims of thresher accident in getting the compensation through Marketing Board
3	To provide technical know how to the farmers	Regarding selection of tractors and its matching implements.
4	Repair and maintenance of biogas plants	Provide technical know how regarding repair, maintenance and operation of biogas plants through departmental masons.

Source: Ibid

The state government is implementing this scheme. Year-wise outlay and expenditure on the scheme since 2000-01 is given below:

Table-3.3
Funds Sanctioned and Per cent Expenditure on the Scheme for Agriculture Engineering and Services

(Rs lakh)

Year	State sanction	% Expenditure
2000-01	61.00	99.91
2001-02	61.04	100.00
2002-03	70.51	99.05
2003-04	79.32	100.00
2004-05	78.50	102.22
2005-06	96.07	95.03
2006-07	91.67	110.69
2007-08	117.21	38.62

Source: Ibid.

It may be noticed that funds sanctioned for tubewell installation were fully utilized during 2001-02 & 2003-04. Twice these funds were over utilized. But, only 38.62 per cent of sanctioned funds were distributed during 2007-08.

Table-3.4

Targets and Achievements of Scheme for Agriculture Engineering and Services during 2006-07

(Rs lakh)

Sr. No.	Component	Unit	Target	Achievement
1.	Installation of tubewells	Nos	700	66.71
2.	Development of tubewells	Nos	325	43.38

Source: Ibid

It may be noticed (Table-3.4) that achievements of targets for installation as well as development of tubewells were not satisfactory.

Scheme of Soil Conservation

Out of total geographical area of 44.23 lakh hectares, about 50% area is severely affected by the problems of erosion, alkalinity, salinity and water logging in Haryana. Soil erosion occurs mainly due to water and wind. Soil erosion through water occurs mostly in areas falling in the Shivalik foothills and in Araveli ranges. It is estimated that about 5.50 lakh hectares are affected by this problem. About 12 lakh hectares area is affected by wind erosion, which occurs mainly in sandy and dry belts of the state. An area of 2.32 lakh hectares is affected with the problem of alkalinity and 2.55 lakh hectares with salinity and water logging. To control the menace of these problems, several state sponsored schemes are being implemented in the state. Under these schemes, soil conservation measures are taken up on watershed basis. These measures include construction of check dams, water harvesting structure, gully control, percolation embankments, diversion bunds, vegetative measures, etc.

The implementation of watershed development schemes helped the farmers in saving their land from further degradation. The harvested rainwater helped in providing life saving irrigation to rainfed crops. These measures also helped in conserving the moisture in dry belts. With the adoption of these measures, the underground water level, which is fast depleting has been checked.

The following conservation measures are being used by the state.

1	Vegetative measures	The vegetative cover provided to denuded soils helps in shielding the soil cover from water erosion.
2.	Agro-forestry	Besides checking water erosion, it helps in catering the need of fodder, fuel and wood of the local community.
3.	Water harvesting structure	Rainwater is harvested which helps in recharging the ground water table. The stored water even helps in providing life saving irrigation in rabi crops.
4.	Gully plugging, check dams, loose boulder structure, earthen structure	These measures help checking land degradation, soil erosion, bank stabilization, and reduction in run-off.

In addition to above soil conservation measures, sprinkler irrigation system and under ground pipelines are being popularized in the state. Application of gypsum in alkali affected soils helps in reclaiming the affected soils.

Modernization of Agricultural Extension Services

Agriculture extension plays a crucial role in dissemination of technological packages to the farmers. The desired results in adoption of latest recommended technologies by farmers, however, could not be achieved and a gap remains between technology generation and technology utilization. Moreover, changing agricultural scenario has necessitated capacity building of the extension workers, their exposure in latest tools of information technology and mass media particularly in the light of economic liberalization and encouraging farmers to adopt latest developments on their field. Public services, especially in extension need to focus on eco-friendly, sustainable and location specific technologies. Diversification, organic farming, efficient use of inputs and providing knowledge on location specific programmes to farmers was given priority. The following components are operational in Haryana for this purpose.

- Making use of information technology for communication at all district headquarters.

- Improving professional competence, knowledge and technical skill of extension functionaries by way of: -

  a) Promoting an effective interaction between senior scientists and extension workers

  b) Organizing exchange visit for extension functionaries within the country.

  c) Imparting advance training to field level functionaries on various subjects by senior scientists of State Agriculture University and ICAR.

- Information on various problems related to plant health/crop production of that area were provided through mass media such as video film, audio visual aids, television, etc. In addition, farmers were organized to visit Krishi Expo, Agri-Tech, Kisan melas at National /Regional /State level/University level.

The total outlay of the scheme during the year 2003-04 was Rs.88.31 lakh. These components are being implemented in accordance to guidelines of the government of India issued in respective schemes. The achievements of physical and financial targets are given below.

Table-3.5

Physical and Financial Achievements of the Programme on Agriculture Extension Services in Haryana

(Rs. Lakh)

Sr. No.	Name of Component	2003-04			
		Physical		Financial (Rs. Lakh)	
		Target	% Achievement	Target	% Achievement
1.	Exchange Visit				
	a) Farmers exchange visit within the country	4	100.00	2.0	100.00
	b) Extension functionaries within the country	2	100.00	1.40	100.00
2.	Farmers-Scientists Interaction at RRS, HAU during Rabi season.	16	81.25	1.60	78.75
3.	Training of farmers on improved cultivation during kharif and rabi seasons	140	95.00	7.00	95.00
4.	Demonstration on latest production technology during kharif and rabi seasons	560	87.86	5.60	78.04
5.	Training aids & material for farmers	8	100.00	16	92.25

	Total	-	-	57.00	88.31

Source: Ibid

It may be noticed (Table-3.6) that achievements of physical as well as financial components of the scheme have been commendable. But, targets were fully achieved for exchange visit while fulfillment of other targets ranged between 78 per cent and 95 per cent.

National Agricultural Insurance Scheme (NAIS)

The National Agricultural Insurance Scheme has been implemented in Haryana state from the year, 2004 for crops like wheat, bajra, maize, cotton, arhar in kharif season and gram and mustard in rabi season.

Table 3.6
Details of National Insurance Scheme in Haryana

Year	Season	Crops	Total No. of farmers Covered	Area (ha.)	Sum Insured (Rs. in lakh)	Premium collected (Rs. lakh)	Claims amount paid (Rs. Lakh)
2004	Kharif	Bajra, Cotton, Arhar, Maize	1,68,556	240115	12899.48	502.8	133.35
2004	Rabi	Not implemented					
2005	Kharif	Bajra, Cotton, Arhar, Maize	42,939	37366	1396.98	56.66	66.23
2005	Rabi	Mustard, Gram	78,461	85802	9502.81	190.05	1527.9
2006	Kharif	Bajra, Cotton, Arhar, Maize	53,482	41897	3998.61	188.97	2.83
2006	Rabi	Mustard & Gram	45261	29366	3543.39	70.86	29.31

Source: Ibid

The Haryana government has implemented wheat insurance on pilot basis in Ambala, Karnal & Rohtak districts in rabi, 2005-06.The four main crops i.e. bajra, cotton, arhar and maize are covered under the scheme in kharif season since 2004. During kharif and rabi 2006, around 1 lakh farmers and 71 thousand hectares were benefited from the scheme. A provision of 10% subsidy has been made for small & marginal farmers on the pattern of NAIS. State government has also implemented Varsha Bima on pilot basis in Ambala, Karnal, Hissar & Rohtak

for important crops during 2006. The scheme covered two type of insurance.1) seasonal rainfall: The aggregate actual rainfall during the season is compared with the normal rainfall for the season. The adverse deviations beyond 20% triggered claim. Full claim is paid when adverse deviation reached 80%. (2) Sowing failure, in case of sowing failure, aggregate rainfall between 15th June and 15th August is compared with the normal rainfall for this period and adverse deviation of 40% and beyond triggered claim. Full claim would be paid if the adverse deviation reaches 80%. A provision of 10% subsidy has been made for small & marginal farmers on the pattern of National Agricultural Insurance Scheme (NAIS).

Table-3.7

Insurance Scheme for Wheat in Haryana

YEAR	SEASON	Scheme	District covered	Crops	Area (ha.)	Sum insured (Rs. in lakh)	Premium collected (Rs. in lakh)	Total No. of farmers covered	Farmers Benefited
2005	RABI	Weather insurance	Ambala, Karnala, Rohtak	Wheat	N.A.	12.79	0.65	96	27
2006	Rabi (as on 2-4-2007)	Weather insurance	Ambala, Karnala, Rohtak, Hissar, Bhiwani	Wheat	3758	319.36	20.39	2142	104

Source: Ibid

The insurance scheme was also implemented for wheat crop in Ambala, Karnal, Rohtak, Hissar and Bhiwani during rabi 2005 and 2006. Although, 2142 farmers were covered but only 104 farmers were benefited (4.86%). This proportion is extremely small in a state like Haryana where wheat is the dominant crop (Table-3.7).

Section-II

Centrally Sponsored Schemes:

In addition to state sponsored schemes, Centre has been implementing following schemes in Haryana on cost sharing basis.

Intensive Cotton Development Programme

The basic objective of this scheme has been to raise productivity level by adopting improved seeds and associated improved farm practices, while continuing efforts to expand area under cotton. This scheme is being implemented on 75.25 basis between government of India and the state government.

Table-3.8

Sanctioned Funds and Expenditure on the scheme

Year	Sanctioned Funds			Expenditure		
	GOI share	State share	Total	GOI share	State share	Total
2001-02	149.48	49.83	214.08	145.99	48.60	194.55
2004-05	196.53	65.51	262.04	186.85	58.90	245.75
2005-06	280.31	60.06	286.37	203.48	54.80	313.08
2006-07	241.00	64.33	305.33	192.26	53.70	245.96

Source: Ibid

The above funds were spent on seed, fertilizer, implements and extension related components. A substantial increase has been noticed in Central government's share and state government's share between 2001-02 and 2006-07. The pattern of expenditure on various components is given in table-3.9. The cost of distribution of seeds, plant protection, field demonstrations, training to extension workers, new interventions like Bt cotton is shared by the central and state government. In addition, there are five special components. The cost of these items is fully born by the Central government.

Table-3.9

Pattern of Assistance under the Programme

No.	Component	Unit	Assistance Pattern	Beneficiary
A. 75:25 Share basis between GOI and state Govt.				
1.Seed				
(a)	Supply of Breeder Seeds	Qtl	Full cost	Seed producing agencies/ seed growers association, etc.
(b)	Distribution of Certified Seeds	Qtl	@ 25% of market price	Farmers
2. Plant Protection				
(a)	Farmers Fields School (FFSs)	No	Rs 17000/FFS	Farmers
(b)	Seed treatment with chemicals	Qtl	Rs. 40/Kg on pesticides/Bio – pesticides	Farmers
(c)	Establishment /Strengthening of Bio Agent Lab by State.	No	Full cost of Equipment	State Deptt. of Agriculture
(d)	Surveillance of disease and pests	(Dist.)	Rs. 1.00 lakh per district	State Deptt. of Agriculture
(e)	Supply of Bio Agent/Bio Pesticides	Ha.	50% of Cost or Rs. 900/- per hect which ever is less	Farmers
(g)	Supply of sprayers			
i)	Manually Operated	No.	50% of Cost or Rs. 800/- per hect which ever is less	Farmers
ii)	Tractor Operated	No.	50% of Cost or Rs. 10000/ per hect which ever is less	Farmers
3	Field Demonstration on farm Implements.	No.	Rs. 1.00 lakh per demonstration including Rs.5000/ for conducting demonstration.	Farmers
4	State Level Training to Extension Workers	No	Rs. 15000/ training camp.	Extension worker
5	Contingencies/Staff for State HQ and farmers visit programmes /Contingency fund for districts	-	Salary of staff and office Expenses etc.	State
6	New interventions (10% of allocation) Bt. Cotton kit b. Farmers Training	 No. No.	 Rs. 1000 per kit Rs. 5000/per training camp.	Farmers
B Components under 100% GOI funds				
1	Production of foundation seed	Qtl	50% cost limited to Rs. 50/Kg	Seed producing agencies/ seed growers association, cooperatives etc
2	Production of Certified Seed	Qtl	25% cost limited to Rs. 15/Kg	-do-
3	Season Long Training of facilitators	No.	Rs. 10.00 lakh per training	Facilitators
4	FLD ON Production Technology	Ha.	Rs. 5000/-per hect	Farmers
5	Electronic Print Media Information technology/Mass Media	-	Full cost of material	State/farmers

Source: Ibid

Now we discuss achievements of the targets of this programme.

Table-3.10

Component-wise Physical and Financial Targets and Achievements of Intensive Cotton Development Scheme in Haryana

(Rs lakh)

S.No.	Component	2005 – 06			
		Physical		Financial	
		T	% Ach.	Alloc.	% Expenditure
1.	Supply of breeder seed	3.2	100.00	1.22	96.72
2.	Distribution of Certified seed (Qtl.)	4500	76.69	71	97.20
3.	Training for extension workers (No.)	15	100.00	1.7	132.35
4.	Farmers Field Schools (No.)	30	100.00	4.4	100.00
5.	Distribution of sprinkler sets (No.)	300	59.66	19.26	82.81
6.	Drip Irrigation system	30	6.66	2	25.00
7.	Surveillance of pests & diseases	6	100.00	4.64	93.75
8.	Distribution of pheromone traps (Hact.)	10000	85.86	19.48	99.28
9.	Distribution light traps (Ha.)	1000	98.50	3	98.67
10.	Distribution of PP equipment (No.)	20000	84.50	56.1	87.40
11.	Tractor mounted sprayers (No.)	150	64.66	8.56	100.00
12.	Supply of bio-agent (Hact.)	5000	100.00	22	101.32
13.	Staff & contingencies	-	-	18.7	99.41
14.	Setting of Bio-agent Lab (No)	1	0.00	-	-
15.	Strengthening of State Bio- Control Lab.(No)	1	100.00	1	100.00
16.	Print Media	-	-	5	87.80
17.	Production foundation seed (qtl)	90	33.33	3.5	42.57
18.	Production Certified seed (qtl)	4500	64.00	44	59.34
19.	Season Long training of Facilitators (No)	1	100.00	7	100.00
	Total			292.86	88.20

Source: Ibid

It may be noticed from Table 3.10 that physical targets of seven components were fully achieved. The crucial components like drip irrigation and production of foundation seeds indicated poor performance. The financial targets were achieved well in most of the cases except for production of breeder and foundation seeds.

Integrated Scheme of Oilseeds, Pulses, Oil Palm and Maize (ISOPOM)

Integrated Scheme of Oilseeds, Pulses, Oil palm and Maize (ISOPOM) is a centrally sponsored scheme being implemented in the entire state.

Government of India and the state government share the expenditure incurred under the scheme in the ratio of 75:25. It aims to increase area, productivity and production of oilseeds and pulses in the state. To achieve this objective, a large number of components are being implemented:

Haryana Seeds Development Corporation purchases breeder seeds of oilseeds and pulse crops from various Central Research Institutes and State Agricultural Universities as per allocation made by the government of India. Full cost of the breeder seeds is reimbursed to the Haryana Seeds Development Corporation and HAU, Hissar. They get the foundation seeds produced through their registered seed growers at their farms. Financial assistance at the rate of Rs. 500 per quintal of seed is provided to the Corporation and the University. Afterwards, Haryana Seeds Development Corporation, other government agencies and HAU, Hissar and private traders provide certified seeds to the farmers at 50 per cent cost of seeds limited to Rs.1200 per quintal.

Block demonstrations are organized for motivating the farmers to adopt recommended package of practices in oilseed and pulse crops. In these demonstrations, inputs like seed, fertilizers, pesticides, etc. are provided to the farmers at the rate of 50 per cent subsidy limited to Rs. 4000 per ha for groundnut, Rs. 3000 for soybean, Rs. 2500 for sunflower, Rs. 2200 for lentil, Rs. 2000 for moong, urad, moth, arhar & guar and Rs. 1500 per ha for til and castor. In addition, inter-cropping demonstrations are organized. Inputs like seeds, fertilizers, pesticides are provided to the farmers at 50% subsidy limited to Rs. 1000 per ha for oilseeds and pulse crops.

Seed minikits (kits having small quantity of seed) of new and promising varieties are distributed free of cost among the farmers. National Seeds Corporation (NSC) and State Farms Corporation of India (SFCI) supply the minikits according to allocation made by government of India. Also, gypsum, as a source of sulphur, is provided to the farmers at the subsidized rate of 50 per cent cost of material + transportation' limited to Rs.750 per ha. Also, Haryana Land Reclamation and Development Corporation (HLRDC) arrange stocking and distribution of gypsum. In addition, bio-fertilizers like rhizobium and phosphate

soluble bacteria (PSB) cultures are provided to the farmers at 50 per cent subsidy limited to Rs.100 per ha. Sprinkler sets are provided to the farmers at subsidized rate of 50 per cent limited to Rs.7500 per ha.

IPM demonstrations are organized for oilseeds and pulses with financial assistance of Rs. 930 per ha for mustard, Rs. 747.50 per ha. for gram, Rs. 1140 per ha for arhar, Rs. 1627.50 per ha for groundnut, Rs. 1230 per ha for sunflower and Rs. 428 per ha for soybean. In these demonstrations, bio-pesticides are provided to the farmers for the management of pests and diseases with the minimum use of chemical pesticides. Plant protection equipment (spray pumps) are provided to the farmers on 50% subsidy limited to Rs. 800 per PPE for manually operated and Rs. 2000 for power operated.

Training for farmers is organized to make the farming community aware about the new crop production and plant protection techniques,. There is a provision for financial assistance of Rs. 15000 per training and Rs. 17000 per Farmers Field School (FFS). In these FFSs, training and inputs are provided to a group of 30 farmers once in a week for ten weeks. A lump-sum amount of Rs. 2 lakh is made available under the scheme for publicity. Expenditure under this component is fully borne by the government of India.

Now, we provide information on achievements of physical and financial targets of the scheme (Table-3.11). It may be noticed that in case of a few components, physical targets were achieved fully and in some other cases, attainment was above 90 per cent. But, crucial components related to seed indicated poor performance. The same is true for sprinkler sets. Like physical targets, achievements of financial targets of seed related components was poor. It may be noted that target of rhizobium culture was fully achieved.

Table- 3.11

Achievements of Physical and Financial Targets of ISOPOM in Haryana

(Rs Lakh)

Component	Crop	Unit	Physical		Financial	
			Target	% Ach.	Allo.	% Expenditure
Purchase of breeder seed	Oilseeds	Qtl	1.39	53.24	0.10	40.00
	Pulses	,,	6.76	31.36	0.28	67.86
	Total	,,	8.15	35.09	0.38	60.53
Production of foundation seed	Oilseeds	,,	1712	1.75	8.56	1.75
	Pulses	,,	901	18.87	4.51	17.29
	Total	,,	2613	7.65	13.07	7.11
Production of certified seed	Oilseeds	,,	4240	70.75	21.20	70.61
	Pulses	,,	5332	37.51	26.66	37.36
	Total	,,	9572	52.24	47.86	52.09
Distribution of certified seed	Oilseeds	,,	5846	42.76	46.16	43.11
	Pulses	,,	5595	30.38	44.60	30.36
	Total	,,	11441	36.71	90.76	36.84
Minikits	Oilseeds	No.	68700	93.46	-	-
	Pulses	,,	45500	91.78	-	-
	Total	,,	114200	92.78	-	-
Block demonstrations	Oilseeds	Hect	1550	92.79	32.50	74.65
	Pulses	,,	1474	99.29	27.50	64.11
	Total	,,	3024	93.41	60.00	69.82
Demonstrations on Inter cropping	Oilseeds	,,	500	96.43	5.00	74.00
	Pulses	,,	1000	100.00	10.00	72.60
	Total	,,	1500	86.30	15.00	73.07
Training of farmers	Oilseeds	No.	10	90.86	1.50	100.00
	Pulses	,,	10	100.00	1.50	100.00
	Total	,,	20	100.00	3.00	100.00
Sprinkler sets	Oilseeds	No.	500	20.00	50.00	18.00
	Pulses	,,	200	21.50	20.00	13.15
	Total	,,	700	20.43	70.00	16.61
Rhyzobium and PSB culture	Oilseeds	Pkt.	33000	100.00	1.65	100.00
	Pulses	,,	27000	100.00	1.35	100.00
	Total	,,	60000	100.00	3.00	100.00
Integrated Pest Management						
IPM demonstrations	Oilseeds	Hect	3700	100.00	22.97	95.30
	Pulses	,,	1750	100.00	15.46	94.44
	Total	,,	5450	100.00	38.43	94.95
PP equipment	Oilseeds	No.	3000	100.00	12.00	72.50
	Pulses	,,	2000	100.00	8.00	73.88
	Total	,,	5000	100.00	20.00	73.05
Publicity	Oilseeds	-	-	-	1.00	62.00
	Pulses	-	-	-	1.00	60.00
	Total	-	-	-	2.00	61.00
Staff and contingency	Oilseeds	-	-	-	6.00	83.33
	Pulses	-	-	-	6.00	81.17
	Total	-	-	-	12.00	82.25
Total	Oilseeds	-	-	-	571.89	62.79
	Pulses	-	-	-	216.21	43.30
	Total	-	-	-	788.10	57.44

Source: Ibid

Scheme on Sustainable Development of Sugarcane Based Cropping System (SUBACS)

This scheme was initiated for the development of sugarcane. The main objective of this scheme is to ensure development of sugarcane in the assigned area of the sugar mills (in 15 sugar mills) of Haryana. It was introduced from the year 2000-01. The scheme is being implemented on 75:25 sharing basis between government of India and state government. This ratio changed to 90.10 from the year 2001-2002. Outlay of the scheme for the last three years is given below.

Table-3.12

Expenditure on SUBACS Scheme in Haryana

(Rs. in lakh)

Year	GOI Share	State Share	Total	% Expenditure
2002-03	99.00 (90%)	11.000 (10%)	110.00	100.00
2003-04	62.10 (90%)	6.900 (10%)	69.00	100.00
2004-05	87.82 (90%)	9.76 (10%)	97.58	97.69
2005-06	114.30 (90%)	12.80 (10%)	127.10	100.00

2006-07	315.54 (90%)	35.06 (10%)	350.60	98.06

Source: Ibid

The expenditure on the scheme in 2003-04 and 2004-05 declined from the level of 2002-03. Again, it rose significantly and reached to around 351 lakh from the earlier level of Rs.110 lakh. The allotted expenditure was utilized to the tune of 98 per cent.

Like earlier described schemes for the development of various crops, it has seed production, demonstration and training components. Details are given below:

Table-3.13

Components of the scheme

Sr. No	Components
1.	Demonstration
	a) Field Demonstration: 2000 Field Demonstration on the farmers fields for adoption of inter cropping in sugarcane crop in the state. The assistance for these demonstrations for the cane growers on the inputs for inter-crops at the rate pf Rs. 3000 per hectare will be provided. Remaining cost will be borne by the farmers themselves.
	b) Farmer Field Schools: - In order to promote IPM technology through farmers field schools in sugarcane growing areas, it is proposed to organize 500 FFS in the state. An assistance @ Rs. 17000/- per FFS is provided for tea, honorarium to trainees, bio pesticides, bio agents and light, traps, etc.
	c) Release of bio- control agents/ bio pesticides: The bio-agents/bio pesticides in 5000 hectares have been released for the control of diseases @ Rs. 500/- per hectare.
	d) Promotion of IPM Technology:- To Popularize IPM Technology in sugarcane crop, the bio-agents/bio pesticides & light traps available/ supplied to the cane growers @ Rs. 2500 per hect. for 400 hectare.
2.	Training
	a) State level four training programmes for the staff of cane section & sugar mills each of three days duration with an assistance of Rs. 15000 per training
	b) 150 farmer trainings programme at village level with an assistance of Rs. 1500 per training for one-day duration. The number of trainees was 50 in each training camp. The cost of tent, literature and refreshments, etc. is provided.
3.	Seed Production
	Assistance is provided to the farmers for multiplication of 400 acre of area of early maturing high sugar and disease free varieties of sugarcane for distribution to the cane growers. An assistance of Rs. 2500 per acre is provided to the cane growers.
4	Multiple Ratooning In Order to make sugarcane cultivation more remunerative to the farmers, programme for encouraging the farmers to take many ratoon crops is taken up by way of giving assistance to the farmers for shaving of stubbles, pruning of roots, placement of fertilizer & gap filling, etc. @ of Rs. 2000/- per hectare
5	Demonstration on Ring Pit Sowing Method Assistance is provided to the cane growers @ Rs. 10,000 per demonstration for one hectare hiring for pits digging machine and labour charges, etc.
6	Wide Row Spacing Method of Cultivation: Assistance is provided to the cane growers @ Rs. 4000/acre for demonstration of acre for hiring of machines, labour charges and fertilizer, etc.
7.	Hot Moist Plant. Incentive for Sugar Mills for setting up the Hot Moist Treatment Plant @ Rs. 2.00 lakh per plant.
8.	Bio Control Lab. Strengthening of Bio Control Lab. @ Rs. 10.00 lakh per Lab.

Source: Ibid

A perusal of achievements of set targets of sugarcane development scheme in Haryana indicates that achievements of physical targets were overwhelming. Specially, multiple rationing and ring pit demonstrations fulfilled their physical targets to the tune of 170 and 346 per cent during 2006-07. Along with excellent achievements of physical targets, financial performance was note worthy. There was not a single component, which was lagging behind (Table-3.14).

Table-3.14

Physical and Financial Targets and Achievements of SUBACS Scheme for the Year 2006-07

Sr. No.	Component	Units	Physical		Financial (Rs.)	
			Target	% Achievement	Target	% Achievement
1	Demonstration					
	a) Field Demonstrations (intercropping)	No.	1750	100.00	5252000	99.52
	(b) IPM Demonstrations through FFS	No.	494	100.00	8398000	100.00
2.	Training					
	a) State Level	No.	2	150.00	25000	150.00
	b) Village Level	No.	100	100.00	250000	97.97
3.	Seed multiplication	Ha.	100	100.00	250000	99.77
4	Multiple Rationing	No.	500	170.00	1000000	169.99
5	Ring Pit Demonstrations	No.	300	346.00	3000000	346.18
6.	Hot Moist Treatment Plant	No.	15	100.00	3000000	100.00
7.	Tissue Culture Lab.	No.	1	100.00	1000000	100.00
8.	Bio Control Lab.	No.	1	100.00	1000000	100.00
9.	Exposure Visit	No.	1	100.00	80000	100.00
10.	Contingency	-	-	-	130000	148.08
	Total	-	-	-	26785000	129.69

Source: Ibid

National Watershed Development Project for Rainfed Areas (NWDPRA) :

This is a 100% centrally sponsored scheme under Macro Management Mode (MMM). The criterion for the selection of blocks is status of irrigation. At present, scheme is being implemented in 10 blocks namely; Pinjore, Barwala and

Raipur Rani in Panchkula district, Shahzadpur in Ambala district, Tosham, Siwani and Charkhi Dadri in Bhiwani district, Hissar-I and Hissar-II in Hissar district and Mahendergarh in Mahendergarh district. The micro-watersheds wise financial allocation is given below: -

Table-3.15

Financial Allocation to Watersheds Scheme during 2004-05 and 2005-06

Sr.No.	Name of watershed	2004-05 (Rs.)	% of Share	2005-06	% of Share
1.	Badgodam (new)	70.69	9.74	54.90	9.73
2.	Baghwali (new)	70.52	9.71	54.76	9.72
3.	Kot Billa (new)	52.32	7.21	40.64	7.21
4.	Shehzadpur (new)	61.47	8.47	47.74	8.47
5.	Khudana (new)	163.80	23.56	127.20	22.56
6.	Khawa (new)	61.425	8.46	47.70	8.46
7.	Unn (New)	61.425	8.46	47.70	8.47
8.	Sarsana-I (Recast)	61.425	8.46	47.70	8.46
9.	Sharwa (Recast)	61.425	8.46	47.70	8.46
10.	Siwach (new)	61.425	8.47	47.70	8.46
	Total	725.92	100.00	563.74	100.00

Source: Ibid

Table 3.15 reveals that Khudana watershed received the highest share of allotted funds. Remaining watersheds received an allocation between 7 and 10 per cent.

Scheme for enhancing productivity of degraded lands in the catchments of Flood Prone River

This is a 100% centrally sponsored scheme under Macro Management Mode (MMM). The scheme envisages to moderate influence on the flood situation in the state. The area of operation falls under the districts of Yamunanagar, Panchkula and Ambala. The Ghaggar catchment has been surveyed and delineated into private watersheds. As per the report, 94 sub-watersheds fall under the category of very high and high watersheds. At present, 2 sub-watersheds are under implementation. Drainage line treatment is adopted both in arable and non-arable land.

Scheme for reclamation of alkali soils in Haryana is a 100% centrally sponsored scheme under Macro Management Mode (MMM). Subsidy on gypsum @ 50% is being provided to the farmers. The scheme is being implemented throughout the state. The rate of subsidy has been reduced to 25% w.e.f. 1.4.2003. However, state government is providing matching funds from this date on resources to keep the subsidy level at 50%. Sprinkler irrigation system is adopted for judicious use of available water. Subsidy under the centrally sponsored schemes is being provided at the rate of Rs.15,000 per set to SC/ST farmers and 10,000 to other farmers. Subsidy is also available on laying of underground pipeline system of water conveyance @ 25% or maximum Rs.30, 000 per beneficiary.

Soil conservation is an important component of this scheme. Physical and financial targets and achievements of soil conservation scheme during 2005-06 are given below.

Table-3.16

Physical and Financial Targets and Achievements under Soil Conservation Schemes during 2005-06

Sr.No.	Scheme	Unit	Target		Achievement (%)	
			Phy.	Fin. (Rs. lakh)	Phy.	Fin.
1.	NWDPRA	Ha.	3696	180.00	93.72	91.48
2.	F.P.R., Ghaggar	Ha.	3225	180.00	83.00	9.29
3.	Land Reclamation	Ha.	12500	260.00	106.03	100.00
4.	Improvement in Farm Water Management	Ha.	1660	36.61	55.96	83.22
5.	Land Leveling.	Ha.	500	10.00	61.00	97.50

Source: **Ibid**

Table 3.16 indicates component wise achievements of set targets of soil conservation schemes in Haryana. In this case, achievements were mixed. Land reclamation targets were overwhelmingly achieved. On the other hand, attainment of physical targets of land leveling and improvement in farm water management was moderate. It may be mentioned that only 9.29 per cent of financial target was achieved in case of FPR Ghaggar.

Chapter-4

Nexus between State Intervention and Agricultural Development

Introduction:

This chapter aims to briefly review the nexus between budgetary expenditure and agricultural development in Haryana. Realizing the potential of the state, policy planners introduced a variety of measures in the form of schemes and programmes which were much wider and deeper to influence growth of agriculture in the state. The whole package of policy initiatives introduced in the early 21st century aimed at inducing dynamism in the agricultural sector, enhancing efficiency and growth, strengthening the economy to be more resilient to internal as well as external competition and improving the technology to enhance growth and development of the state.

Now, we would discuss effects of government intervention on crucial aspects related to development.

I. Impact of Budgetary Expenditure on State Income and Poverty:

Haryana was relatively backward area in the former Punjab state and at the time of formation of the state in 1966. The state ranked fifth in India in per capita income. Gradually, it attained second position in the country during the seventies and eighties. Punjab was ahead with a per capita income of Rs. 25615 at current prices against Rs. 21966 in Haryana during 1999-2000. After five years, Haryana crossed over Punjab and has attained an income level of Rs. 38832 against Rs. 34929 in Punjab. It shows an increase of about 76.78 per cent for Haryana and 36.36 per cent for Punjab during a period of five years. These per capita income levels are much higher than the national average of Rs. 15839 in 1999-2000 and Rs. 25716 in 2004-05. Even, the percentage increase in Haryana was higher than the country level (62.36 per cent)

We have observed in Chapter-3 that recent policy initiatives addressed several critical areas. The overall response of the Haryana economy to the development process was very encouraging. The state produced good results in terms of economic growth during 1985-86 and 2004-05. The rate of economic growth surpassed 10 per cent in most of the years. However, economic growth was not observed sustainable and it fluctuated from year to year. For instance, NSDP growth, which was 4.39 per cent in 1986-87 rose to 11.14 per cent next year. During 1988-89, rate of growth of the NSDP became 13.18 per cent. After this point, growth in NSDP declined and never reached to this level. The last analysed years recorded a growth rate of 10.73 and 11.30 per cent respectively.

Economic growth is the primary objective of the government in Haryana and the implicit assumption with this objective is that there is a multi co- linearity between growth, reduction in poverty and increase in employment. Moreover, it is assumed that benefits of economic growth would automatically percolate down to rural population. The issue of debate, therefore, is whether growth has percolated or increased income in rural areas of the state.

A related issue to economic growth is the extent of poverty in rural areas. Poverty exists in rural areas because of unequal distribution of assets, particularly land, resulting in very low income for a section of population, employment with poor wages and unemployment for a certain period of time during a year, inadequate off-farm employment and low wage rate, etc. Despite fast development, poverty does exist in Haryana. A study by Minhas et al. indicates that between 1970-71 and 1987-88, extent of poverty in rural areas declined from 40.02 to 23.17 per cent in Haryana.

Table-4.1

Percent of Population below the Poverty Line in Haryana, Punjab and India

State	Poverty Line (Rs.)		Population below the poverty line	
	Rural	Urban	Rural	Urban
Haryana	414.76	504.49	13.60	15.10
Punjab	410.38	466.16	9.10	7.10
All India	356.30	538.60	28.30	25.7

Source: Agricultural Statistics at a Glance, Ministry of Agriculture, New Delhi

Economic development has affected the population below the poverty line in the state. As per current estimates, Haryana has 13.60 per cent of rural and 15.10 per cent of urban population below the poverty line. On the other hand, agriculturally developed state of Punjab has 9.10 and 7.10 per cent of population below the poverty line in rural and urban areas. The achievement of Haryana is undoubtedly lower than Punjab but it is commendable in comparison to all India where 28.30 and 15.10 per cent of population is below the poverty line in the same situation. Thus, progress made by Haryana in agricultural development is worth appreciating but for further development, policy support is needed in key areas such as marketing reforms and in time supply of inputs.

II. Impact of Budgetary Expenditure on Agricultural Development

Haryana agriculture has witnessed an excellent growth during the decades of 1970s and 1980s. Foodgrains production increased from 2592 thousand tonnes in 1966-67 to 6036 thousand tonnes in 1985-86 and further to 8147 thousand tonnes in 1990-91 and 12329 thousand tonnes in 2003-04. The productivity of wheat and rice jumped from 1161 kg/ha. and 1425 kg/ha. to 2749 kg/ha. and 3937 kg/ha. during this period. Improvement in productivity, which has more than doubled during this period, has contributed significantly towards the rise in agricultural production. The growth in productivity resulted from the adoption of high yielding varieties (HYVs) of rice and wheat along with associated inputs such as improvement in irrigation, application of chemical fertilizers and favourable price policy. The consumption of chemical fertilizers increased substantially. The use of high yielding variety seeds for cultivation of wheat and rice is currently high and almost 97 per cent of cropped area of wheat is under these seeds. The net irrigated area is more than 80 per cent of net sown area. The farming in Haryana is highly mechanized and use of tractor, tubewells and farm harvesters is very common. Even, small and marginal farmers are utilizing these inputs to enhance productivity of various crops grown by them.

A stagnation in the pace of growth in production of food grains has been noticed from 1995-96 but food grains production started increasing after 1997-98

and reached to 13193 thousand tonnes during 2003-04. Haryana also performed well in growing rape and mustard and cotton. The production of former increased from 225 thousand tonnes in 1985-86 to 965 thousand tonnes in 2003-04 recording a growth rate of 8.94 per cent per annum in this period. The output of cotton grew from 745 to 1407 thousand bales in the same period and recorded a growth rate of 3.60 per cent per annum between 1985-85 and 2003-04.

Animal husbandry is generally regarded as an integral part of agriculture for the simple reason that, by and large, it is an adjunct to the agricultural operations carried out by the farmers and the village community. The upkeep and development of livestock, mostly bovine-cattle and buffaloes, as well as, poultry and piggery forms an intrinsic part of this sector and its importance can be gauged from the fact that about one-third of the total agricultural contribution to the Haryana GSDP comes from this sector.

The contribution of livestock to state economy is well known. It has remained steady between 8 per cent to 9 per cent at current prices between 1980-81 and 2004-05 whereas the contribution of overall agriculture in GSDP has declined from 53.76 per cent in eighties to 24.98 per cent in 2004-05. The scope for diversification in animal husbandry has also been well recognized. This sector not only provides basic nutrition to population but also enhances opportunities for self-employment for the rural masses, especially women. The rural employment in livestock sector grew at the rate of 4.15 per annum between 1972 and 1988 against an overall national growth rate in employment of 1.1 per cent over the same period.

The milk yields in Haryana are high in comparison to the all India level. The net per capita availability of milk in the state is 620 grams against 197 grams in the country. There was around five-fold increase in milk production between 1966-67 and 2004-05. It has gone up from 10.89 lakh tonnes to 52 lakh tonnes.

Dairy farming has picked up in Haryana. A large proportion of workers engaged in this activity belong to the category of small and marginal farmers, agricultural labourers and members of the weaker sections of rural society. A number of state and central sector schemes are afloat to give financial

assistance and subsidy to dairying units of upto ten milch animals. During 1997-98, 1400 such new mini-dairy farms were developed in the state.

Haryana has unexploited potential of horticulture. State is making efforts to emerge as one of the important states in horticultural crops. The main focus has been laid on development of fruits, vegetables, mushrooms, and floriculture with a view to give a boost to the growth of horticulture. Special emphasis has been given to the production and supply of good quality fruits and vegetables. The area of fruits and vegetables has increased from 56624 hectares during 1990-91 to 59574 hectares in 2003-04. Among fruits, mangoes and grapes are popular while potatoes and onions are the main crops in vegetables.

Fish culture has also great potential in Haryana. After green and white revolution, state is now on the threshold of blue revolution. Farmers are accepting it as secondary occupation. They have constructed fishponds in their own land. The government is providing technical and financial assistance through Fish Farmers Development Agency. The fish production has increased from 30 thousand tonnes in 1999-2000 to 33.04 thousand tonnes in 2000-01. Haryana has crossed the national average of 2226 kg./ha of fish production to 4044 kg./ha. during 2000-01 and ranks second in the country. The state had 8882 hectares of area under fisheries and an income of Rs.11, 82,400 from this sector

Now, we analyse impact of budgetary expenditure on important indicators of agricultural development in Haryana. The enhancement in agricultural production of various crops grown in Haryana has influenced value of agricultural out put per hectare and per capita in rural areas.

Fortunately, information on these crucial indicators is available for Haryana. The results show (Table-4.2) that value of agricultural output per hectare in Haryana was Rs 7327 per year and Rs. 611 per month during 1985-86. These incomes rose to Rs. 46857 and Rs. 3905 respectively during 2003-04. The total increase was computed around 6-7 times in this period. It comes to 29.94 percentage points per year. Similarly, agricultural output per capita in rural areas was Rs. 2300 per year and Rs. 192 per month during 1985-86. It rose to Rs. 10525 and Rs. 877 respectively during 2003-04. An increase of 356.77

percentage points was calculated between 1985-86 and 2003-04. It translates into 19.82 percentage points per year. This growth appears to be satisfactory but it is low in view of inflationary conditions in the country. Keeping in view these results, it is urgent to gauge the shortcomings and drawbacks of the ongoing schemes and programmes. It is also a must to evolve a vision and to suggest reforms in the policy initiatives to accelerate agricultural development of the state.

Table-4.2

Gross Value of Agricultural Output at Current Prices in Haryana

Year	Per Hectare	Per capita	Per Hectare	Per capita
	Per Year		Per Month	
1985-86	7327	2300	611	192
1990-91	14574	4199	1215	350
2003-04	46857	10525	3905	877
Increase between 1985-86 & 1990-91	98.85	82.29	-	-
Increase between1990-91 & 2003-04	221.40	150.57	-	-
Increase between1985-86 & 2003-04	539.11	356.77	-	-

Source: Statistical Abstract of Haryana, Government of Haryana, Haryana, 2005.

III. Farm Sector Distress:

The political and economic thinking of the 20th century has stressed the establishment of welfare societies within democratic framework. Left to it self, the market mechanism may not produce that distribution of income, which provides basic amenities and minimum standard of living.

The crop farming in India has been experiencing diminishing returns and has caused farm distress. The National Farmers' Commission (NFC) has highlighted this phenomenon in India. According to the NFC, about 1.5 lakh farmers committed suicides in India upto 2006 in various states. The share of Maharashtra, Andhra Pradesh, Karnataka and Madhya Pradesh has been almost two third. Goa and Kerala have also reported substantial number of farmers' suicides. The causes cited behind these suicides have been crop failure, economic and social pressure. It is not the rich farmer but the small and marginal farmers and sometimes tenant cultivators who are victims and the number gets

bigger if we take into account women farmers. They die most commonly by consuming pesticides and extreme conditions of stress and loss of economic assets drive them to this act. Thus, main reason for farmers' economic distress is limited earnings from their very small sized holdings.

The farm loan waiver announced in the Budget 2008-09 has received wide spread acclaim. The main question is will this provide the desired relief to the farmers and resolve the current agrarian stress. Unless, India protects its domestic agriculture from cheap imports, rising costs and low capital formation, it is not possible. In fact, India needs a total revamp of agriculture.

The Gangetic plain region and eastern India have seen fewer farm suicides. States such as Uttar Pradesh, Uttrakhand, Bihar, Jharkhand and Orissa have reported very few suicides of this kind. These states in many respects are different from the states with higher farmers' suicides. These are overwhelmingly food crop regions. They are not intensive input zones and their costs of cultivation are much lower. Use of chemicals is at much lower levels. Government support prices for food crops provide minimal stability. The status of water availability in these states is much superior.

We have observed that large majority of farmers, more than 70 per cent in Haryana own small tiny land holdings, which provide low income for the sustenance of the family and create distress. Most of these families supplement their income by taking up non-farm employment. It is a hard reality that their income levels are low. In view of their poor income levels, it would be beneficial to provide them support to adopt improved technology to increase production and reduce farm distress. In addition, they should receive public services like free/subsidized medical, educational and transport facilities. These measures would add to their real income and would help in reducing the wide gap between the large and small/marginal farmers. The pattern of government intervention should be such that its effect on reducing economic inequalities is the strongest.

It is important that benefits intended for the poor farmers should preferably be given in kind rather than cash grants. Aid given in kind e.g.

seeds, fertilizers, pesticides, medicines and books cannot be turned into cash and diverted for other purposes. However, quality of these services should be ensured and benefits should go to intended farmers. These measures would reduce farm distress and improve welfare of the farming community in Haryana.

Chapater-5
Summary and Conclusions

This Chapter presents summary and conclusions of the present study. The main objective of this research has been to analyse growth in budgetary allocation to the agricultural sector in Haryana. The specific objectives of the study are as under:

(i) To analyse trends in budgetary allocation of resources to the agricultural sector as a whole and in the sub-sectors of agriculture.

(ii) To analyse schemes under operation in Haryana to accelerate the development of agricultural sector.

(iii) 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. Statistical Abstract of India and Agricultural Statistics at a Glance. These are supplemented with the information obtained from Directorate of Agriculture and Planning Department, Government of Haryana.

Main Findings

I. Population, Literacy, Occupational Structure and Income

Haryana is located on the northwestern side of the Indian union adjoining Delhi. The state extends from 27°3' to 31°9' of north latitude and 74°6' of east

longitude. It is bounded by the states of Punjab and Himachal Pradesh in the north, by Delhi and Uttar Pradesh in the east and by Rajasthan in the South and West. Haryana has a total surface area of 44,212 square kilometres and is one of the smallest states of the Indian union.

The total population of Haryana was 211.5 lakh persons in 2001. The sex ratio was 861, which is significantly lower than the all India level. The density of population defined as number of persons per square kilometres was 478 persons against 325 for the all India. It is due to proximity of Delhi and availability of employment opportunities in the primary, secondary and tertiary sectors.

The literacy rate in Haryana has been 67.91 per cent and a little higher than all India level (65 per cent). Among males, 79.25 per cent and among females, 56 per cent were literate during 2001. The contribution of women is important for the growth of the economy in Haryana. Therefore, it is essential to provide substantial educational facilities to women in the region. They should be motivated for this purpose.

In Haryana, 39.76 per cent of population was workers during 2001. Among males, this proportion was 50.47 per cent while it was 27.30 per cent among females. Work participation rate of population in the state is marginally higher than the all India level. It could be attributed to relatively higher work participation rate of female population.

Economic development of a region depends on proportion of working force engaged in primary, secondary and tertiary sectors. Agriculture is the main 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.

The economy of Haryana has recorded significant growth between 1985-86 and 2004-05 at current as well as constant prices (14.98 and 5.60 per cent per annum). It has been contributed by primary, secondary and tertiary sectors. The sectoral analysis reveals that primary sector which comprises of agriculture; livestock, forestry, fishing and mining sectors contributed 53.76 per cent to the

state income during1985-86. Its share declined to 24.98 per cent in 2004-05. The secondary sector, which covers manufacturing, construction, electricity, gas and water supply sectors had a share of 19.47 per cent in 1985-86 and it rose to 31.07 per cent during 2004-05. The tertiary sector, which comprises of trade, transport, banking, public administration and other services contributed a share of 26.77 per cent during1985-86. Its proportion has risen by almost 17 percentage points between 1985-86 and 2004-05. The structural composition of state economy has witnessed significant change during the recent years.

Thus, composition of income in Haryana reveals that share of primary sector is continuously declining whereas shares of secondary as well as tertiary sectors are continuously rising. It implies that state economy is shifting from agriculture to manufacturing and service sectors, which is a sign of structural change in the economy of the state.

II. Agricultural Development in Haryana

Agricultural development has been commendable in Haryana. But, it should be accelerated further because it employs more than 50 per cent of workers and provides livelihood security to the major proportion of population in the rural areas.

Land use Pattern

Land use pattern in Haryana indicates that net sown area occupies dominant proportion of land and covers more than 80 percent of the reported area in the state. Out of this area, 81 per cent was sown more than once during 2003-04. It is found high due to impressive development of agriculture in the state. Since, progress on this front in the state is commendable, a substantial increase was noticed in crop intensity between 1985-86 and 2003-04. The percentage of net irrigated area to net sown area in Haryana is around 84 per cent and it has been constantly rising during the referred years. Thus, land use pattern shows some change but it is not perceptible in Haryana during the study period.

Crop Pattern

An analysis of crop pattern in Haryana reveals that wheat (36.25%) followed by rice (15.89%), rape and mustard (9.69%) and cotton (8.23%) are the principal crops of the state. In addition, sugarcane and small millets are also grown by the farmers. The fact remains that crop pattern in Haryana is 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 rice and wheat has increased significantly during the reference period while gram has indicated a decline of almost 12%. It appeared that traditional crops like pulses and small millets lost substantially.

Growth of Area, Production and Yield

Wheat has gained acreage at the rate of 1.84 per cent per year between 1985-86 and 2003-04. Area under rice has increased at the rate of 4.10% per annum. Although acreage under maize, gram, total pulses, total foodgrains and sesamum has declined during this period, gram appeared to be the biggest looser by indicating a decline at the rate of 9.16 per cent per year.

Since area cultivated and yield of wheat and rice increased, their production has risen at the rate of 3.80 and 4.19 per cent per annum during the study period. The declining rate was most substantial in the case of gram (8.82 per cent per year). In addition, production of rape and mustard and cotton has increased at the rate of 8.94 and 3.60 per cent per year during the same period. The crops with declining production include gram, total pulses, maize and sesamum.

Yield is the most important factor influencing production in a region with low potential of area expansion. In Haryana, yield of important crops has been recorded above the all India level. The productivity per hectare of rice, wheat, maize, gram, sugarcane and total food grains was noted 2748 kg./ha., 3936 kg./ha, 2470 kg/ha., 814 kg/ha., 24467 kg/ha. and 3070 kg/ha. during 2003-04. Moreover, yield of these crops has indicated significant growth during the study period.

Input Use

The utilization of HYV seeds, fertilizer, pesticides, tractor and tube wells play an important role in boosting the agricultural development of a region. Haryana has been using these inputs for a long time. The consumption of fertilizer was high. The nitrogenous fertilizers are preferred over phosphatic and potassic fertilizers.

III. Expenditure on Agriculture and Allied Activities

Expenditure on agriculture includes revenue and capital expenditure. The total revenue expenditure of Haryana government in 1985-86 was Rs. 1056 crore which became Rs. 12304 crore in 2004-05. It increased at the rate of 14.70 per cent per annum. In total expenditure, capital expenditure accounted for 19.13 per cent in the beginning, which decreased, to 7.29 per cent in 2004-05. Although, it rose at the rate of 13.02 per cent per annum during this period, declining share of capital expenditure in the total expenditure of the state indicates policy shift. The compound growth rate, between 1985-86 and 1990-91was found negative.

The expenditure on economic services at current prices was Rs. 503 crore in Haryana in 1985-86. It increased to Rs. 3751 crore in 2004-05. The compound growth rate of increase was 12.37 per cent per annum. It may be noted that the share of capital expenditure out of total expenditure on economic services was 36.58 per cent during 1985-86. It showed a perceptible decline and became 14.72 percent in 2004-05. It indicates that this crucial component did not receive priority in the policy in Haryana.

The expenditure on agriculture and allied activities rose from Rs 91 crore in 1985-86 to Rs. 219 crore in 2004-05. The rate of increase was negative (-1.01%) per year for this period due to decline in capital expenditure. Even absolute growth has not been impressive looking at the status of agriculture in the state. The share of revenue and capital expenditure in total expenditure was 79.57 and 20.43 percent during1985-86. The capital expenditure became negative during the reference period. The growth rate of revenue expenditure

was recorded more than 10 per cent. This indicates that capital expenditure received inadequate attention by the government during the late eighties and reform period.

Share of expenditure on agriculture and allied activities to expenditure on economic services and total budget expenditure on revenue account was 18.07 and 8.61 per cent respectively during1985-86. The proportion of both declined during the reference period. It may be noted that share of total budgetary expenditure and expenditure on economic services to agricultural sector declined by 7 per cent and 12 per cent respectively. This implies change in focus of policy during this period. It is essential to mention that capital expenditure in both the cases became negative over the years. This affected capital formation in agriculture adversely The share of expenditure on agriculture and allied activities in the NSDP was 1.57 per cent during 1985-86, which dropped to a minimum of 0.31 per cent in 2004-05.

The overall scenario of budgetary allocation to agricultural sector, particularly capital expenditure in Haryana is extremely discouraging. Haryana being the substantial contributor to the national kitty in foodgrains should be vigilant towards the growth of infrastructure, which is possible through improving capital expenditure.

Pattern and Composition of Expenditure on Agriculture

Pattern and composition of expenditure on various items of agriculture in Haryana indicated that the state spent between 16 and 30 per cent of total agricultural expenditure on crop husbandry during 1985-86 and 2004-05. Its share was 25.65 per cent in the beginning. It reached to the highest level in 1992-93 (30.00 per cent). Thus, proportion of agricultural expenditure on crop husbandry has indicated a mixed trend of increasing and decreasing during the study period. The share of expenditure on soil and water conservation in total agricultural expenditure ranged between 5.05 and 11.22 per cent during the reference period. Its share was higher than rest of the years in 1986-87. The proportion of expenditure on animal husbandry was between 13 and 28 per cent. It reached to the highest level in the year 1999-00.

Dairy development and fisheries are crucial for the survival of small and marginal farmers with small land holdings in Haryana. Unfortunately, share of these sectors in agricultural expenditure was minuscule throughout the study period. The expenditure on forestry and wild life has shown a mixed trend and reached to the highest level of 25.86 per cent in 1990-91.

A special priority should be accorded to agricultural research and education by the government in view of status of agriculture in Haryana. In view of degrading natural resources and urgency for sustainable development of agriculture in the state, this component should be strengthened. Its share also dropped from the peak level of 19.26 per cent in 2001-02 to 9.83 per cent in the year 1991-92 The percentage of expenditure on cooperation showed an upward as well as down ward movement. It remained almost constant upto 1989-90 and then started rising. Again, it declined in 1993-94. In the remaining years, no marked change was noticed.

Item-wise per hectare expenditure on agriculture and allied activities in Haryana indicates that total expenditure increased from Rs. 129 in 1985-86 to Rs. 721 in 2004-05. It is almost six fold increase. A look at the item wise break up indicates that crop husbandry and forest and wild life received the highest priority

in per hectare terms during1985-86. However, animal husbandry followed by forest and wild life became prominent during 2004-05.

Item wise outlay on agriculture in Seventh, Eigth, Ninth and Tenth Five Year Plans in Haryana shows that outlay on crop husbandry is predominant, probably in conformity with the needs of the state. Centre has spent a higher proportion on this item when compared to other items. Agricultural research and education followed by agricultural finance institutions was the next priority of the government and consequently more than 10 per cent of the outlay was incurred on these items. The plan-to-plan variations in the outlay on different items are quite significant. 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. The proportion of plan outlay spent on agricultural research and education was 7.12 per cent during the Tenth Five Year Plan. It seems lower in view of the needs of the state.

IV. Schemes for Agricultural Development in Haryana

The central and state governments have initiated several schemes to accelerate agricultural development in Haryana since its formation in the year 1966. These schemes and programmes are helping farmers in enhancing productivity of various crops and raising incomes.

Central Government has been providing assistance for several programmes for boosting the agricultural development of Haryana. Macro management is a centrally sponsored scheme being implemented in the entire state. The Central government has sponsored Intensive Cotton Development Proramme on 75.25 per cent cost sharing basis. The basic objective of this scheme has been to raise productivity levels by adopting improved seeds and associate farm practices. The main components of the programme include distribution of seeds, plant protection material, field demonstrations and training to extension workers. The outcomes of the set targets of the covered components have been quite impressive. But, the most crucial component related to production of certified and foundation seed has not shown good results.

Integrated scheme of Oilseeds, Pulses, Oil palm and Maize is centrally sponsored programme for implementation in the entire state of Haryana in the cost ratio of 75.25. The main objective of this scheme is to increase area and yield of dry crops. Once again, most of the set targets were overwhelmingly achieved except production of foundation seeds and drip irrigation. These components are very crucial for the success of the scheme. Therefore, impact of the scheme on area expansion and yield improvement was not significant.

A scheme on Sustainable Development of Sugarcane based Cropping System has been implemented in Haryana with the assistance of the Central government. The allotted expenditure of around Rs.351 lakh was utilized to the extent of 98 per cent. The physical and financial targets were attained fully in this case during 2006-07.

A 100 per cent Centrally sponsored National Watershed Development Project is being implemented in rainfed areas of Haryana. In addition, scheme for enhancing productivity of degraded lands in the catchments of flood prone river was sponsored by the Central government under Macro Management mode. So far, the scheme had moderate influence on the flood situation in the state.

The state government has been implementing scheme for Integrated Pest Management for paddy and bajra crops through various activities. A compact area of IPM village is being used to popularize the scheme. The main components of the scheme include demonstrations, use of bio agents/bio pesticides, organizing Farmers Field Schools, organizing campaigns for rodent control and monitoring of pesticide residues. A sum of Rs.60 lakh was spent for this purpose.

The state government assists farmers in installing highly efficient tubewells with an expenditure of around Rs.117 lakh. But, performance of this scheme has been poor. It could achieve only 67 and 43 per cent of set targets of installation and development of tubewells.

In Haryana, about 50 per cent area is severely affected by the problems of erosion, alkalinity, salinity and water logging and most of this area falls in the Shivalik foothills. For arresting these negative developments, state has

sponsored a scheme of soil conservation with an outlay of Rs. 70 lakh. The achievements of physical as well as financial targets of this scheme have been appreciable during 2003-04.

In addition to above stated schemes, state government is implementing National Agricultural Insurance Scheme to benefit farmers. The crops of wheat, bajra, cotton, arhar and maize were covered under this scheme. Around 1lakh farmers and 71 thousand hectares of land were benefited from the scheme during 2006.

V. Impact of Budgetary Expenditure

State Income and Poverty

Policy initiatives in Haryana addressed several critical areas. The overall response of the economy to the development process was very encouraging. The state produced good results in terms of economic growth between 1985-86 and 2004-05. The rate of economic growth surpassed 10 per cent in most of the years. However, economic growth was not observed sustainable and it fluctuated from year to year. For instance, NSDP growth, which was 4.39 per cent in 1986-87, rose to 11.14 per cent in the very next year. Afterwards, rate of growth of the NSDP remained more than 10% per year. It was estimated 10.73 and 10.30 per cent during 2003-04 and 2004-05 respectively. The highest growth was achieved in the year 1988-89 (13.18%).

Economic development has affected population below the poverty line in the state. As per current estimates, Haryana has 13.60 per cent of rural and 15.10 per cent of urban population below the poverty line. On the other hand, agriculturally developed state of Punjab has 9.10 and 7.10 per cent of population below the poverty line in rural and urban areas. The achievement of Haryana is undoubtedly lower than Punjab but it is commendable in comparison to all India where 28.30 and 15.10 per cent of population is below the poverty line in the same situation. Thus, progress made by Haryana in agricultural development is worth appreciating but for further development, policy support is needed in key areas such as marketing reforms and in time supply of inputs.

Agricultural Development

The budgetary allocation to agricultural sector in Haryana was devised to encourage and increase production of various crops grown by the farmers. Farmers in this state produce a variety of crops with adequate irrigation facilities. A breakthrough in productivity of major crops is clearly visible.

Haryana agriculture has witnessed an excellent growth during the decades of 1970s and 1980s. The foodgrains production increased from 2592 thousand tonnes in 1966-67 to 6036 thousand tonnes in 1985-86 and further to 8147 thousand tonnes in 1990-91 and 12329 thousand tones in 2003-04. The productivity of wheat and rice jumped from 1161 and 1425 kg/ha. to 2749 and 3937 kg/ha. during this period. Improvement in productivity, which has more than doubled during this period, has contributed significantly towards the rise in agricultural production. The growth in productivity has resulted from the adoption of high yielding varieties (HYVs) of rice and wheat along with associated inputs such as improvement in irrigation, application of chemical fertilizers and favourable price policy. The consumption of chemical fertilizers has increased significantly. The use of high yielding variety seeds for cultivation of wheat and rice is currently high and almost 99 per cent of cropped area of wheat is under these seeds. The net irrigated area to net sown area is more than 80 per cent. Farming in Haryana is highly mechanized and use of tractor, tubewells and farm harvesters is very common. Even small and marginal farmers are utilizing these inputs to enhance productivity of various crops grown by them.

Production of major crops in Haryana has exhibited wide year-to-year fluctuations. For avoiding these uncertainties, government should manipulate level of expenditure in productive activities related to agricultural sector in such a way so that fluctuations in output are minimized. However, potency of expenditure is determined by two factors (a) how well organized and interrelated is the economic system and second, what is the adjustment capacity of the sector. The first factor implies that agricultural sector should be responsive to

budgetary expenditure measures. The second factor stipulates unutilized capacity or potential of the sector. These conditions limit the success of budgetary expenditure in controlling fluctuations in the production of agricultural out put.

The contribution of livestock to state economy is well known. It has remained steady between 8 per cent to 9 per cent at current prices between 1980-81 and 2004-05 whereas the contribution of overall agriculture in GSDP has declined from 53.76 per cent in eighties to 24.98 per cent in 2004-05. The scope for diversification in animal husbandry has also been well recognized. This sector not only provides basic nutrition to population but also enhances opportunities for self-employment for the rural masses, especially women. The rural employment in livestock sector grew at the rate of 4.15 per annum between 1972 and 1988 against an overall national growth rate in employment of 1.1 per cent over the same period.

Fish culture has also great potential in Haryana. After green and white revolution, state is now on the threshold of blue revolution. Farmers are accepting it as secondary occupation. They have constructed fishponds in their own land. The government is providing technical and financial assistance through Fish Farmers Development Agency. The fish production has increased from 30 thousand tonnes in 1999-2000 to 33.04 thousand tonnes in 2000-01. Haryana has crossed the national average of 2226 kg./ha of fish production to 4044 kg./ha. during 2000-01 and ranks second in the country. The state had 8882 hectares of area under fisheries and an income of Rs.1182,400 from this sector

The enhancement in agricultural production of various crops grown in Haryana has influenced value of agricultural out put per hectare and per capita in rural areas. Value of agricultural output per hectare in Haryana was Rs 7327 per year and Rs. 611 per month during 1985-86. These incomes rose to Rs. 46857 and Rs. 3905 respectively during 2003-04. The total increase was computed around 5-6 times in this period.. It comes to 29.94 percentage points per year. Similarly, agricultural output per capita in rural areas was Rs. 2300 per year and

Rs. 192 per month during 1986. It rose to Rs. 10525 and Rs. 877 respectively during 2004. An increase of 356.77 percentage points was calculated between 1986 and 2004. It translates into 19.82 percentage points per year. This growth appears to be satisfactory but it is low in view of inflationary conditions in the country. In view of these results, it is urgent to gauge the shortcomings and drawbacks of the ongoing schemes and programmes. It is also a must to evolve a vision and to suggest reforms in the policy initiatives to improve agricultural development of the state.

Farm Sector Distress

Large majority of farmers, more than 70 per cent in Haryana own small land holdings, which provide low income for the sustenance of the family and create distress. Most of these families supplement their income by taking up non-farm employment. It is a hard reality that their income levels are low. In view of their poor income levels, it would be beneficial to provide them support to make their holdings viable.

VI Policy Implications

Haryana has recorded excellent performance in agriculture after its formation in 1966. The potential of the high yielding varieties of seeds-fertilizer technology has been exploited to a great extent. The limited scope for expansion of irrigation facilities by canals was circumvented by increasing number of tubewells and pumping sets. As a result, production and productivity of wheat, rice, rape and mustard, sugarcane and cotton has increased significantly. These developments have made Haryana a second ranking state in agricultural development in India.

With a breakthrough in agricultural production, performance of this sector has been quite impressive. This breakthrough is not without its pitfalls. With the practice of intensive cultivation, resource degradation has been proceeding at the alarming rate especially in the wheat, rice region of the state. The yield rates of wheat and rice have been platueing despite improvement in input use level. The

high use of pesticides for cotton is creating its own problems. Under the prevailing circumstances, policy should focus on removing these bottlenecks through well thought out plans and their effective implementation.

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 strengthen without loosing time.

Haryana has great potential for future in certain thrust areas like horticulture, floriculture and tissue culture. Vegetables and fruits cultivation has a large potential for generating additional incomes for the farmers. In addition, dairying, which is already well developed, could be taken to full potential by increasing exports in the international market. Similarly, fisheries sector has potential to increase income of the farmers. The development of these sectors can take Haryana to new heights.

All the above-mentioned initiatives need investments. The state and Central governments have already initiated policies to address several critical areas. Some times, crucial components of the schemes are ignored and not monitored. Thus, budgetary resources should be devoted to areas with lacunae. But, monitoring the outcomes is an urgent need of the hour.

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Action taken on comments of the Coordinator

- Most of the comments are related to change in number of tables. Tables are systematically presented in all the chapters and contain required information.
- Details of methodology are incorporated in Chapter-1.
- The suggested regression exercise is not possible due to non-availability of time series data on poverty.
- Compound growth rate of GSDP by sector of origin and impact of government schemes on agriculture development have been already discussed in the report in Chapter-I and Chapter IV.