

## Performance of Agriculture and Allied Sectors in Haryana

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### Abstract

Agriculture occupies an important place in the development of an economy and the improvement of agriculture is necessary for a balanced growth of an economy. It can be said that agriculture has played vital role in development of Haryana. Science and technology has helped the state to touch the new heights. After the green revolution, Haryana has risen as the strong pillar of Agricultural Development. Agricultural Development has a lot of relevance in modern economics. Wheat, seed and crop diversification helped the agriculture sector. The development of agriculture provides necessary capital for the development of other sectors like industry, transport and foreign trade. In fact, a balanced development of agriculture and industry is the need of the day.

**Key Words:** Agriculture , Economy, Balanced Growth, Development, Green Revolution ,Crop Diversification and Foreign trade etc.

### Introduction:

Haryana state was emerged as a separate administrative entity on 01 Nov 1966 on the political map of India. Haryana is one of the smallest States in India with 4.4 million hectares of land, forming 1.34percent of the total geographical area of the country. Nearly 80 percent of the total

geographical area of the State is under cultivation of which about 84 percent is irrigated with cropping intensity of 184 percent Based on ecology and cropping pattern, the State can be divided into 3 agro-eco regions. Zone-I: consists of 8 districts, namely Panchkula, Ambala, Kurukshetra, Yamunanagar, Karnal, Kaithal, Panipat and Sonapat. This Zone forms nearly 32percent of the total area of the State. Zone-II: it consists of 7 districts, namely Sirsa, Fatehabad, Hisar, Jind, Rohtak, Faridabad and Palwal. This Zone accounts for nearly 39 percent of the total area of the State. Zone-III: it consists of 6 districts, namely Bhiwani, Mahendergarh, Rewari, Jhajjar, Gurgaon and Mewat. It covers nearly 29 percent of the total area of the State. The area falling under Zone I and II are ideal for crop diversification with wheat, rice, pulses, cotton and sugarcane as well as for raising dairy cows, buffaloes and poultry. These Zones have better irrigation facilities and good overall infrastructure. However, kandi area in these zones have serious problem of soil and water erosion and hence they are suitable for agro-forestry and agro-horticulture systems. Zone III is having major area under pearl millet and rapeseed & mustard and is also suitable for arid-horticulture. Mewat area is more suitable for agro-forestry, sheep and goat rearing.

### Salient Features:

- Small but agriculturally important State
- Impressive agricultural growth
- Rapid urbanization and dietary Changes
- Diverse agro-ecology and cropping Patterns
- Impressive growth in allied sectors (livestock, fishery, horticulture, poultry etc.)

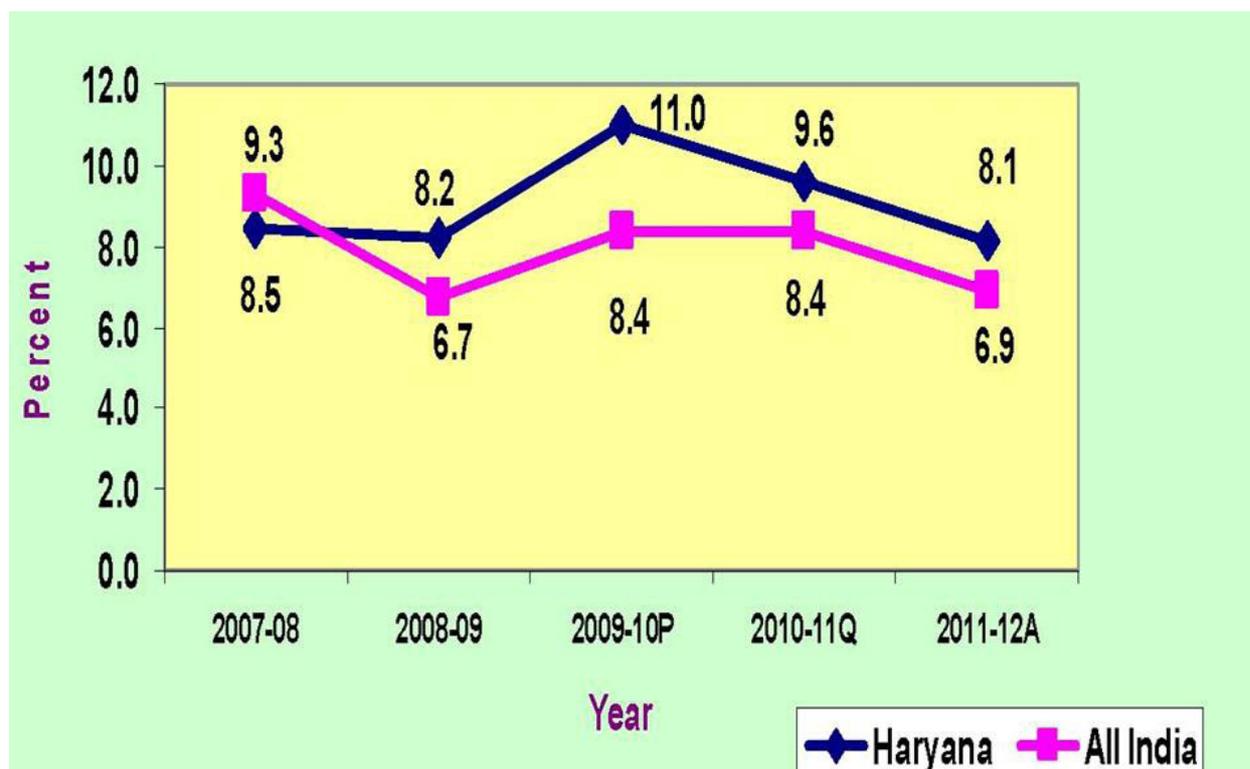
Notwithstanding significant progress in manufacturing and service sectors, agriculture sector continues to play a major role in the State economy contributing about 14.5 percent to its Gross Domestic Product (GDP) as well as providing employment to 51 percent of the work force. Even in case of industrial employment, agriculture based industries account for more than 31 percent. Murrah buffalo and Basmati rice are the pride possession of the State.

At present, about one lakh Murrah buffaloes are exported every year to other States and even abroad. The State enjoys 1st position in the production of Basmati rice and productivity in pearl millet and rapeseed & mustard. The foodgrain production has increased to 16.2 million tons in 2010- 11, as against only 2.59 million tons when the State came into existence in-1966-67. The State has the distinction of attaining food self-sufficiency in the shortest period. Currently, Haryana is the second largest contributor to the national food basket. Progressive policies and programs, good Research & Development (R&D) system, required infrastructure and hard-working farmers have all contributed to the steady growth in the State. During 2011-12, the GDP growth rate was 8.1% in

Haryana, as against 6.9% at all India level. As regards sectoral growth, service sector recorded the highest growth of 10.2% followed by industry (6.1%) and agriculture (5.1%).

The livestock sector contributes to about 30 percent of the State Agricultural GDP and the production of milk and egg has increased more than 5 times and 160 times, respectively since the formation of the State. The State has also great potential for increased production of higher income generating crops/ commodities like *guar*, horticulture, poultry and inland fish. Over 3.99 lakh hectare area has come under horticulture during 2010-11. In the last decade, the State has shown remarkable growth in poultry and fishery sectors. The State is having around 2.88 crore poultry birds for eggs and meat production. During 2010-11, around 9.5 thousand fish farmers covered about 17000 hectare inland water area producing around 94 thousand tons of fish. Since 1966-67, the fish production and productivity has increased many times. Today, Haryana stands second in inland fish productivity in India.

**Figure 1 : Growth of GDP of Haryana and All India at Constant (2004-2005) Prices (HES, 2011-12)**



Source :Haryana state agriculture policy,Draft,2012-13

Figure 1 shows that growth rate of GDP of Haryana is higher than all India.Over the years, the State has pursued progressive policies relating to enhancing investment in agriculture, strengthening R&D system, public distribution system ,Panchayatiraj institutions, irrigation development, land acquisition policy, subsidies towards credit and power use, infrastructure like road, market, power generation and supply, etc. These progressive policies combined with receptive farming community, immediately adopting technological innovations, have contributed to a very steady growth for the State, in general, and agriculture, in particular. Notwithstanding these very impressive achievements, the State is facing problems of decreasing size of farm holdings, decreasing cultivable area, increasing soil salinity, declining as well as rising water tables, imbalanced use of fertilizers and micro-nutrient deficiency, harsh climate, low forest cover (3.52%), considerable area still under rain fed farming (about 19%), lack of required processing and value addition facilities, storage constraints and off late shortage of labour for farming operations. All these factors are adversely affecting productivity enhancement. There is significant productivity gap in the field crops, horticultural crops and livestock. The State is deficit in pulses (except gram), vegetables and fruits. There is deceleration in total factor productivity particularly in rice, one of the main crops of the State. A lot remains to be done in case of land reforms, capital investment for infrastructure development, natural resource management, marketing, processing and value addition, improved environmental services, risk management, agricultural credit, insurance and agro-advisory services to the farmers. The State is yet to harness its comparative advantage using its niche for Murrah buffalo (to promote dairying and value added

products), Basmati rice, *guar*, mushroom, poultry, fishery, arid horticulture, agro-forestry and agro-tourism. The plight of farmers, particularly small and marginal, women and agricultural labourers, in terms of income, profitability, sustainability and overall livelihood security, is a matter of continuing concern to policy makers, planners and development agencies. In the backdrop of these concerns, the proposed Agriculture Policy of Haryana will focus on agriculture and its allied sectors ensuring enhanced investments, increased production, productivity, sustainability and profitability. Such a policy, once in place, will trigger the process of accelerated, sustained and overall growth with human face.

### Review of Literature:

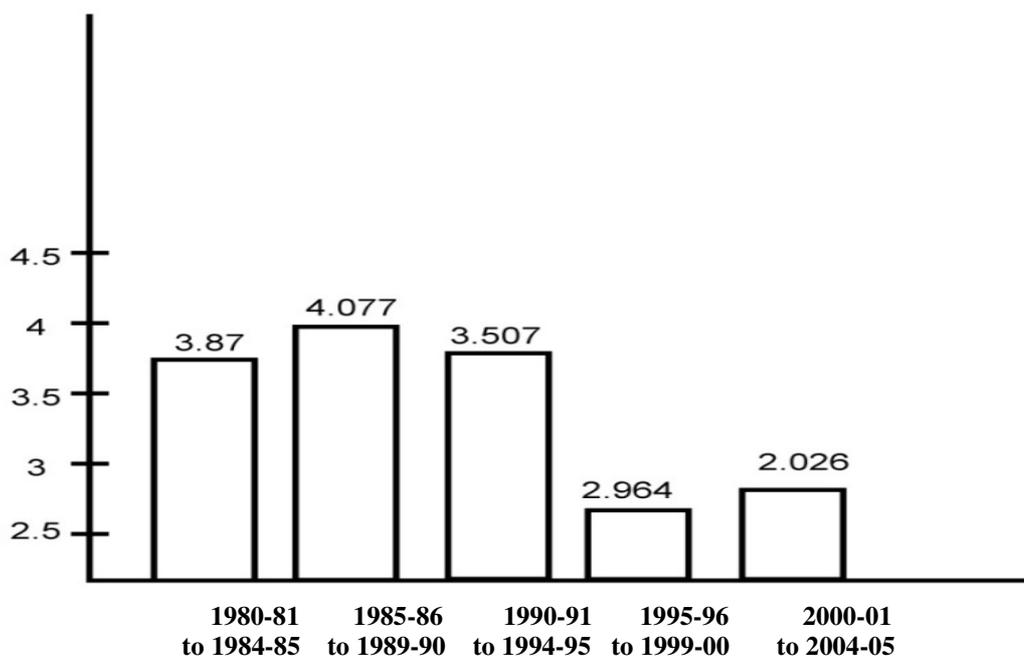
**Dev, Mahendra (2003)** found improvement in agriculture. He was in favour of second revolution in agriculture. To encourage the diversification of agriculture, there is a next of Hi-Tech technology. He also found some problems in agriculture, e.g.

- Finance problems
- Sterilization of prices
- Hiked prices of fertilizers, pesticides, crude oil
- Problem of credit creation in rural area
- Reduction in custom duty on drugs
- continues decline in GDP in agriculture
- Less irrigation facilitation

He suggested that agricultural development and food security will be improved with the development of employment through agriculture. The budget is silent on employment problem and two strategies are suggested to improve the performance of agriculture:

- To release the initiative and enterprise of farmer and the private sector in general by removing restriction on agriculture trade.
- To facilitate adequate supply response to the incentives by strengthening infrastructure, agricultural research and extension and delivery of the credit while protecting the environment.

**Mathur, Das, Sircar (2007)** raised some issues in agriculture .agriculture is a core sector of economy and 60 percent population is dependent on it for livelihood. Agriculture is not strong to meet the demand of the economy. The study identifies factors that affect agricultural growth and analyses constrains that have affected its growth in the sector. There has been a decline in growth rate of the agriculture sector during the 1990 till the recent past. This is accompanied with recent decline in yields per hectare for a number of food crops. There are vast inter-state differences in growth rate of agriculture and even more so for food grains. The compound average growth rates are shown in figure 2



**Figure 2:** Compound Average Growth Rates (Source: Central Statistical Organization CSO)

They analyzed state-wise trends in Agriculture. West Bengal is high in growth rate along with Haryana. They also studied the determinants of agriculture production public investments, private investments, subsidies incentives, irrigation facility are the major factors to improve the agricultural perfor in Haryana. They analyzed correlation between many factors. They found no correlation between public investment and rainfall, fertilizer and prices. This tells us that public investment follows its own pattern. They studies cob-Douglas function. The result of the Cob-Dougllass indicates that output is positively dependent on the public investment in agriculture.

**Gupta, S.K. (1993)** has revealed the vocational advantages of development of agro based industries in different parts of India. He examined the strength and weakness of agriculture sector. He gave new vision to agriculture sector specially in Haryana through boosting various programmes.

**Mangal Sen (1983)** has discussed the development of agriculture in Haryana and its potential for generating employment in Haryana. He said sustainable growth depends on the sustainable agriculture growth.

**Sharma Somnath (1981)** has examined the removal of Poverty through development in Agriculture. He also proved that employment growing in rural area of Haryana due of Agricultural development.

**Jodhka, S. Surinder (1994)** suggested modernization of agriculture. Modernization should lead not only to an increase in productivity and integration of agriculture into the broader national market but also being about a fundamental change in the social relationship of production leading to freeing of agriculture labour from all kinds of patronage and institutions dependency relationships.

**Objectives:**

1. To examine the performance of Agriculture and Allied sectors in Haryana.
2. To estimate the measure of the productivity of land.
3. To examine the role of agriculture in state's economic development.
4. To examine the comparison of agricultural development in Haryana with other states and all India.

**Research Methodology:**

Tabular Charts, Diagrams, , percentage and content analysis are applied.

**Performance of Agriculture and allied sectors in Haryana**

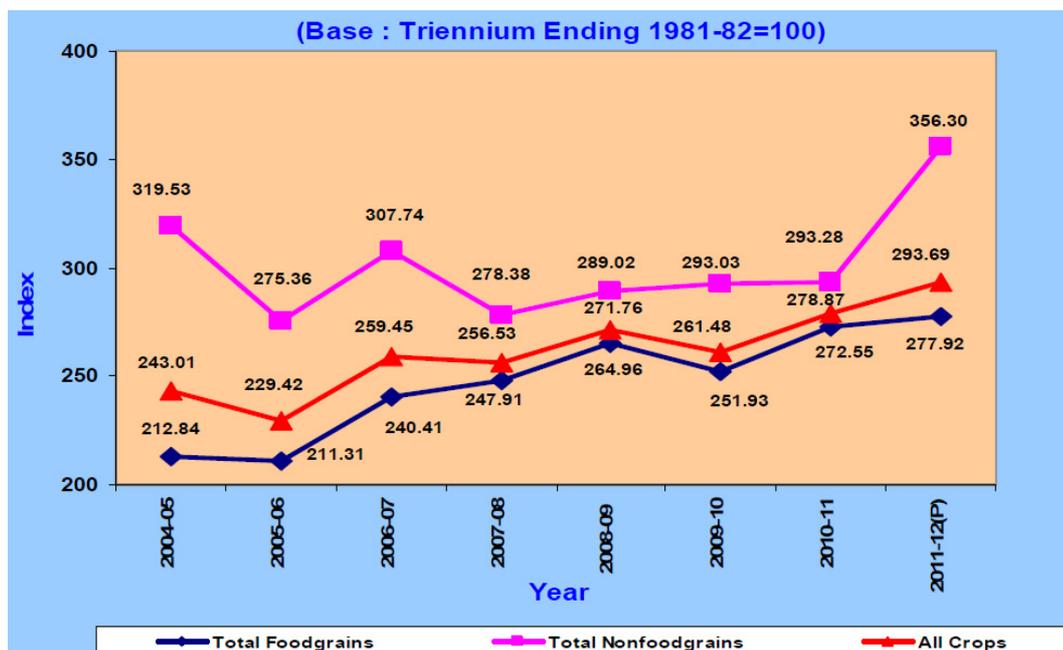
The growth rate of Agriculture Sector in Haryana's GDP grew after independence for the Government placed special emphasis on this sector in its five year plans. Further, the green revolution took place in the Haryana giving a major boost to the growth of agriculture sector. As a consequence of rapid structural transition of the Haryana's economy over the years, the contribution of the Agriculture and Allied Sector at constant (2004-05) prices went down to only 16.7% in the state GDP during 2011-12. The economic growth of the State has become more sensitive to the growth rates in Industry and Services Sectors during the past few years but the recent experience suggests that high GDP growth without consistent and rapid agricultural growth is likely to accelerate inflation in the state, which would jeopardize the larger growth process. Therefore, the growth of the agriculture and allied sector continued to be a critical factor in the overall performance of the state economy.

Agriculture and allied sector is composed of agriculture, forestry and logging and fishing sub sectors. Agriculture including crop husbandry and dairy farming is the main component contributing about 95% in the GDP of the agriculture and allied sector. The contribution of forestry and fishing sub-sectors in GDP of agriculture and allied activities is around 4% and 1%, respectively. The impact of forestry and fishing sub-sectors is, therefore, very low on the overall growth of agriculture and allied sectors.

In Haryana, about 71.72% of the cropped area is under foodgrains and the remaining 28.28% area is under non-foodgrains. Foodgrains consist mainly of cereals and pulses with weights of 61.35% and 10.37%, respectively. Non-foodgrains consist of oilseeds, fibre and miscellaneous crops with weights 4.87%, 11.63% and 11.78%, respectively. In Haryana, the index of agricultural production of all crops moved moderately from 243.01 in 2004-05 to 256.53 in 2007-08. It moved to 271.76 in 2008-09 and attained the level of 278.87 in 2010-11. In 2011-12, it stands at 293.69. The movement of agricultural production indices of foodgrains, non-foodgrains and all crops is shown in figure 3.

Haryana has become a leading producer of white button mushroom and ranks first in India as far as seasonal cultivation of mushroom is concerned. The production of mushroom is increased because of the abundant availability of wheat and paddy straw, easy availability of quality spawn and comprehensive training programmes provided by Universities and Government of Haryana. Also the success of mushroom production is because of the availability of nearness of the market, e.g., of Delhi market.

Figure 3: Agricultural Production Indices of Foodgrains, Non-foodgrains and All Crops



(Source: Economic Survey of Haryana 2012-13)

Animal husbandry is also an important sector to increase the income of the rural masses in the state. It is the management and care of farm animals by humans for profit, in which genetic qualities and behaviour, considered to be advantageous to humans, are further developed. The term can refer to the practice of selectively breeding and raising livestock to promote desirable traits in animals for utility, sport, pleasure, or research but also refers to the efficient exploitation of a species in agriculture advantageous to humans.

Fishery is an entity engaged in raising or harvesting fish, which is determined by some authority to be a fishery. According to the FAO, a fishery is typically defined in terms of the people involved, species or type of fish, area of water or seabed, method of fishing, class of boats, purpose of the activities or a combination of the foregoing features. The definition often includes a combination of fish and fishers in a region, the latter fishing for similar species with similar gear types. Fisheries management draws on fisheries science to formulate rules and regulations that define where, how, and how many fish can be caught each year. The aim is to allow us to harvest as much as possible without destabilizing the delicate marine ecosystem, thus ensuring the availability of fresh-caught fish to future generations. Fisheries managers look at data provided by scientists and use complex models to predict how present fishing efforts will affect the future numbers of various species and distinct genetic populations. Haryana government is providing the technical and financial assistance through Fish Farmers Development Agencies to the fish farmers, which have been set up in many of the districts of the state.

The broad based adoption of high yielding varieties, extensive use of fertilizers, improved access to water through public and private investments in irrigation and power, and improved access to markets through public investments in rural infrastructure have been important in sustaining agricultural growth in Haryana. In particular, fertilizer consumption as well as access to irrigation and wholesale markets are among the highest in the country. These have helped maintain food grain output growth in Haryana at 3% per year in the 1990s, compared the All-India declining average annual growth rate of 1.7%. The success of farming system rests with the proper combination of various enterprises and utilization of products and/or by-products of one enterprise for other allied enterprises. Agriculture development includes not only crops but also

1. Status Development of labour
2. Status of Techniques
3. Increased percentage of National Income

The average yield of major commodities (Source: Centre for Monitoring Indian Economy 1999 Agriculture Statistics) is given in table 1. The table shows the broad based adoption of high yielding varieties, extensive use of fertilizers and improved status of agriculture and its performance is based on

1. Fertilizing land
2. Water Resources
3. Status of farmer
4. Techniques

5. Efficient man power
6. Grants and funds

**Table 1: Average Yield of Major Commodities**

Commodities	Haryana	Andhra Pradesh	Rajasthan	Orrisa	All India
All food Grains	2.70	1.76	0.94	1.10	1.55
Rice	2.66	2.49	1.06	1.25	1.86
Wheat	3.75	0.74	2.58	1.29	2.54
Potatoes	13.96	-	11.20	10.37	16.99
Maize	1.82	2.89	1.09	1.17	1.68
Mustard	1.13	-	0.84	0.16	0.87
Sunflower	1.64	0.63	-	-	0.60

(Source: Centre for Monitoring Indian Economy 1999 Agriculture Statistics)

The average annual growth of Agriculture and Allied Sector of Haryana was recorded as 3.9% during the 11<sup>th</sup> Five Year Plan, which was slightly higher than that achieved at All India level (3.7%). The growth rates recorded by the State and Indian Economy in Agriculture and Allied Sector during the 11<sup>th</sup> Five Year Plan are given in table 2. The growth in GDP of Agriculture and Allied sectors in Haryana and All Indian during 11<sup>th</sup> Five Year Plan is shown in table 2.

The growth rates have been improved during 2011-12. The encouraging growth of 8.6% in the Agriculture and Allied Sector is mainly due to the sharp rise in the production of wheat(12.9%), paddy (8.5%), cotton (50%), sugarcane (15.2%), maize (26.3%), barley (17.7%) and fruits (32.5%) during the year.

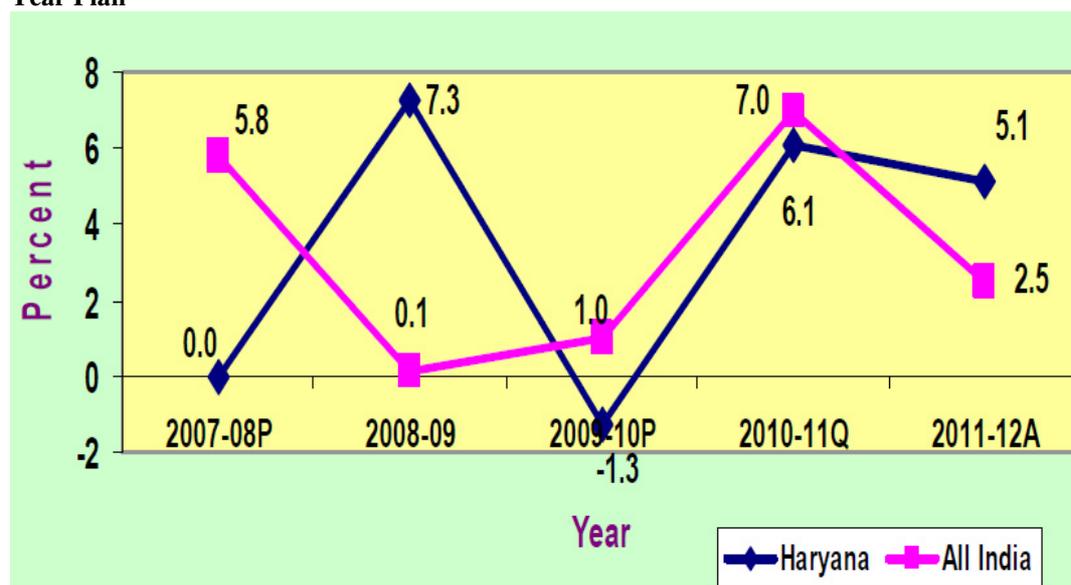
**Table 2: Growth of Agriculture and Allied Sector in 11<sup>th</sup> Five Year Plan**

Sectors	2007-08	2008-09	2009-10	2010-11	2011-12QE	Overall
<b>Haryana</b>						
Agriculture	-0.3	7.4	-1.7	5.6	8.6	3.9
Forestry	3.0	2.4	2.1	2.5	2.1	2.4
Fishing	11.9	13.3	15.5	6.6	12.8	12.0
Agriculture and Allied	-0.1	7.2	-1.4	5.4	8.3	3.9
<b>All India</b>						
Agriculture and Allied	5.8	0.1	0.8	7.9	3.6	3.6

Q.E. means Quick Estimates

(Source: Economic Survey of Haryana 2012-13)

**Figure 4: Growth in GDP of Agriculture and Allied sectors in Haryana and All Indian during 11<sup>th</sup> Five Year Plan**



(Source: Economic Survey of Haryana 2011-12).

**Conclusion and policy implications:**

Agriculture occupies an important place in the development of an economy and the improvement of

agriculture is necessary for a balanced growth of an economy. It can be said that agriculture has played vital role in development of Haryana. Science and technology has helped the state to touch the new heights. After the green revolution, Haryana has risen as the strong pillar of Agricultural Development. Agricultural Development has a lot of relevance in modern economics. Wheat, seed and crop diversification helped the agriculture sector. The development of agriculture provides necessary capital for the development of other sectors like industry, transport and foreign trade. In fact, a balanced development of agriculture and industry is the need of the day.

Three main factors that contribute to agricultural growth are increased use of agricultural inputs, technological change and technical efficiency. The structure of the Agricultural and Rural economy is changing. The rapid rate of growth in agriculture sector gives progressive outlook and further motivation for development. As a result, it helps to create proper atmosphere for general economic development of the economy. Thus, economic development depends on the rate at which agriculture grows. This growth will motivate to do potential research and draw policies for the development of Haryana. It may be noted that agricultural impacts work both ways in the sense that acceleration and deceleration of growth matters for the agricultural sector. The study of the growth of the Agriculture and Allied Sector is a critical factor in assessing the overall performance of the state economy. This needs a larger repertoire of crops and products, behavioral studies and newer sources of data for items thinly covered. In the faster moving economy timeliness both of data and emerging trends is important.

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