

AGRICULTURAL PROFILE OF HARYANA

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PREFACE

The Agricultural Economics Research Centre, University of Delhi prepared Agriculture Profile of Haryana at the instance of the Ministry of Agriculture, Government of India during 2012. It was initially prepared by Dr. D.S. Bhupal, Senior Fellow. The document provides an overview of important aspects of agriculture in the state. In view of its immense utility for all stake holders, the document is updated and revised by Mr. Narinder Singh, Technical Assistant. I hope it would be useful for researchers, students and planners. The contribution of all staff members during the course of preparation of this document is gratefully acknowledged.

March, 2015

(Usha Tuteja)
Director (Actg.)

Contents

Administrative Setup
Agriculture
Manufacturing
Service sector
Roads, aviation and infrastructure
Rural Electrification
Population
Workers
GSDP of Haryana
Land Use Pattern
Area, Production and Yield of important crops
Operational Holdings
Status of Irrigated Area
Status of Livestock
Consumption of Fertilizer
Consumption of Pesticides
Fixed Capital Formation
Marketing and storage
Credit
Land Ceiling in Haryana
Soil fertility
Seed
Conclusion

Table	Page No.
Table 1: Rural and Urban Population by Sex in Haryana, 2011	5
Table 2: Number and Percentage Distribution of Workers (Main + Marginal) by Broad Categories in Haryana, 2011	7
Table 3: Net State Domestic Product at Factor Cost at Current and Constant Prices (2004-05) in Haryana	9
Table 4: Gross State Domestic Product of Haryana (Rs. Crore at current Prices)	10
Table 5: Gross State Domestic Product of Haryana (Rs. Crore) at constant Prices (2004-05)	11
Table 6: Land use Pattern in Haryana, ('000 ha)	13
Table 7a: Area under Important Crops in Haryana ('000 Ha)	15-16
Table 7b: Production of Important Crops in Haryana ('000Tonnes)	17-18
Table 7c: Yield per hectare of Important Crops in Haryana	19-20
Table 8: Number and Area of Operational Holdings in Haryana, 2010-11	22
Table 9: Net Area Irrigated by source in Haryana (000 ha)	23
Table 10: Animal Husbandary and Dairying in Haryana, 2012-13	24
Table 11: Animal Driven Implements and Equipments in Haryana, Census 2007	25
Table 12: Fertilizer Consumption in Haryana (Tonnes)	26
Table 13: Consumption of Pesticides in Haryana (Technical Grade)	26
Table 14 : Estimates of Gross Fixed Capital Formation in Haryana at Current Prices	27
Table 15 : Estimates of Gross Fixed Capital Formation in Haryana at Constant Prices	28
Table 16: Number of Markets in Haryana	30
Table 17: Storage Capacity and its Utilization in Haryana	31
Table 18: Godowns and their Capacity in Haryana since 2005 to 2013-14	31
Table 19 : Ground Level Credit for Agriculture and Allied activities in Haryana	32
Table 20: Credit for Agriculture and Allied activities, Haryana (1-4-2011 to 31-3-2012)	32
Table 21a : Requirement and Availability of Certified Seeds during RABI In Haryana (Qtls.)	36
Table 21b : Requirement and Availability of Certified Seeds during Kharif In Haryana (Qtls.)	37

Figure	Page No.
Fig. 1: Map of Haryana	2
Fig. 2: District-wise Rural Population, Haryana, 2011	6
Fig. 3: District-wise Urban Population, Haryana, 2011	6
Fig. 4: Male, Female distribution of Cultivators +Agri.Labourers in Haryana, 2001	7
Fig. 5: Male, Female distribution of Cultivators +Agri.Labourers in Haryana, 2011	7
Fig. 6: Percentage Distribution of Total Workers (Main + Marginal), by broad Industrial Categories in Haryana, 2011	7
Fig. 7: Percentage Distribution of Male Workers (Main + Marginal), by broad Industrial Categories in Haryana, 2011	8
Fig. 8: Percentage Distribution of Female Workers (Main + Marginal), by broad Industrial Categories in Haryana, 2011	8
Fig. 9: Index of Gross State Domestic Product (GSDP) at Factor cost at Current and Constant (2004-05) Prices in Haryana	9
Fig.10: Gross State Domestic Product of Haryana (Rs. Crore at current Prices)	12
Fig. 11: Gross State Domestic Product of Haryana (Rs. Crore) at Constant 2004-05 Prices	12
Fig. 12: Cropped Area in Haryana	21
Fig. 13: Agricultural Production in Haryana	21
Fig. 14: Cropwise Yield in Haryana	21
Fig. 15: Number of Holdings by Ownership in Haryana, 2010-11	22
Fig. 16: Area of Operational Holdings in Haryana, 2010-11	22
Fig. 17: Size-wise Number of Operational Holdings in Haryana, 2010-11	22
Fig. 18: Size-wise Area of Holdings in Haryana, 2010-11	22
Fig. 19: Avg. Size and No.of Operational Holdings in Haryana, 2010-11	23
Fig. 20: Estimates of Gross Fixed Capital Formation at Current Prices in Haryana	29
Fig. 21: Estimates of Gross Fixed Capital Formation at Constant Prices in Haryana	29
Fig. 22 to Fig. 31: District-wise Level of Soil Fertility in Haryana	33-34

AGRICULTURAL PROFILE OF HARYANA

Haryana is primarily an agricultural state. About 65% of population resides in rural area and engaged in agriculture which is the leading occupation for the residents of the state. Haryana contributed heavily to the Green Revolution that made India self-sufficient in food production in the 1960s. Wheat and rice are the major foodgrain crops in Haryana. Haryana produced 39.76 lakh mts of rice during Kharif 2012 which was highest ever achieved in the state despite of deficient rains. Haryana is now one of important contributors to the country's production of food grains and milk. Haryana is self-sufficient in food production and the second largest contributor to India's central pool of food grains.

Haryana is an Indian state in north India with its capital at Panchkula. Earlier, it was a part of state of Punjab. The state came into existence on 1 November 1966 as a newly created 17th state of the Indian Union carved out of Punjab. It is bordered by Punjab and Himachal Pradesh to the north and by Rajasthan to the west and south. The river Yamuna defines its eastern border with Uttarakhand. Haryana is also surrounded by Delhi, the capital of the country on three sides, forming the northern, western and southern borders of Delhi. Consequently, a large area of south Haryana falls in the National Capital Region for the purpose of planning for development. Fig. 1 indicates the location of the state of Haryana in India.

Haryana is a landlocked state in northern India. It is located between 27°39' to 30°35' N latitude and between 74°28' and 77°36' E longitude. The altitude of Haryana varies between 700 to 3600 ft (200 metres to 1200 metres) above sea level. Haryana has four main geographical features.

- The Yamuna-Ghaggar plain forming the largest part of the state
- The Shivalik Hills to the northeast
- Semi-desert sandy plain to the southwest
- Aravalli Range in the south

Administrative Setup

At present, Haryana has 4 administrative divisions constituting 21 districts –

- (1) Ambala Division with 4 districts viz. Ambala, Kurukshetra, Panch Kula and Yamuna Nagar;
- (2) Gurgaon Division with 6 districts viz. Faridabad, Palwal, Gurgaon, Mahendragarh, Mewat and Rewari;

- (3) Hissar Division with 5 districts viz. Bhiwani, Fatehabad, Hissar, Kaithal and Sirsa;
- (4) Rohtak Division with 6 districts viz. Jhajjar, Karnal, Panipat, Rohtak, Sonipat, and Jind.

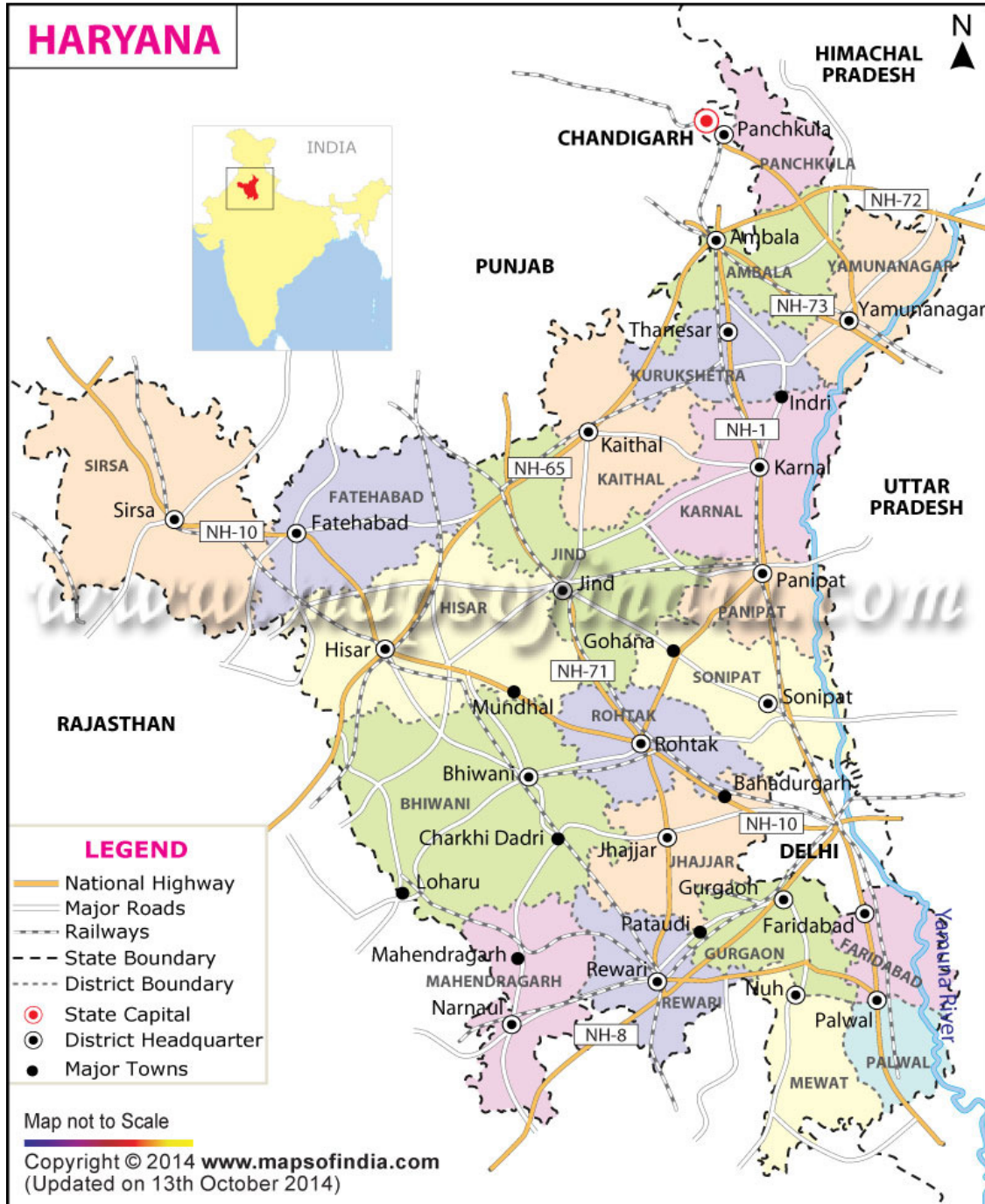


Fig.1

Haryana is also one of the progressive states of India and had the third highest per capita income in the country at ₹119,158 in the year 2012–13 and ₹132,089 in the year 2013–14. Haryana is one of the agriculturally developed regions in South Asia and its agriculture and manufacturing industry has experienced sustained growth since the 1970s. The economy of Haryana relies on tertiary followed by manufacturing and agriculture sectors.

Agriculture

Haryana is primarily an agricultural state. Agriculture is the leading occupation of the workforce of the state. The submersible pumps and an extensive canal system are the major sources of Irrigation. Haryana contributed significantly to the Green Revolution that made India self-sufficient in food production in the 1960s. Wheat and rice are the major crops. Haryana is now a leading contributor to the country's production of food grains and milk. Haryana produced 39.76 lakh mts. of rice during kharif 2012 which was *highest* ever achieved in the state despite deficient rains. Haryana is self-sufficient in food production and the *second largest* contributor to India's central pool of food grains. Haryana contributed significantly to foodgrains production of the country due to availability of irrigation and adaption of improved technology.

Manufacturing

Haryana is India's largest manufacturer of passenger cars, two-wheelers, and tractors. The state has emerged as the largest recipient of investment per capita in India. The district of Gurgaon has emerged as a major hub for the information technology and automobile industries. Gurgaon is home to Maruti Suzuki, India's largest automobile manufacturer, and Hero MotoCorp, the world's largest manufacturer of two-wheelers. Faridabad, Panchkula, Dharuhera, Bawal, Sonipat, Panipat, Yamuna Nagar and Rewari are also industrial hubs, with Panipat Refinery being the second largest refinery in South Asia. There are also long established steel, plywood, paper and textile industries in the state.

Service sector

Faridabad and Gurgaon, the two leading financial and industrial districts of Haryana, emerged as an important destination for information technology industry in recent years. A large number of international companies such as Samsung, Damco Solutions, Abacus Softech, Nokia Networks, Mitsubishi Electric, IBM, Huawei, General Electric, Tata Consultancy Services and Amdocs have their branch offices and contact centres in Faridabad and Gurgaon.

Roads, Aviation and Infrastructure

Haryana and the Delhi governments constructed DF Skyway (4.5 kms) which connects Delhi and Faridabad. It has been built as per international standards. It is first of its kind in North India. Delhi-Agra Expressway (NH-2) passing through Faridabad is under construction. There are 29 national highways with total length of 1,461 kms and many state highways with total length of 2,494 kms. The remote areas of the state are linked with metaled roads. Its modern bus fleet of 3,864 buses

covers a long distance per day. It was the first state in the country to introduce luxury video coaches. The Grand Trunk Road, commonly abbreviated as GT road, is one of oldest and longest roads passing through the districts of Sonapat, Panipat, Karnal, Kurukshetra and Ambala in north Haryana where it enters Delhi and subsequently, the industrial town of Faridabad. The state government has proposed to construct Express highways and freeways for speedier vehicular traffic. The 135.6-kms long Kundli-Manesar-Palwal Expressway(KMP) will provide a high-speed link to northern Haryana with its southern districts such as Sonipat, Gurgaon, Jhajjar and Faridabad. International and domestic airports, diplomatic and commercial complexes are located in close proximity to the state.

Rural Electrification

Haryana state has always given high priority to the expansion of electricity as infrastructure, since it is one of the most important inputs for the development of any state. Haryana was the first state in the country to achieve 100% rural electrification in 1970, first in the country to link all villages with all-weather roads and first in the country to provide safe drinking water facilities throughout the state. Haryana is well connected with the railway network. There are proposals to revive the Hisar Airport and Karnal Airport, and a new Greenfield Cargo Airport to serve the city of Rohtak.

Some indicators: As per Census 2011, top five districts having largest area, high density, high population growth, higher sex ratio and higher literacy are as under:

Largest District (km²)	Higher Density	Higher Population Growth	Higher Sex Ratio	Higher Literacy Rate
<u>Bhiwani</u> 4778	<u>Faridabad</u> 2442	<u>Gurgaon</u> 73.96%	<u>Mewat</u> 907	<u>Gurgaon</u> 84.70%
<u>Sirsa</u> 4277	<u>Gurgaon</u> 1204	<u>Mewat</u> 37.93%	<u>Fatehabad</u> 902	<u>Panchkula</u> 81.88%
<u>Hisar</u> 3983	<u>Panipat</u> 951	<u>Faridabad</u> 32.54%	<u>Rewari</u> 898	<u>Ambala</u> 81.75%
<u>Jind</u> 2702	<u>Palwal</u> 767	<u>Palwal</u> 25.76%	<u>Sirsa</u> 897	<u>Faridabad</u> 81.70%
<u>Fatehabad</u> 2538	<u>Mewat</u> 723	<u>Panipat</u> 24.60%	<u>Mahendragarh</u> 895	<u>Rewari</u> 80.99%

Population

About 65 per cent of Haryana's population lives in villages. Rural population in the state has come down by 5.87 per cent since 2001. Faridabad with less than 21 per cent as rural population is the most urbanized district whereas Mewat with more than 88 per cent of rural population is least urbanized. Total population in Haryana has increased by 19.9 per cent in 2011 as compared to 2001 (male population by 18.8% and female population by 21.1 per cent). It has significant implications. For example, increase in total population by about 2% annually is higher as compared to population growth in the country. Secondly, the gender ratio which was low in Haryana seems to be improving (Table 1).

Table 1: Rural and Urban Population by Sex in Haryana, 2011

District	Population						Rural Population as % of total
	Rural			Urban			
	Total	Males	Females	Total	Males	Females	
Ambala	632243	334564	297679	504541	269480	235061	55.62
Panchkula	252231	136008	116223	306659	162911	143748	45.13
Yamunanagar	741370	394010	347360	472792	252791	220001	61.06
Kurukshetra	685296	360790	324506	278935	149580	129355	71.07
Kaithal	837171	445614	391557	235690	124981	110709	78.03
Karnal	1050293	557305	492988	456030	241535	214495	69.73
Panipat	649866	349674	300192	552945	296650	256295	54.03
Sonipat	1028393	557103	471290	451687	241845	209842	69.48
Rohtak	613864	330788	283076	444819	235920	208899	57.98
Jhajjar	713933	383887	330046	242974	130416	112558	74.61
Faridabad	369861	197827	172034	1429093	763705	665388	20.56
Palwal	804830	428516	376314	235663	125188	110475	77.35
Gurgaon	472085	251520	220565	1042000	565754	476246	31.18
Mewat (P)	965389	506297	459092	124017	65183	58834	88.62
Rewari	664718	348631	316087	231411	123623	107788	74.18
Mahendragarh	788705	416217	372488	132975	70336	62639	85.57
Bhiwani	1306531	692944	613587	322578	171672	150906	80.2
Jind	1028119	550513	477606	303923	161741	142182	77.18
Hisar	1189789	634149	555640	553026	297386	255640	68.27
Fatehabad	762182	400587	361595	179340	94247	85093	80.96
Sirsa	974624	514092	460532	320490	169150	151340	75.25
Total 2011	16531493	8791036	7740457	8821588	4714094	4107494	65.21
2001	15029260	8052988	6976272	6115304	3310965	2804339	71.08
% change over 2001	10.00	9.16	10.95	44.25	42.38	46.47	- 5.87

Source : Director of Census Operations, Haryana

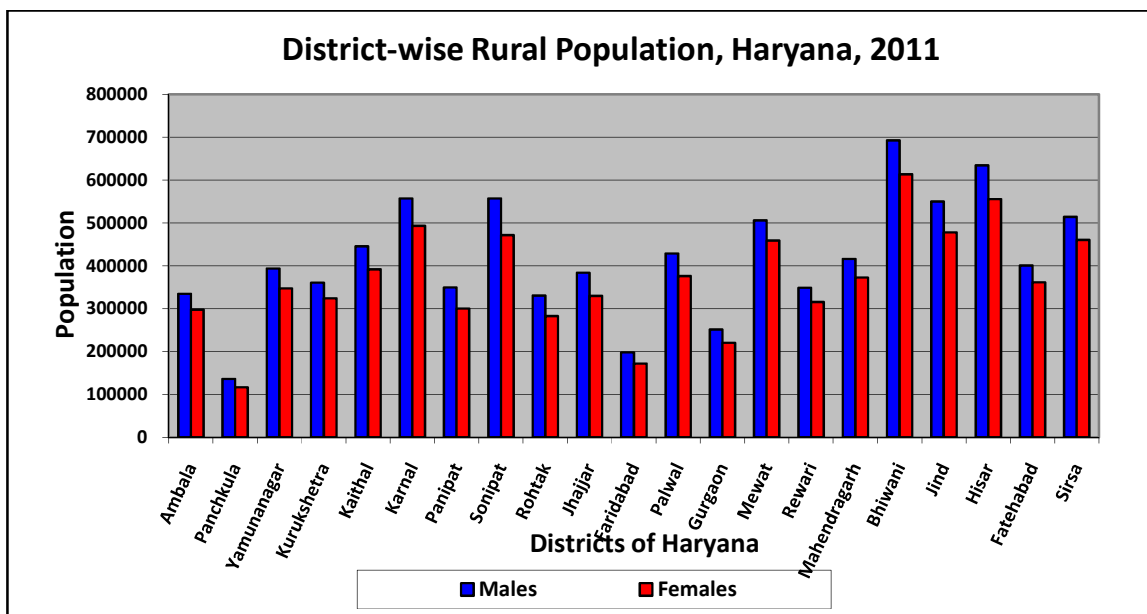


Fig.2

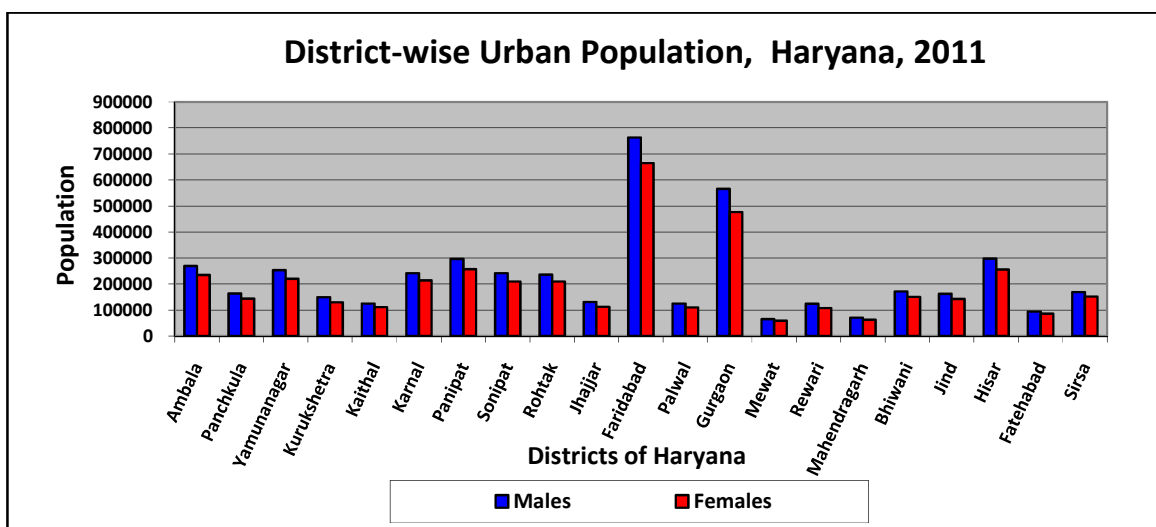


Fig.3

Workers

We have presented data regarding cultivators, agricultural labourers, workers in household industry and other workers based on 2011 Census in Table 2. Surprisingly, female cultivators were less in number (691679) than their male counterparts (1789122). In percentage term, female cultivators were 32.78% to total female workers and male cultivators were 26.28% to total male workers. The share of male workers in other workers was 15% more than share of female workers. Overall about 29% female workers were cultivators+agricultural labourers as per the Census 2011 (Fig.5), which was about 40% as per Census 2001 (Fig.4). The decline in these numbers are significant due to shift of female workers towards other work (40.55%) as per Census 2011. It is worth noticing that proportion of male and female

workers in total workers changed between 2001 and 2011. The share of female workers is declined by 11 per cent during this period.

Table 2: Number and Percentage Distribution of Workers (Main + Marginal) by Broad Categories in Haryana, 2011

Category	Number			Percentage to Total		
	Person	Male	Female	Person	Male	Female
Cultivators	2480801	1789122	691679	27.82	26.28	32.78
Agricultural Labourers	1528133	1041241	486892	17.14	15.30	23.08
Workers in Household Industry	262280	186533	75747	2.94	2.74	3.59
Other Workers	4645294	3789740	855554	52.10	55.68	40.55
Total Workers 2011	8916508	6806636	2109872	100.00	100.00	100.00
Total Workers 2001	8377466	5715526	2661940			

Source : Director of Census Operations, Haryana

Note : The main worker is one who has worked for 183 days or more in a year in one or more than one economic activity.

A person who has worked for less than 183 days in a year is considered marginal worker.

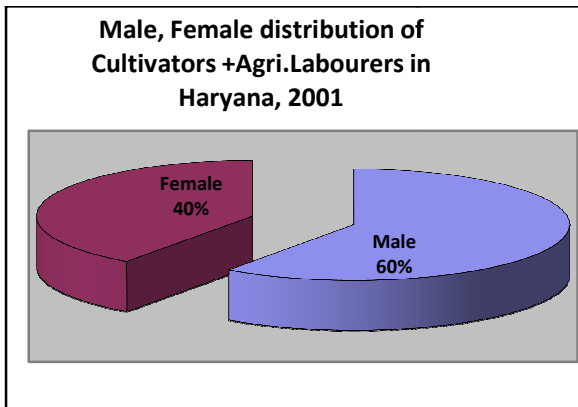


Fig.4

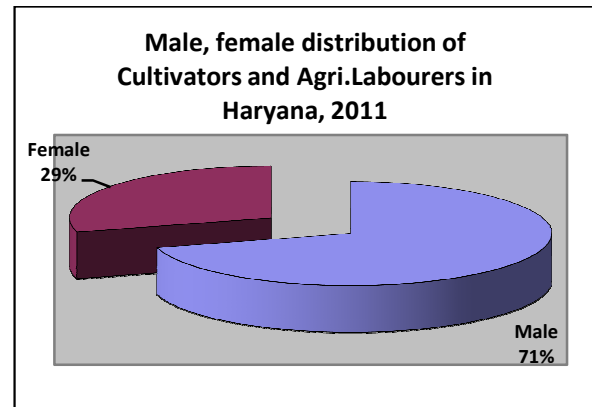


Fig.5

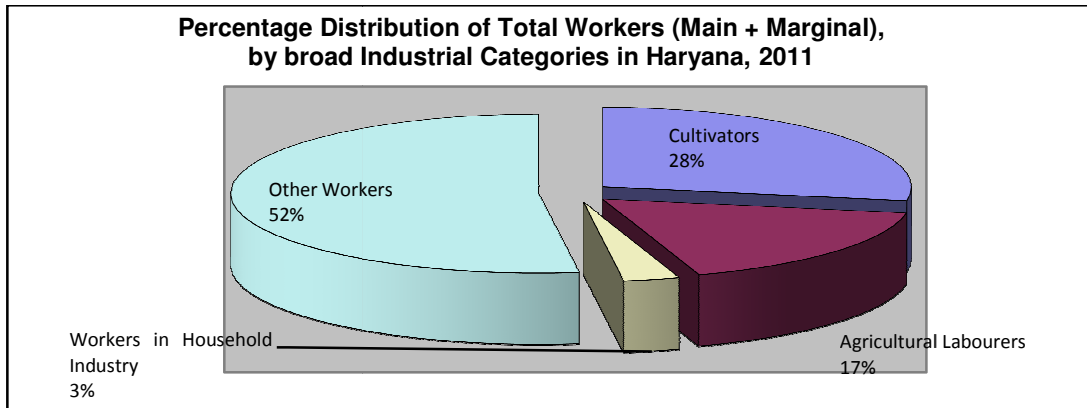


Fig.6

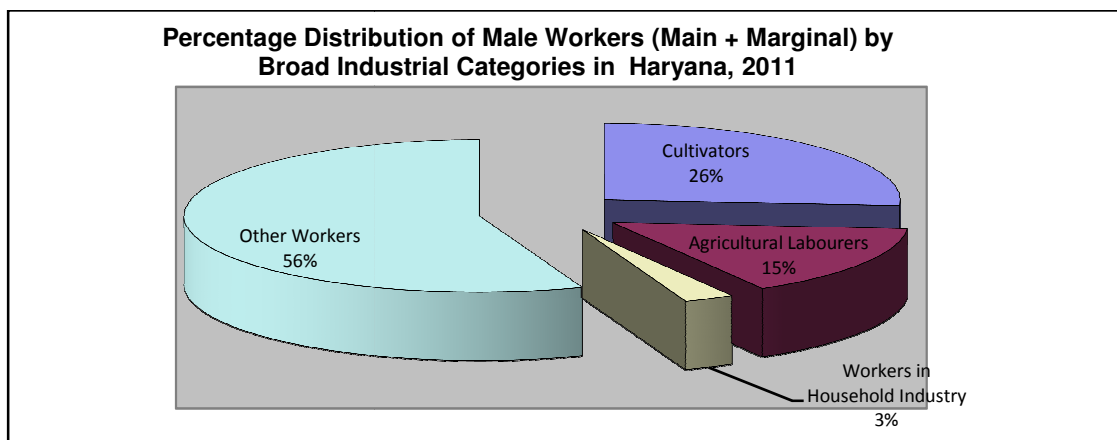


Fig.7

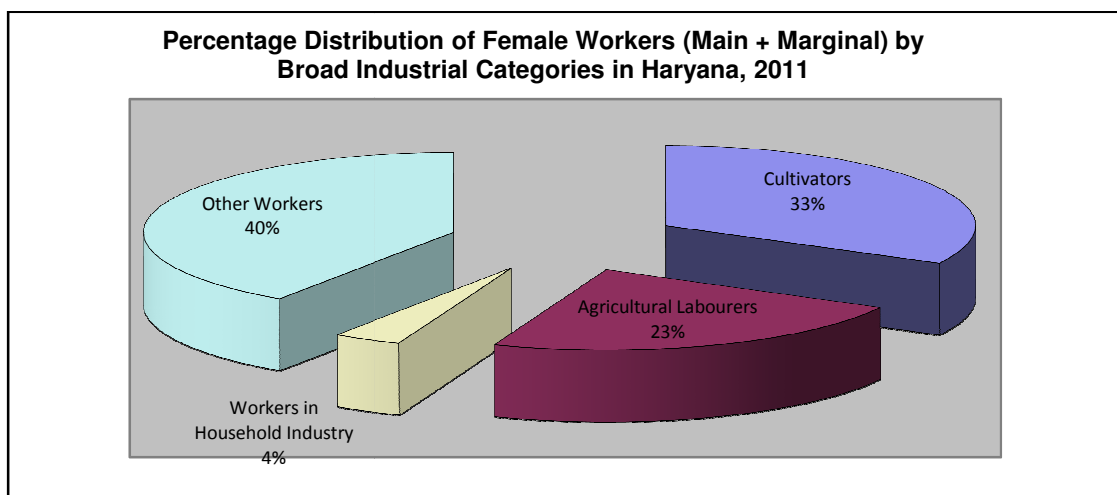


Fig.8

GSDP of Haryana

We have analysed data for the years i.e. 2004-05 to 2013-14 and worked out compound annual growth rates (CAGR) of the gross state domestic product and per capita income, both at current prices and at 2004-05 prices. For the state, the GSDP has increased at 17.4 per cent and NSDP at 17.7 per cent annually whereas in terms of per capita, it has increased at lower rate 15.4% and 15.7% respectively due to the impact of increase in population. But, after adjusting for inflation or at the 2004-05 prices, the rate of enhancement in SDP (Gross and Net) and per capita income comes down to 8.6% and 6.7% respectively (Table 3)

Haryana is geographically a small state accounting for only 1.3 per cent of the total area of the country, the contribution of the state in the National GDP at constant (2004-05) prices has been recorded as 3.4 percent as per the Quick Estimates (QE) of 2012-13. (ECONOMIC SURVEY OF HARYANA, 2013-2014)

Table 3: Gross and Net State Domestic Product at Factor Cost at Current and Constant Prices (2004-05) in Haryana

Rs. Crore

Item	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	CAGR
1. At Current prices											
GSDP	95795	108885	128732	151596	182522	223600	260621	298786	339451	383911	0.174
NSDP	86222	97903	116104	136584	164636	203855	237163	273192	310990	350167	0.177
GSDP per capita	42187	47055	54619	63173	74728	89984	103135	116322	130063	144817	0.154
NSDP per capita	37972	42309	49261	56917	67405	82037	93852	106358	119158	132089	0.157
2. At 2004-05 Prices											
GSDP	95795	104608	116344	126171	136478	152474	163770	176918	186738	198858	0.086
NSDP	86222	94011	104700	112896	121588	136780	146053	158524	167389	178458	0.086
GSDP per capita	42187	45206	49363	52578	55876	61360	64808	68877	71550	75013	0.068
NSDP per capita	37972	40627	44423	47046	49780	55044	57797	61716	64136	67317	0.067

Source : Ministry of Statistics and Programme Implementation, GOI

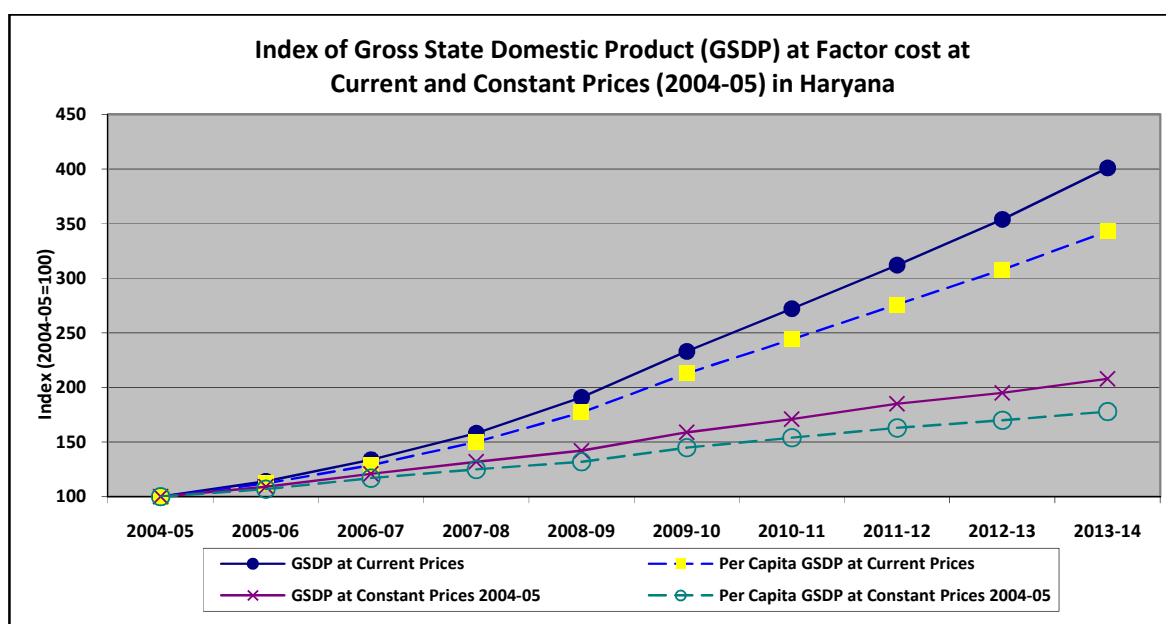


Fig.9

The statement that Haryana is a fast growing economy is supported by the sectoral GSDP at current prices in Table 4. During the past 5 year, income from agriculture and allied activities grew at 12.7 per cent per year, secondary sector by 13.1 per cent, tertiary sector by about 19 per cent and the economy as a whole by around 16 per cent per annum. In fact, growth of mining and quarrying declined by about 25% due to environmental issues and judicial interventions, almost all other sectors of the economy grew at a commendable rate.

**Table 4: Gross State Domestic Product of Haryana
(Rs. Crore at current Prices)**

Sector	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	CAGR
1.Agriculture	40137	44446	51655	59168	62599	72297	0.124
2.Forestry & logging	2186	2688	3048	3180	3757	4227	0.132
3.Fishing	309	357	676	859	1003	1045	0.309
Agri. & Allied	42632	47490	55380	63206	67360	77569	0.127
4.Mining & quarrying	399	213	88	100	86	86	-0.254
Sub-Total : Primary	43031	47703	55468	63306	67446	77655	0.125
5.Manufacturing	33480	42753	48787	52128	57019	60119	0.116
5.1 Registered	23781	32044	36649	38960	42270	44576	0.122
5.2 Unregistered	9700	10709	12138	13168	14749	15543	0.102
6.Construction	16510	20401	21981	27255	31501	35685	0.166
7.Electricity,gas and Water supply	3181	3346	4058	2750	4534	5166	0.088
Sub-Total : Secondary	53171	66713	74914	82233	93140	101056	0.131
8.Transport, storage & Communication	15152	18850	21434	24896	29523	34606	0.174
8.1 Railways	2240	2666	2257	2807	3199	3660	0.096
8.2 Transport by other means	11152	14109	17174	19782	23610	27779	0.195
8.3 Storage	147	123	161	200	258	302	0.188
8.4 Communication	1612	1952	1841	2108	2456	2866	0.112
9.Trade,hotels and restaurants	33177	41674	52579	62435	70798	77888	0.188
10.Banking & Insurance	5776	6627	8952	10953	12657	15432	0.223
11.Real estate,ownership of dwellings and business services	17344	21777	23764	28616	34270	40476	0.180
12.Public administration	4506	5625	6503	6886	7890	8844	0.135
13.Other services	10364	14843	17095	19560	23813	28041	0.205
Sub-Total : Tertiary	86319	109397	130327	153347	178951	205286	0.186
14. Gross State domestic product	182522	223600	260621	298786	339451	383911	0.157

Source : Ministry of Statistics and Programme Implementation, GOI

The growth story remains almost the same at constant prices as well as at current prices. The growth in mining and quarrying turns out negative in both cases. The growth during this period was 2.9, 5.8 and 10.2 respectively for primary, secondary and tertiary sectors. However, the overall growth for the economy turned out as 7.6 per cent per annum due to appreciable contribution by the tertiary sector. During the period of years from 2008-09 to 2013-14, the state economy registered a growth rate of 7.6 per cent per annum in spite of the low growth posted in agriculture & allied activities (3.1 percent). The service sector with a robust growth rate of 10.2 per cent

per annum recorded during this period acted as the main catalyst for sustaining the economic growth of the state at almost 8.0 percent per annum between 2008-09 and 2013-14.

**Table 5: Gross State Domestic Product of Haryana (Rs. Crore)
at constant Prices (2004-05)**

Sector	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	CAGR
1.Agriculture	25212	24771	26092	28200	27776	28683	0.031
2.Forestry & logging	1154	1179	1208	1234	1271	1313	0.026
3.Fishing	206	238	254	286	301	285	0.073
Agri. & Allied	26572	26188	27553	29721	29348	30281	0.031
4.Mining & quarrying	328	166	68	78	67	67	-0.261
Sub-Total : Primary	26900	26353	27622	29799	29415	30348	0.029
5.Manufacturing	26742	29577	31956	32793	34206	35070	0.053
5.1 Registered	18624	20953	22770	23465	24341	24955	0.057
5.2 Unregistered	8117	8624	9185	9327	9866	10115	0.044
6.Construction	11918	13478	13621	14889	15693	16592	0.065
7.Electricity,gas and Water supply	2213	2683	2830	3084	3123	3259	0.073
Sub-Total : Secondary	40872	45738	48406	50765	53023	54921	0.058
8.Transport, storage & communication	12278	13492	14155	15575	16790	18482	0.083
8.1 Railways	1942	2063	1881	2281	2316	2538	0.055
8.2 Transport by other means	8281	9118	10019	10779	11748	12927	0.091
8.3 Storage	72	79	76	78	86	90	0.041
8.4 Communication	1984	2232	2179	2437	2641	2927	0.076
9.Trade,hotels and restaurants	26182	31626	36340	39577	41713	43365	0.103
10.Banking & Insurance	6146	7071	8869	10444	11828	13803	0.179
11.Real estate,ownership of dwellings and business services	12799	14511	14093	15818	17546	19766	0.085
12. Public administration	3482	3859	4064	4027	4253	4542	0.047
13. Other services	7818	9824	10219	10912	12171	13632	0.105
Sub-Total : Tertiary	68706	80383	87742	96354	104300	113589	0.102
14. Gross State domestic product	136478	152474	163770	176918	186738	198858	0.076

CAGR – Compound Annual Growth Rate

Source : Ministry of Statistics and Programme Implementation, GOI

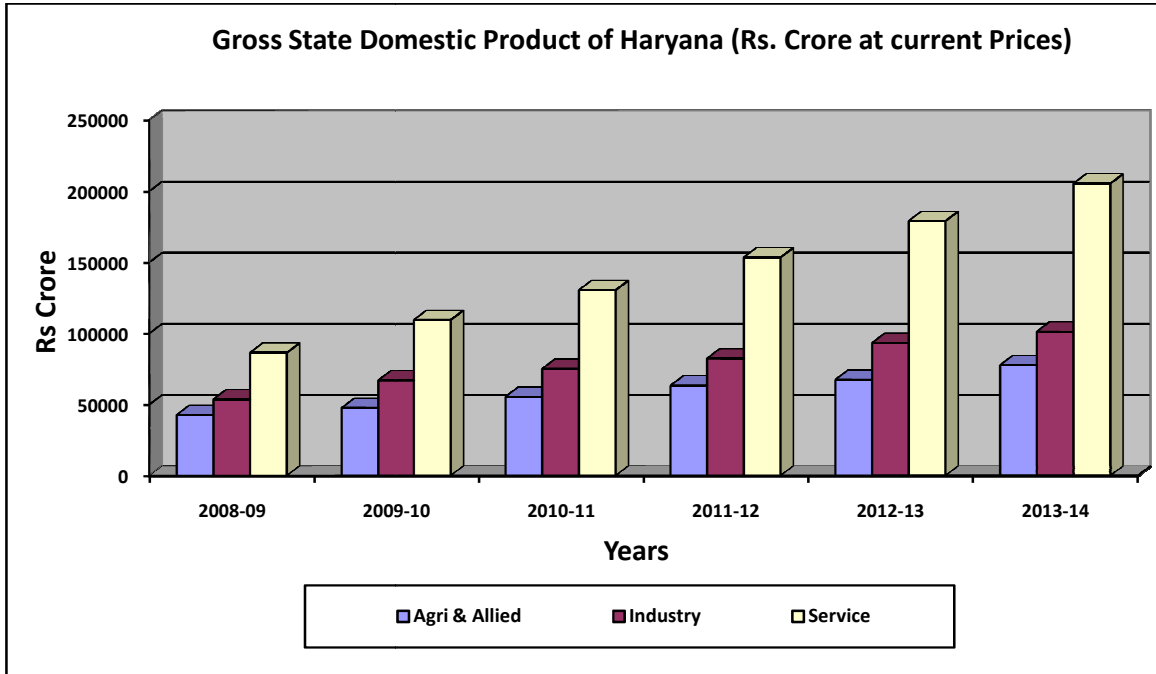


Fig.10

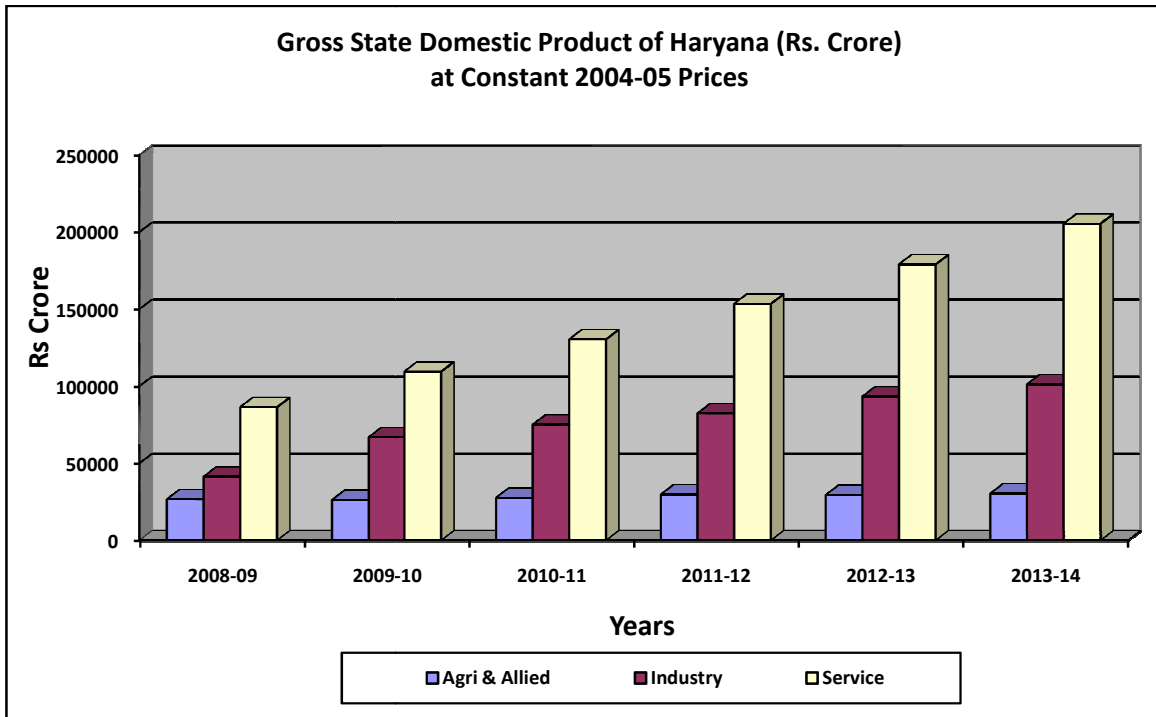


Fig.11

Land Use Pattern

The land use pattern depicted in Table 6 indicates that rate of increase is the highest in case of area under non-agricultural uses. This is due to the changing structure of economy, which is increasingly depending on the contribution from industry and service sectors and expansion of related infrastructural activities. Further, an expansion of area under both urban and rural settlements has added to this increase. Thus, area under non-agricultural uses is increasing at the expense of wastelands and agricultural land.

The decline in land under, pastures and other grazing lands can be explained in terms of increase in net area sown (NAS) and use of land for non-agricultural purposes pressure. In addition, Illegal encroachments due to expansion of cultivation on pasture lands are largely responsible for this decline. Forest area has also declined. Table 6 indicates that cropping intensity has increased continuously from 134 per cent in 1966-67 to 185 per cent in 2011-12.

Table 6: Land use Pattern in Haryana

(‘000ha)

Year	Total area According to village papers	Forests	Land not available for Cultivation			Other uncultivated land excluding Fallow Land		
			Land put to non-agricultural uses	Barren and Unculturable land	Total (4+5)	Permanent pastures and other grazing land	Land under misc. tree crops and groves not included in net area sown	Culturable but barren land
1	2	3	4	5	6	7	8	9
1966-67	4,399	91	257	232	489	46	4	87
1970-71	4,802	99	309	181	490	54	3	41
1975-76	4,404	104	374	99	473	44	@	34
1980-81	4,405	132	369	65	434	30	@	30
1985-86	4,391	166	236	156	392	28	1	23
1990-91	4,378	169	320	97	417	23	4	21
1995-96	4,398	110	400	94	494	24	4	23
2000-01	4,402	115	368	102	470	34	7	18
2005-06	4,372	44	424	95	519	25	12	31
2010-11	4,370	39	522	102	624	27	11	27
2011-12(P)	4,371	39	500	106	606	28	9	27

.....contd. Table 6

Year	Fallow Land		Total 10+11	Net area sown	Culturable area 7+8+9+12+13	Area Sown more than once	Total Cropped area 13+15	Cropping Intensity
	other than current fallows	Current Fallows						
1	10	11	12	13	14	15	16	17
1966-67	—	259	259	3,423	3,819	1,176	4,599	1.34
1970-71	—	150	150	3,565	3,813	1,392	4,957	1.39
1975-76	—	125	125	3,624	3,827	1,827	5,451	1.50
1980-81	—	177	177	3,602	3,839	1,860	5,462	1.52
1985-86	—	168	168	3,613	3,833	1,988	5,601	1.55
1990-91	@	169	169	3,575	3,792	2,344	5,919	1.66
1995-96	@	156	156	3,586	3,793	2,388	5,974	1.67
2000-01	@	232	232	3,526	3,817	2,589	6,115	1.73
2005-06	6	169	175	3,566	3,809	2,943	6,509	1.83
2010-11	3	122	125	3,518	3,681	2,987	6,505	1.85
2011-12(P)	21	128	149	3,513	3,699	2,976	6,489	1.85

Source : Director of Land Records, Haryana.

Area, Production and Yield of important crops

Area

The Plan wise annual compound growth rates of area under important crops in Table 7a show that there has been uninterrupted expansion of area under paddy, which is almost twice as compared with 1991-92. But the rate of increase in area under wheat is relatively low. During the period of past two decades, about 1/3rd area has been added for growing wheat and there is marginal increase in area under bajra till 2010-11 but declined afterwards. Other crops such as jowar, maize, barley, gram and massar also share perceptible decrease in acreage between 1991-92 and 2012-13. For example, area under jowar, a major fodder crop, is about 50% less than it was two decades earlier. Pulse crop, gram is almost at the verge of disappearing. The area under gram has gone down by about 85%. The same is true for barley, massar and area under other pulses. Area under rape and mustard seed, total oilseeds and potato has also declined by 10% to 22% in this period. (Table 7a).

Three points needed to be emphasized for policy purpose— one, area under paddy needs to be brought down immediately due to shortage of irrigation water and soil fertility under threat; two, livestock, particularly milch animals being integral part of rural livelihood, fodder crops like jowar need to be encouraged; three, to meet the increasing demand of fruit and vegetables, area needs to be shifted towards these crops which are employment, income and environment friendly too.

Table 7a: Area under Important Crops in Haryana

('000 ha)

Year	Total									
	Rice	Jowar	Bajra	Maize	Wheat	Barley	Cereals	Gram	Moong	Massar
1	2	3	4	5	6	7	8	9	10	11
1991-92	637.0	102.0	556.6	28.9	1805.8	56.0	3187.5	306.7	6.2	12.1
1992-93	707.4	118.1	636.4	31.5	1963.4	53.0	3510.0	387.9	5.0	10.8
1993-94	755.0	90.2	508.3	29.9	1993.6	38.5	3415.5	405.3	6.1	10.6
1994-95	796.1	110.0	569.0	26.9	1985.3	49.5	3537.5	399.7	6.8	9.7
1995-96	830.0	126.1	575.2	26.0	1972.1	40.6	3570.7	376.7	7.0	10.4
1996-97	830.5	128.7	570.6	25.7	2017.0	33.9	3607.7	345.1	11.7	9.3
1997-98	913.7	130.9	584.4	26.1	2057.0	42.2	3754.6	353.9	16.5	8.6
1998-99	1086.0	130.0	613.0	20.0	2188.0	36.0	4073.0	357.0	21.0	11.0
1999-00	1083.1	111.8	586.7	20.1	2316.5	34.7	4153.0	100.4	9.9	8.7
2000-01	1054.3	109.4	608.3	15.4	2354.8	44.1	4186.5	124.5	5.3	6.5
2001-02	1027.5	103.8	585.5	17.9	2299.9	29.7	4064.3	142.5	13.6	9.3
2002-03	905.7	113.1	513.7	15.9	2267.1	30.3	3845.8	54.7	18.3	6.0
2003-04	1015.2	100.9	624.5	16.6	2315.4	27.1	4099.7	122.8	25.2	6.3
2004-05	1024.2	96.7	565.3	15.8	2316.7	22.4	4041.3	107.9	16.6	5.9
2005-06	1046.6	89.2	631.7	17.5	2302.7	28.2	4116.1	129.8	17.9	5.2
2006-07	1042.0	89.1	619.0	13.4	2377.1	37.7	4178.3	107.7	21.4	4.5
2007-08	1072.5	90.7	628.0	13.8	2400.7	39.5	4305.2	107.3	21.8	3.4
2008-09	1211.2	86.6	612.9	11.8	2461.4	53.0	4436.9	123.6	14.5	4.9
2009-10	1206.4	77.7	583.8	12.2	2487.7	42.1	4410.0	84.1	14.9	4.7
2010-11	1243.3	70.8	659.6	9.6	2504.0	37.3	4524.6	111.5	26.0	3.7
2011-12*	1234.1	64.7	576.2	11.0	2531.3	41.2	4458.5	78.9	16.8	3.8
2012-13*	1215.0	56.0	411.0	9.0	2497.0	48.0	4236.0	47.0	9.0	3.0
CAGR8 %	5.45	4.55	-0.19	-3.56	1.62	-8.37	2.04	1.40	13.05	-4.24
CAGR9 %	4.35	-4.92	0.59	-9.22	3.25	-1.60	2.73	-22.29	-9.27	-3.02
CAGR10 %	1.48	-4.25	2.31	-3.40	0.61	2.27	0.94	3.08	5.23	-11.12
CAGR11 %	3.74	-6.76	-0.74	-5.67	1.30	0.12	1.34	-5.08	-1.85	-1.79

Source : Director of Land Records, Haryana.

Before working out production estimates on the basis of area and yield, figures of area were rounded off to the nearest thousand hectare.

* Figures are provisional

CAGR8: Compund Annual Growth Rate during 8th Five Year Plan

CAGR9: Compund Annual Growth Rate during 9th Five Year Plan

CAGR10: Compund Annual Growth Rate during 10th Five Year Plan

CAGR11: Compund Annual Growth Rate during 11th Five Year Plan

.....contd. Table 7a

(Area in 000 Ha.)

Year	Other Pulses	Total Pulses	Total Foodgrains	Rape Seed & Mustard	Total Oilseeds	Cotton Lint	Sugarcane (Gur)	Potatoes
1	12	13	14	15	16	17	18	19
1991-92	61.1	389.1	3576.6	637.0	701.5	505.8	161.9	13.0
1992-93	55.2	461.5	3971.5	562.3	589.4	532.7	138.4	13.1
1993-94	53.1	477.8	3803.3	576.0	595.3	563.1	111.8	11.3
1994-95	56.1	474.4	4011.9	579.1	618.7	556.5	118.8	11.7
1995-96	53.4	449.8	4020.5	574.6	611.0	651.8	143.7	11.8
1996-97	49.8	418.1	4025.8	612.7	672.5	652.6	161.9	13.2
1997-98	49.4	432.5	4187.1	556.0	616.4	631.7	141.4	7.4
1998-99	18.0	409.0	4482.0	498.0	526.0	583.0	128.0	14.0
1999-00	13.4	136.6	4289.6	449.8	462.6	543.7	136.7	12.7
2000-01	19.2	157.0	4343.5	408.8	414.0	555.4	143.0	9.3
2001-02	21.2	188.6	4252.9	536.4	544.5	629.4	161.2	9.6
2002-03	49.4	131.9	3977.7	607.0	621.2	518.3	187.0	10.3
2003-04	41.6	198.3	4298.0	619.2	632.7	526.0	160.3	10.5
2004-05	44.2	176.2	4217.5	699.8	714.6	621.2	133.0	10.8
2005-06	39.9	195.3	4311.4	707.8	735.8	583.8	129.2	12.6
2006-07	32.5	169.3	4347.6	598.1	616.2	527.7	140.6	12.8
2007-08	36.0	172.0	4477.2	496.5	511.3	482.5	140.4	9.9
2008-09	38.5	184.1	4621.0	514.0	527.6	456.1	90.5	11.9
2009-10	24.9	131.6	4541.6	511.1	523.0	505.1	79.2	12.3
2010-11	34.4	175.6	4700.2	509.7	521.0	493.3	84.5	12.4
2011-12*	23.5	123.0	4581.5	535.9	545.8	601.8	94.8	12.1
2012-13*	18.0	77.0	4313.0	-	-	-	-	-
CAGR8 %	-3.00	0.79	1.97	-0.35	-0.18	5.48	0.50	-0.58
CAGR9 %	-19.06	-20.70	0.98	-4.71	-6.57	-1.80	0.22	-2.83
CAGR10 %	4.55	1.50	0.96	3.27	3.63	-1.02	-5.50	6.10
CAGR11 %	-6.07	-5.21	1.12	-1.35	-1.58	2.39	-9.84	1.23

Production

The production of various crops is the direct outcome of area and technological upgradation in the form of quantity and quality of inputs as well as farming practices and weather. Barring one or two cases, we find rising trends in production like acreage between 1991-92 and 2012-13. The exceptions like jowar, in which area has declined but production has gone up slightly. In case of bajra, increase in area was found marginal while increase in production is significantly higher (almost three times) due to growth in yield. The same could be observed for maize as well. (Table 7b)

Table 7b: Production of Important Crops in Haryana

(‘000Tonnes)

Year	Rice	Jowar	Bajra	Maize	Wheat	Barley	Total Cereals	Gram	Moong	Massar
1	2	3	4	5	6	7	8	9	10	11
1991-92	1803	29	314	47	6496	116	8805	202	3.1	7.7
1992-93	1880	46	743	55	7108	123	9955	260	2.6	6.7
1993-94	2061	25	328	36	7217	107	9774	403	3.0	6.6
1994-95	2230	29	720	44	7297	136	10456	440	3.4	6.5
1995-96	1847	26	409	48	7291	100	9721	381	3.1	7.2
1996-97	2463	29	650	44	7826	90	11102	276	5.7	7.2
1997-98	2556	32	674	50	7528	116	10956	309	8.0	6.0
1998-99	2432	25	618	39	8568	100	11782	294	5.0	7.0
1999-00	2583	22	582	48	9650	102	12987	58	2.0	6.2
2000-01	2695	23	656	34	9669	118	13195	80	1.2	5.2
2001-02	2726	22	832	47	9437	86	13150	122	3.1	7.5
2002-03	2468	22	458	29	9188	81	12246	41	2.8	5.4
2003-04	2790	26	1006	41	9111	73	13050	100	4.0	5.1
2004-05	3010	26	746	39	9043	58	12922	91	6.1	4.7
2005-06	3194	26	706	36	8853	79	12894	72	7.7	3.9
2006-07	3375	27	1021	30	10054	115	14627	90	9.3	3.5
2007-08	3606	42	1156	37	10232	120	15193	54	9.6	2.6
2008-09	3299	44	1087	25	11360	185	16000	129	6.5	3.6
2009-10	3628	39	930	26	10488	137	15248	62	6.6	3.6
2010-11	3465	38	1183	19	11578	130	16413	110	11.9	3.3
2011-12*	3757	33	1175	30	13119	149	18263	73	8.0	3.4
2012-13*	3976	28	785	23	11117	167	16096	53	4.3	3.0
CAGR8 %	4.63	-4.37	7.81	-1.52	2.95	-4.61	3.36	8.31	11.14	-0.39
CAGR9 %	2.10	-6.89	3.17	-1.75	5.29	-0.45	4.38	-24.33	-24.10	-0.99
CAGR10 %	5.63	4.45	5.95	-4.59	0.57	3.33	1.95	0.21	29.14	-12.99
CAGR11 %	1.47	1.68	1.77	-5.45	4.74	3.59	3.77	1.02	-0.27	1.64

Source : Director of Land Records, Haryana.

CAGR8: Compound Annual Growth Rate during 8th Five Year Plan

CAGR9: Compound Annual Growth Rate during 9th Five Year Plan

CAGR10: Compound Annual Growth Rate during 10th Five Year Plan

CAGR11: Compound Annual Growth Rate during 11th Five Year Plan

.....contd. Table 7b

(Production in 000 Tonnes)

Year	Other Pulses	Total Pulses	Total Foodgrains	Rape Seed & Mustard	Total Oilseeds	Cotton Lint @@	Sugarcane (Gur)	Potatoes
11	12	13	14	15	16	17	18	19
1991-92	59.2	273.1	9078.1	662	757.3	1341	905	235.4
1992-93	55.9	326.1	10281.1	518	558.5	1411	672	219.5
1993-94	55.4	468.7	10242.7	798	822.9	1124	646	189.6
1994-95	65.5	516.3	10972.3	802	860.5	1371	696	160.0
1995-96	58.3	450.7	10171.7	729	783.1	1284	809	161.6
1996-97	56.3	346.0	11448.0	894	985.0	1507	902	179.0
1997-98	51.0	376.0	11332.0	368	455.9	1107	750	67.7
1998-99	16.0	323.0	12105.0	615	653.0	874	701	213.0
1999-00	11.4	78.2	13065.2	595	604.6	1304	764	199.8
2000-01	13.1	99.8	13294.8	560	562.8	1383	817	141.2
2001-02	15.3	148.3	13298.3	800	805.4	722	927	203.1
2002-03	33.0	82.8	12328.8	697	705.6	1038	1065	291.9
2003-04	33.6	143.1	13193.1	965	976.8	1407	928	256.9
2004-05	32.4	134.9	13056.9	824	835.9	2095	823	269.1
2005-06	27.3	111.8	13005.8	792.8	822.1	1502	831	312.5
2006-07	31.9	136.0	14763.0	804	821.2	1805	965.1	319.9
2007-08	33.5	101.0	15294.1	597	617.2	1882	885	177.6
2008-09	37.5	177.8	16177.8	894.9	911.5	1862	520.6	258.6
2009-10	24.0	97.3	15345.3	847	862.0	1918	570.7	138.4
2010-11	27.9	153.1	16566.1	953.0	964.9	1747.0	604.0	280.9
2011-12*	22.6	107.0	18370.0	747.0	754.8	2621.0	695.0	263.0
2012-13*	17.2	77.5	16145.5	-	-	-	-	-
CAGR1 %	0.12	6.64	3.48	7.50	7.02	1.44	1.77	-6.78
CAGR2 %	-26.82	-24.06	3.80	1.94	-1.28	-7.19	1.38	8.24
CAGR3 %	9.16	1.18	1.94	0.73	1.15	19.00	-1.88	7.47
CAGR4 %	-7.47	-1.57	3.72	2.84	2.50	4.89	-7.41	-0.65

@@ In thousand bales of 170 Kg. each.

Yield

Table 7c presents the yield rates of important crops in Haryana. The productivity of each crop has increased between 1991-92 and 2012-13 except for moong and other other pulses. It is essential to mention that yield of major foodgrains that is paddy has shown a mixed pattern of increase and decrease. It is also true for several other crops as well. The compound annual growth rates of yield measured for Eight, Ninth, Tenth and Eleventh Five Year Plans also depict negative as well as positive growth rates. The highest growth in yield could be observed for moong in Tenth Five Year Plan.

Table 7c: Yield of Important Crops in Haryana

(kg/ha.)

Year	Total									
	Rice	Jowar	Bajra	Maize	Wheat	Barley	Cereals	Gram	Moong	Massar
1	2	3	4	5	6	7	8	9	10	11
1991-92	2831	236	563	1604	3597	2074	2762	659	491	634
1992-93	2650	394	1168	1772	3621	2324	2836	669	582	611
1993-94	2730	272	646	1190	3619	2816	2862	995	485	619
1994-95	2802	264	1265	1620	3676	2720	2956	1099	500	671
1995-96	2225	238	711	1827	3697	2507	2722	1010	444	692
1996-97	2967	222	1138	1691	3880	2585	3077	799	491	602
1997-98	2800	244	1154	1923	3660	2762	2918	872	500	718
1998-99	2239	192	1008	1950	3916	2778	2893	824	260	685
1999-00	2385	196	991	2400	4165	2914	3127	577	196	930
2000-01	2557	208	1079	2267	4106	2682	3152	640	226	798
2001-02	2652	209	1422	2584	4103	2880	3235	853	229	804
2002-03	2724	195	891	1833	4053	2700	3184	745	159	893
2003-04	2749	257	1607	2412	3937	2701	3183	813	158	816
2004-05	2939	272	1318	2600	3901	2636	3197	843	384	854
2005-06	3051	272	1117	2118	3844	2821	3133	554	431	741
2006-07	3238	300	1649	2308	4232	3026	3501	843	435	788
2007-08	3361	450	1841	2643	4158	3000	3529	505	439	746
2008-09	2724	500	1773	2154	4614	3491	3606	1040	453	728
2009-10	3008	500	1592	2167	4215	3262	3458	735	400	761
2010-11	2788	535	1792	1900	4624	3514	3628	982	468	901
2011-12*	3044	500	2040	2727	5183	3617	4096	924	486	893
2012-13*	3272	500	1910	2556	4452	3479	3800	1128	478	1000
CAGR8 %	-0.75	-5.14	8.02	1.92	1.31	3.77	1.29	6.79	-2.21	0.56
CAGR9 %	-2.18	-2.15	2.59	8.40	1.98	1.44	1.61	-2.70	-16.90	6.09
CAGR10 %	4.10	8.52	3.55	-0.16	-0.04	1.02	1.00	-2.57	22.45	-1.74
CAGR11 %	-2.18	9.18	2.53	-0.43	3.61	3.78	2.39	6.20	1.79	3.59

Source : Director of Land Records, Haryana.

Before working out production estimates on the basis of area and yield, figures of area were rounded off to the nearest thousand hectare.

CAGR8: Compound Annual Growth Rate during 8th Five Year PlanCAGR9: Compound Annual Growth Rate during 9th Five Year PlanCAGR10: Compound Annual Growth Rate during 10th Five Year PlanCAGR11: Compound Annual Growth Rate during 11th Five Year Plan

.....contd. Table 7c

(Yield in kg/ha.)

Year	Other Pulses	Total Pulses	Total Foodgrains	Rape Seed & Mustard	Total Oilseeds	Cotton Lint	Sugarcane (Gur)	Potatoes
1	12	13	14	15	16	17	18	19
1991-92	969	702	2538	1004	1080	451	5590	18152
1992-93	1013	707	2589	921	948	450	4855	16697
1993-94	1043	981	2693	1385	1382	339	5778	16729
1994-95	1168	1088	2735	1385	1391	255	5859	13692
1995-96	1092	1002	2530	1269	1282	408	5616	13545
1996-97	1131	828	2844	1459	1465	423	5571	13598
1997-98	1032	869	2706	662	740	195	5304	9130
1998-99	889	790	2701	1235	1241	255	5477	15787
1999-00	851	572	3046	1323	1307	488	5589	15771
2000-01	682	636	3061	1369	1359	424	5713	15226
2001-02	722	786	3127	1490	1479	195	5751	21126
2002-03	668	628	3099	1148	1136	340	5695	28256
2003-04	808	722	3070	1559	1544	455	5789	24417
2004-05	733	766	3096	1177	1170	568	6188	24848
2005-06	684	572	3017	1117	1117	437	6442	24804
2006-07	982	803	3396	1344	1333	581	6864	24941
2007-08	931	587	3416	1202	1207	664	6303	17910
2008-09	974	966	3501	1722	1728	694	5720	21664
2009-10	964	739	3379	1657	1648	646	7224	11280
2010-11	811	872	3525	1852	1852	510	7108	22631
2011-12*	962	870	4010	1394	1383	739	7319	21784
2012-13*	956	1006	3743	-	-	-	-	-
CAGR8 %	3.22	5.81	1.48	8.42	7.21	-2.53	1.25	-6.29
CAGR9 %	-9.60	-4.24	2.79	6.96	5.66	-2.53	1.15	11.27
CAGR10 %	4.42	-0.32	0.97	-2.48	-2.39	20.18	3.85	1.31
CAGR11 %	-1.49	3.84	2.57	4.20	4.14	0.97	2.65	-1.78

The agricultural development depends on level of investment in the sector. In the past four years, investment in agriculture has increased at a compound rate of around 25%, in absolute terms, from Rs. 1467 crore to Rs. 6147 crore or about 2.5 times at current prices (Table 14), but at constant prices, (Table 15), it was much lower or 1.4 times in absolute terms during 2007-08 to 2011-12.

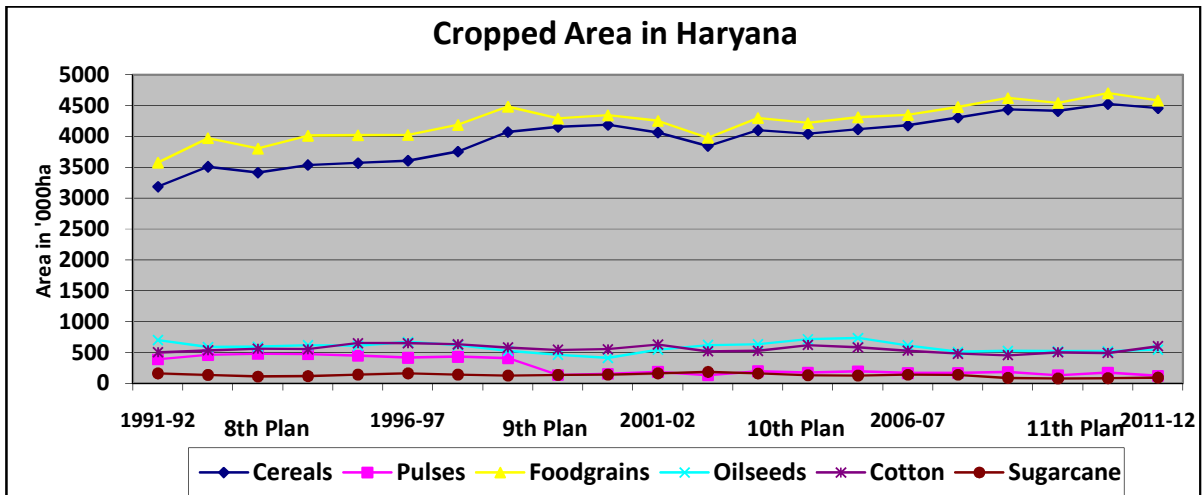


Fig.12

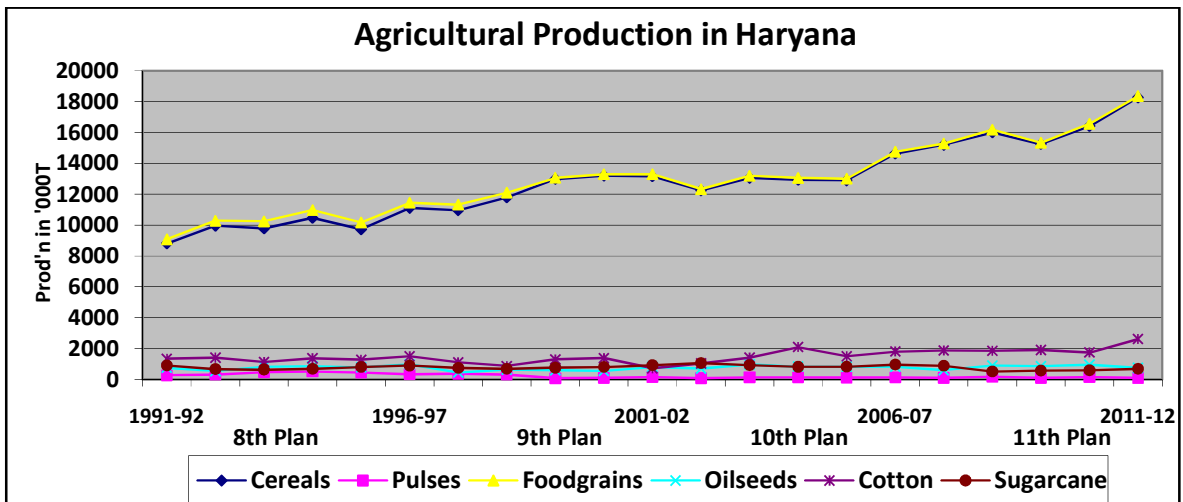


Fig.13

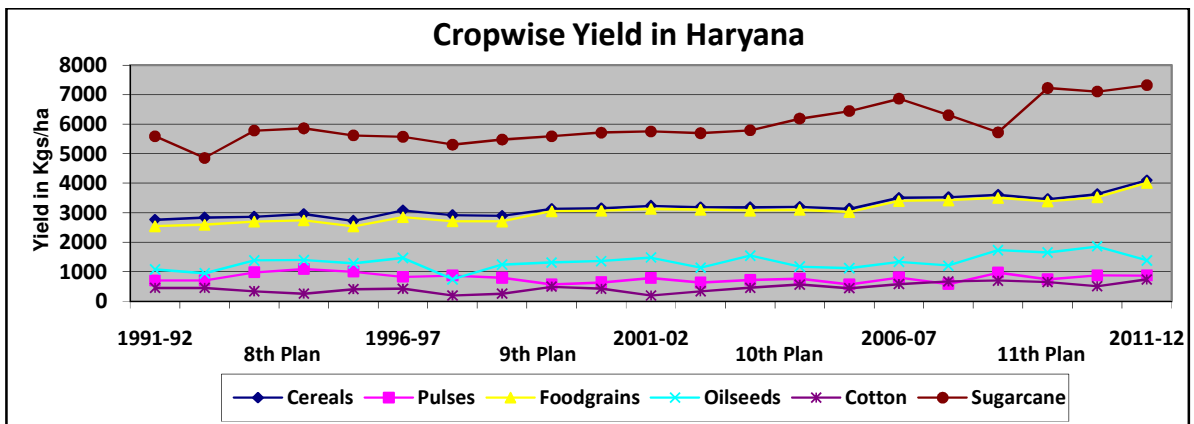


Fig.14

Operational Holdings

We have analysed number and size of the operational holdings in Haryana based data from Census, 2011 (Table 8). It is clear that about 48 per cent of holdings are marginal having less than 10 per cent of total area, whereas large holdings (2.8%) occupied more than 22 per cent area and that is why the average size of holdings varies significantly from 0.46 hectare (for marginal) to 17.95 hectares in the case of large holdings.

Table 8: Number and Area of Operational Holdings in Haryana, 2010-11

(ha.)

Size Group	Individual Holdings		Joint Holdings		Institutional Holdings		Total Holdings		Avg-Size (Ha.)
	No.	Area	No.	Area	No.	Area	No.	Area	
Marginal <1 ha.	288881	132925	483400	224915	5861	2635	778142	360475	0.46
Small 1 - 2 ha	108831	164083	203575	295054	2412	3567	314818	462704	1.47
Semi-Medium 2-4 ha	89273	256590	192236	551277	2319	6606	283828	814473	2.87
Medium 4 - 10 ha	41223	237482	150427	928243	3044	19708	194694	1185433	6.09
Large 10 ha. +	2852	41620	39401	655508	3576	125392	45829	822520	17.95
Total	531060	832700	1069039	2654997	17212	157908	1617311	3645605	2.25

Source: Director of Census Operations, Haryana

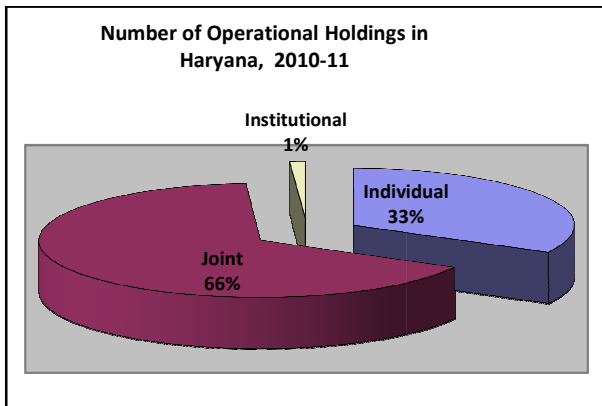


Fig.15

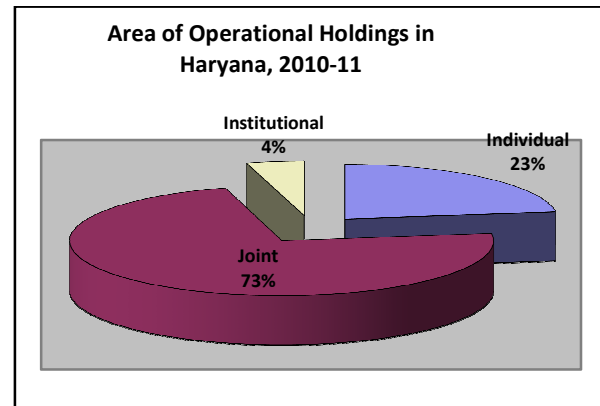


Fig.16

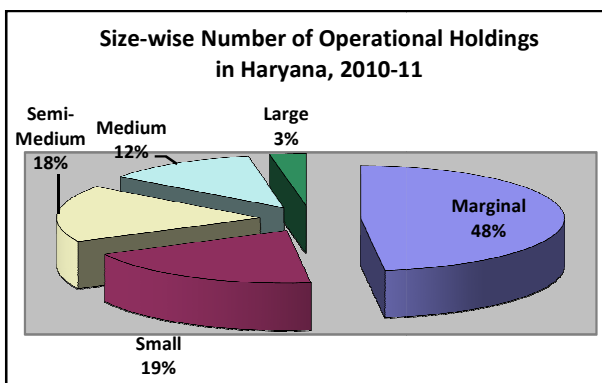


Fig.17

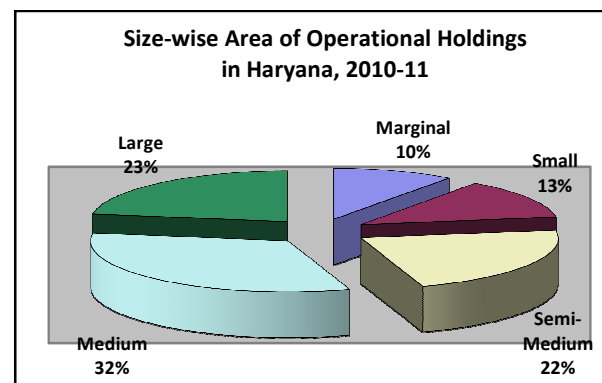


Fig.18

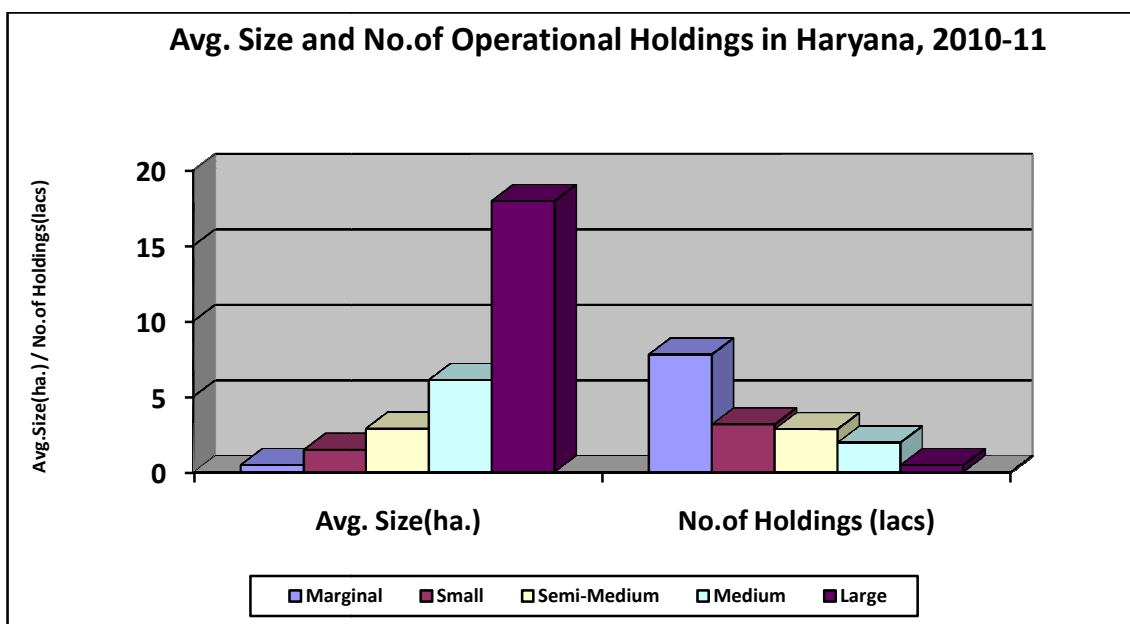


Fig.19

Status of Irrigated Area

Haryana is well irrigated since 85% of Net sown area is irrigated by private tube wells and canals. Tank or public sector tube well irrigation is almost non-existent. (Table 9).

Table 9: Net Area Irrigated by Sources in Haryana ('000 ha)

Year	Canals	Tanks	Wells	Tubewells	Others	Total	% Net area sown
2005-06	1331.0	(a)	(a)	1591.0	14.0	2936.0	82.3
2006-07	1309.0	(a)	(a)	1667.0	14.0	2990.0	84.1
2007-08	1381.0	(a)	(a)	1630.0	14.0	3025.0	84.2
2008-09	1274.0	(a)	1.0	1600.0	2.0	2877.0	80.5
2009-10	1282.0	(a)	2.0	1783.0	2.0	3069.0	86.4
2010-11	1236.0	-	(a)	1650	1	2887	82.1
2011-12*	1193.0	-	(a)	1879	(a)	3072	87.4
CAGR	-0.018			0.021	0.451	0.003	0.006

Source :— Director of Land Records, Haryana. (a) less than 500 hectares *provisional

Status of Livestock

Haryana is endowed with rich livestock genetic resources. The state is well known for the best “Murrah” breed of buffalo and Haryana and Sahiwal breeds of cattle. Buffalos contribute about 83% of milk in the state. Livestock is a major source of subsidiary income for the farmers. The state of animal husbandary is given below in Table 10.

Table 10: Animal Husbandary and Dairying in Haryana, 2012-13

Particulars	Upto Sept.2012
Livestock Population (Lacs.)	90.50
Milk Production (Lac tonnes)	66.61
Per Capita/day availability of milk (gms.)	708
Poultry Population (Lacs.)	28785
Eggs Production (Lacs.)	41884
Wool Production (Lac Kgs.)	13.33
Meat Production (Lac Kgs.)	132.07
Veterinary University	1
Veterinary Hospitals	945
Veterinary Dispensaries	1814
Semen Production Centres	3
Semen Banks	10
Diagnostic Laboratories	20
Haryana Veterinary Vaccine Institute	1
Haryana Veterinary Training Institute	1
Pet Animal Hospitals-cum-Teaching-Center	1
Veterinary Polyclinics	3
Registered Gaushalas	256
Total Staff	10849

Mechanization of agriculture in Haryana has been faster. Almost animal draught power has been replaced by the use of tractors. The status of animal driven implements as per 2007 Census is given in Table 11.

Table 11: Animal Driven Implements and Equipments in Haryana, Census 2007

District	Wooden plough	Steel plough	Cultivator	Disc harrow	Seed-cum-fertiliser/ drill /Seed drill	Leveller	Wet land puddler	Sugar-cane crusher	Cart
1	2	3	4	5	6	7	8	9	10
Panchkula	2363	1532	142	411	200	2235	1185	21	1755
Ambala	1495	2120	1939	2897	1133	2159	583	35	6254
Yamunanagar	1564	8654	1548	2686	647	7658	1254	66	7542
Kurukshetra	1018	635	1691	2349	845	1804	771	8	14520
Kaithal	2157	3005	1092	2656	773	2095	392	25	16704
Karnal	2281	1964	2472	3924	1127	2823	772	81	20240
Panipat	1363	341	1901	2213	607	1512	421	41	14042
Sonapat	2420	573	1399	1390	782	1175	256	21	12109
Jind	14673	17176	6128	10026	3626	13063	627	5	53780
Fatehabad	6653	7354	2217	2005	1976	3434	404	162	6477
Sirsa	6735	4992	2071	1619	1837	3711	570	28	12401
Hisar	25413	35339	8955	11551	6363	16442	3601	77	32826
Bhiwani	13175	18999	4237	4062	3913	4908	634	84	10440
Rohtak	3613	3246	2306	2633	2002	2668	493	70	13437
Jhajjar	498	278	1364	1279	988	1206	338	6	1607
Mahendergarh	4937	1579	9	11	9	1123	2	0	4224
Rewari	1002	339	553	555	609	516	54	0	1024
Gurgaon	1853	964	323	211	305	615	76	93	549
Faridabad	198	42	303	309	235	223	166	10	870
Mewat	320	33	140	136	172	110	32	1	19
Total	93731	109165	40790	52923	28149	69480	12631	834	230820

Consumption of Fertilizer

Status of fertilizer consumption in the state is given below (Table 12). In Haryana, per hectare use of fertilizer depicts increasing trend. The supply and distribution of fertilizer is monitored on day to day and rake to rake basis during the peak consumption period. There is no report of shortage of any fertilizer.

Table 12: Fertilizer Consumption in Haryana
(Tonnes)

Year	N	P	K	Total	Kg/ha*
2005-06	847427	252570	28674	1128671	317
2006-07	862642	244115	18217	1121974	316
2007-08	939502	257273	23592	1220367	340
2008-09	946266	313512	29361	1289139	360
2009-10	961875	333165	60648	1355688	382
2010-11	974045	335950	47627	1357622	386
2011-12	1020892	369624	37531	1428048	407
2012-13	1023999	311755	17307	1353061	-

Source: Director of Agriculture Haryana
(N-Nitrogen, P-Phosphorus, K- Potassium
* kg/ha of Net Sown Area

Consumption of Pesticides

Consumption of pesticides is another area of concern. As per Table 13, use of pesticides (grams per hectare of area covered) has increased at 0.45 per cent per annum between 2005-06 and 2012-13. The field surveys point out that farmers are using pesticides indiscriminately for foodgrains, vegetables and cotton, etc. There is an urgent need to monitor use of pesticides in view of negative impact on human health.

Table 13: Consumption of Pesticides in Haryana (Technical Grade)

Year	Quantity (In Tonnes)	Area covered (In 000 Hectare)	gram/ha
2005-06	4650	8495	547
2006-07	4600	8415	547
2007-08	4391	7555	581
2008-09	4288	7290	588
2009-10	4070	7119	572
2010-11	4060	7110	571
2011-12	4050	7110	570
2012-13(P)	4050	7110	570
CAGR	-0.022	-0.027	0.0045

Source :-Director of Agriculture, Haryana. P—Provisional

Fixed Capital Formation

Table 14 and 15 depict gross capital formation in agriculture and other sectors. It has increased at the rate of 17.42 per cent per annum between 2007-08 and 2011-12. In agriculture it has risen at the rate of 25.17 per cent per year at current prices. On the other hand, the growth of fixed capital formation was negative for forestry, fishing, mining & quarrying and railways.

Table 14: Estimates of Gross Fixed Capital Formation in Haryana
(Rs. Crore at current prices)

Industry	2007-08	2008-09	2009-10	2010-11	2011-12 (P)	CAGR*
1 Agriculture	2467.16	2912.31	3649.61	4429.28	6147.18	0.2517
	(9.30)	(9.10)	(10.1)	(10.4)	(12)	
2 Forestry	73.16	92.24	70.22	63.07	65.95	-0.0571
	(0.30)	(0.30)	(0.2)	(0.2)	(0.1)	
3 Fishing	7.91	9.82	9.66	9.01	6.86	-0.0364
	0	0	0	0	0	
4 Mining and Quarrying	54.33	54.53	18.79	0.89	0.79	-0.7157
	(0.20)	(0.20)	(0.1)	0	0	
5 Manufacturing	11371.0	12998.3	12876.1	15575.0	19769.09	0.1373
	(43.00)	(40.80)	(35.8)	(36.6)	(38.7)	
5.1 Registered	7386.49	8733.01	8178.28	10316.6	13307.74	0.1439
5.2 Un-registered	3984.6	4265.33	4697.88	5258.39	6461.35	0.1248
6 Electricity, Gas and Water Supply	3068.75	4506.95	4682.35	7028.52	6787.67	0.2253
	(11.60)	(14.10)	(13.0)	(16.5)	(13.3)	
7 Construction	682.72	704.73	1008.81	943.99	1074.72	0.1275
	(2.60)	(2.20)	(2.8)	(2.2)	(2.1)	
8 Trade, Hotels and Restaurants	129.08	373.24	397.83	408.11	444.51	0.2921
	(0.50)	(1.20)	(1.1)	(1.0)	(0.9)	
8.1 Trade	85.56	316.39	343.05	350.57	379.11	0.3607
8.2 Hotels and restaurants	43.52	56.85	54.78	57.54	65.4	0.0862
9 Transport, Storage and communication	1936.22	2036.9	3200.05	3170.6	3319.99	0.1643
	(7.30)	(6.40)	(8.9)	(7.4)	(6.5)	
9.1 Railways	751.65	653.18	588.51	623.11	685.42	-0.0229
9.2 Transport by other	418.35	504.22	417.88	526.96	548.25	0.0602
9.3 Storage	12.54	5.98	80.92	141.92	38.64	0.7190
9.4 Communication	753.68	873.52	2112.74	1878.61	2047.68	0.3185
10 Banking and Insurance	247.42	273.64	292.74	357.83	441.56	0.1533
	(0.90)	(0.90)	(0.8)	(0.8)	(0.9)	
11 Real Estate, Ownership of Dwellings, and Business Services (only Residential Building Part)	3386.59	3895.67	4251.64	4905.1	5674.62	0.1346
	(12.80)	(12.20)	(11.8)	(11.5)	(11.1)	
12 Public Administration	2658.85	3556.15	4941.53	5163.31	6619.07	0.2457
	(10.00)	(11.10)	(13.7)	(12.1)	(13)	
13 Other Services	380.14	467.42	623.2	560.8	741.49	0.1640
	(1.50)	(1.50)	(1.7)	(1.3)	(1.4)	
Total	26463.4	31881.9	36022.5	42615.5	51093.5	0.1742
	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	

Source :Department of Economic and Statistical Analysis, Haryana.;
Note - Figures in brackets are percentages to total.

* compounded annual growth rate
P- Provisional ,

When, gross fixed capital formation is examined at constant prices, after adjusting for inflation, the rates of increase come down significantly irrespective of sectors during the referred period.

Table 15: Estimates of Gross Fixed Capital Formation in Haryana
(Rs. Crore at constant prices, 2004-05)

Industry	2007-08	2008-09	2009-10	2010-11	2011-12	CAGR*
1. Agriculture	2033.21	2139.72	2398.68	2487.51	2916.26	0.0911
	(9.10)	(8.60)	(9.0)	(8.3)	(8.9)	
2. Forestry	60.05	68.14	49.1	39.4	37.19	-0.1398
	(0.30)	(0.30)	(0.2)	(0.1)	(0.1)	
3. Fishing	6.51	7.34	6.95	5.68	3.95	-0.1180
	0	0	0	0	0	
4. Mining and Quarrying	44.67	40.4	14.53	0.65	0.51	-0.7295
	(0.20)	(0.20)	(0.1)	0	0	
5. Manufacturing	9703.55	10269.93	10006.68	11916.71	14371.58	0.0979
	(43.50)	(41.40)	(37.6)	(39.6)	(43.9)	
5.1 Registered	6389.81	7004.19	6574.41	8296.15	10327.49	0.1196
5.2 Un-registered	3313.74	3265.74	3432.27	3620.56	4044	0.0514
6. Electricity, Gas and Water Supply	2638.67	3750.53	3364.77	5264.16	4457.66	0.1489
	(11.80)	(15.10)	(12.6)	(17.5)	(13.6)	
7. Construction	560.42	521.02	705.81	585.2	615.43	0.0308
	(2.50)	(2.20)	(2.7)	(2.0)	(1.9)	
8. Trade, Hotels and Restaurants	114.64	286.06	294.33	284.27	286.61	0.2004
	(0.50)	(1.10)	(1.1)	(0.9)	(0.9)	
Trade	79.18	244.22	256.26	246.94	248.31	0.2582
Hotels and	35.46	41.84	38.07	37.33	38.3	0.0040
9. Transport, Storage and Communication	1670.31	1648.89	2531.58	2382.83	2364.52	0.1122
	(7.50)	(6.60)	(9.5)	(7.9)	(7.2)	
9.1 Railways	631.31	512.4	443.91	445.65	454.47	-0.0766
9.2 Transport	385.62	439.89	353.79	432.44	425.98	0.0184
9.3 Storage	10.29	4.63	58.34	93.87	22.01	0.5730
9.4	646.09	691.97	1675.54	1410.87	1462	0.2644
10 Banking and Finance	214.48	202.34	238.69	270.37	313.7	0.1107
	(1.00)	(0.80)	(0.9)	(0.9)	(1.0)	
11. Real Estate, Ownership of Dwellings, Business Services (only residential Building Part)	2747.66	2863.5	2980.94	3058.06	3179.09	0.0364
	(12.30)	(11.50)	(11.2)	(10.2)	(9.7)	
12 Public Administration	2198.27	2682.36	3579.48	3431.45	3764.59	0.1414
	(9.90)	(10.80)	(13.4)	(11.4)	(11.5)	
13 Other Services	312.18	348.41	446.45	363.92	434.9	0.0732
	(1.40)	(1.40)	(1.7)	(1.2)	(1.3)	
Total	22304.62	24828.64	26617.99	30090.21	32745.99	0.1008
	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	

Note— Figures in brackets are percentages to total, annual growth rate

P –Provisional, * compounded

Source :—Department of Economic and Statistical Analysis, Haryana.

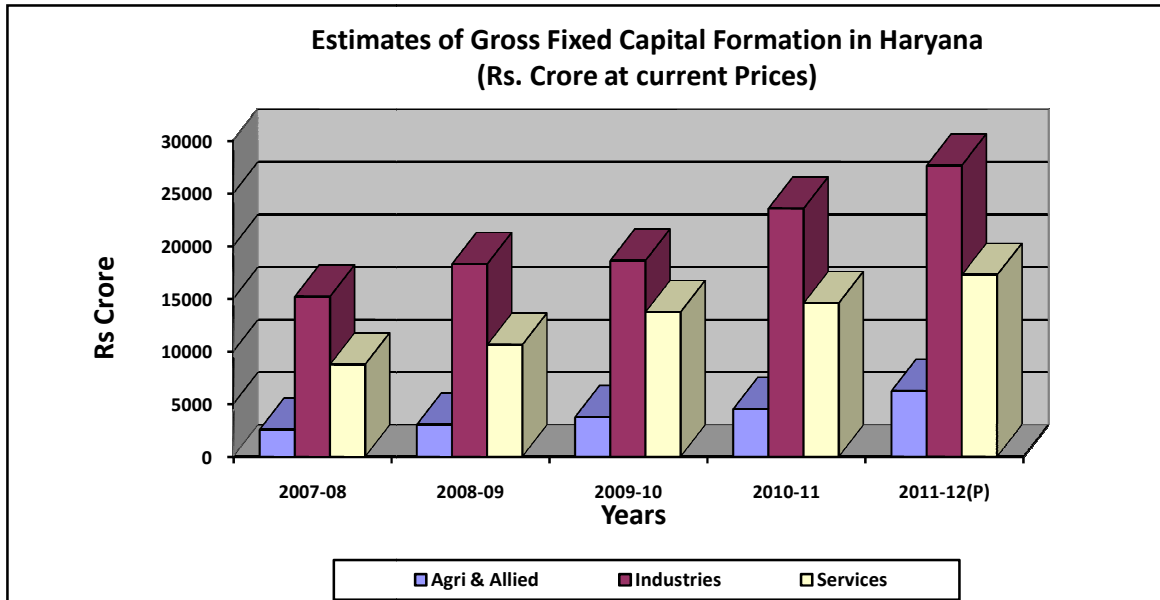


Fig.20

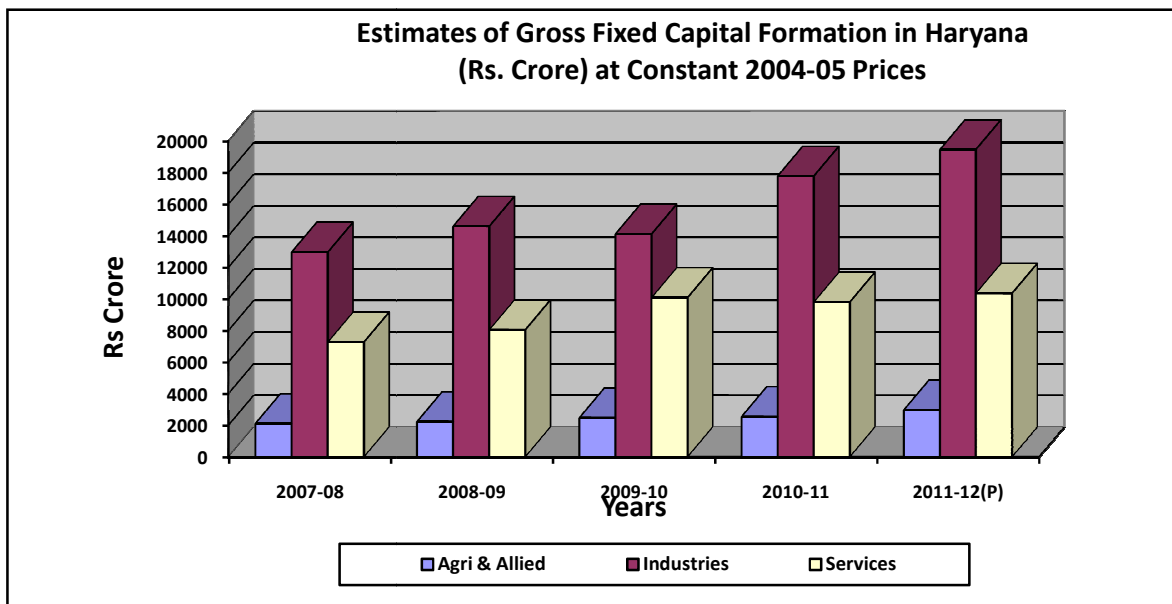


Fig.21

Marketing and storage

The agricultural produce markets are regulated in Haryana under the Punjab Agricultural Produce Markets Act, 1961. The progress of regulation was steady and improved the state of agricultural marketing in the state. With the increase in volume of arrivals due to increased production as well as due to increasing number of commodities coming under regulation, space has become inadequate and sub yards were introduced. Later on village purchase centres were developed due to heavy

rush of arrivals and delay in disposal. But, after liberalization, the APMC system is under attack and private sector is expected to compete with these markets. Therefore, further expansion of Regulated markets has come to a stand still for the last so many years (Table 16).

Table 16: Number of Markets in Haryana

Year	Number of regulated markets	Number of Sub-yards	Average number of villages served per regulated market	Average area served per regulated market (Sq. Kms.)
2006-07	106	178	64	417
2007-08	106	178	64	417
2008-09	106	178	64	417
2009-10	106	178	64	417
2010-11	106	178	64	417
2011-12	106	178	66	417
2012-13	107	174	64	413

Source :—Haryana State Agricultural Marketing Board.

Storage of agriculture produce is another important aspect of agricultural marketing which is equally important along with transportation and actual handling of the produce in the market.

We cannot forget that Haryana is a major supplier of food grains to the central pool, large part of the produce is marketed. Therefore, expansion of storage, transportation, market yards, etc have to be compatible with the production and arrivals. The private sector is expected to increase its role. The storage capacity of the godowns should be increased since a part of the foodgrains is stored in open. It ruins quality of the produce.

The Haryana State Warehousing Corporation is a statutory body created for providing scientific storage facilities for a wide range of agricultural produce and notified commodities to the Government Agencies, Public Enterprises, and Traders, etc. The Corporation is operating 109 warehouses across the state with a total storage capacity of 17.21 lakh tonnes which consists of covered godowns of 15.52 lakh tonne capacity and open plinths of 1.69 lakh tonne as on 31.12.2013. The storage capacity since 2005-06 is given in Table 17.

Table 17: Storage Capacity and its Utilization in Haryana

Year	Average Storage Capacity (in Tonne)	Average Utilization (in Tonne)	Utilization Percentage	No. of Warehouses
2005-06	1485309	851494	57	105
2006-07	1390272	837581	60	105
2007-08	1397115	968645	69	105
2008-09	1468483	1220165	83	106
2009-10	1692611	1544599	91	107
2010-11	1616270	1497189	93	107
2011-12	1672188	1645066	98	107
2012-13	1888401	1966756	104	108
2013-14 (upto Dec.,2013)	1814174	1729571	95	109

Source: Economic Survey of Haryana, 2013-14

Table 18: Godowns and their Capacity in Haryana since 2005 to 2013-14

Year	Capacity Constructed (Tonne)
2005-06	15000
2006-07	32000
2007-08	–
2008-09	7550
2009-10	77120
2010-11	30240
2011-12	20150
2012-13	97796
2013-14	238466 1. 47,440 tonne capacity godowns have been completed. 2. Godowns of 31,882 tonne capacities are in progress. 3. Godowns of 1,59,144 tonne are in the process of allotment as the possession of land was handed over by Agriculture Department in the month of December, 2013. Also the godown capacity 9,240 tonne at SWH Fatehabad shall be constructed in 2014-15 after transfer of land by Agriculture Department.

Source: Economic Survey of Haryana, 2013-14

The Corporation had owned storage godowns of 7,000 tonnes capacity at the time of inception on 1.11.1967. During the year 2013-14, the Corporation had taken up construction of 2,38,466 tonnes capacity godowns at 24 different locations in the state under the Rashtriya Krishi Vikas Yojana (RKVY) scheme. During the year 2012-13, capacity of godowns became 97746 tonnes. The details of construction of godowns under taken by the Corporation since 2005-06 are given in Table 18

Credit

Availability of credit in adequate amount, at proper time and at economical costs has been a major constraint in agriculture. Table 19 illustrates rate of growth of credit from all sources for agriculture and allied activities. It has grown at the rate of 0.23 per annum. It may be observed that credit growth through commercial banks was the highest. Credit from commercial banks was about 66% of total in 2012-13 and rate of growth has been 0.33 during 2007-08 to 2012-13.

Table 19: Ground Level Credit for Agriculture and Allied activities (Rs. Crore)

Agency	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	CAGR
Co-operative Banks	5677.62	4439.86	5484.54	6420.15	7844.41	8872.29	0.12
Regional Rural Banks	1399.36	1471.25	1936	2400.26	3228.49	3932.07	0.25
Commercial Banks	6796.3	7338.69	14429	17116.07	22339.33	25133.48	0.33
Other agencies	1501.26	951.42	350.46	388.02	417.15	328.56	-0.25
Total	15374.54	14201.22	22200	26324.5	33829.38	38266.4	0.23

Source: National Conference on Agriculture for Rabi campaign, 2013, Department of Agriculture, HARYANA

Table 20: Credit for Agriculture and Allied activities, Haryana (1-4-2011 to 31-3-2012)

Small Farmers				Non-Agri. ST					
Cash	Kind	Total		RA	NAP	TC	FDR	NSC	Total
11762.90	193.42	11956.32		21.66	30.38	7.37	211.94	9.77	281.12
Cash Credit				Huda financing	MT Agri. Advances				
Fertilizer	Revolving	Individual	Total		Dairy	Land Purchase	DRDA	Milch cattle	Total
81.87	41.26	164.14	287.27	110.44	21.07	0.00	1.26	0.25	22.58
Non-agri. MT									Total Advances
HHKN	SJRY	MV	House Loan	Study Loan	SE	CD	Integrated	Total	
32.42	1.37	8.10	157.84	1.60	704.69	111.21	154.24	1171.47	13829.20

Land Ceiling in Haryana

Haryana government has improved limit on agricultural land under the land ceiling Act 1972 known as THE HARYANA CEILING ON LAND HOLDINGS ACT, 1972 (Haryana Act No. 26 of 1972) and was published in the Haryana Government Gazette (Extraordinary) of December, 23, 1972. The Rules under the Act known as THE HARYANA CEILING ON LAND HOLDINGS RULES, 1973 were framed in 1973. Under the Act, land was categorized into 'A', 'AA', 'B' and 'C' as follows:

'A category land' means the land under assured irrigation capable of growing at least two crops in a year and irrigated by a canal or state tube well as mentioned in Section 4(1) (a);

'AA category land' means the land under assured irrigation. capable of growing at least two crops in a year and irrigated by private tube wells/pumping sets as mentioned in Section 4(1) (a) read with Section 4(5);

'B category land' means the land under assured irrigation capable of growing. at least one crop in a year as mentioned in Section 4(1)(b); and

'C category land' means land of all other types including land under or charge as mentioned in section 4(1)(c);

The maximum permissible limit of land was fixed 21.8 hectares of C category or equivalent to that of other categories. Other categories of land were adjusted on a formula treating

- A category of land = 1,
- AA category of land=1.25,
- B category of land= 1.5 and
- C category of land = 3.

Thus 1 unit A land = 1.25 units of AA land= 1.5 units of B land = 3 units of C land.. On adjustment ceiling limits were roughly equal to 54.5 acres of “C” land, 27.25 acres “B” land, 22.71 acres AA land and 18.17 acres of A land

The act has been amended in 2011 allowing ownership of any amount of land (both urban and agricultural) to corporate bodies is effected retrospectively from the year it was implemented that is September 1975. The Punjab and Haryana High Court taking a suo -moto notice stayed its implementation. The High court order was stayed by the Apex Court on a petition filed by land developers.

Soil fertility

The maps given below provide district wise information about the level of soil fertility or presence of micronutrients in the state. This understanding helps the farmers to use of fertilizers judiciously. It is essential to impart education to the farmers in such matters to avoid fertilizers which are not deficient in the soil in concerned districts. For example, phosphorus, potassium, manganese and zinc are not deficient in most of the districts. It is nitrogen which needs to be provided extensively in all the districts. Similarly, organic carbon is required to be provided. Considering the deficiency, availability of micronutrients in the soil, consumption of phosphorus and potassium needs to be looked carefully which are not deficient too.

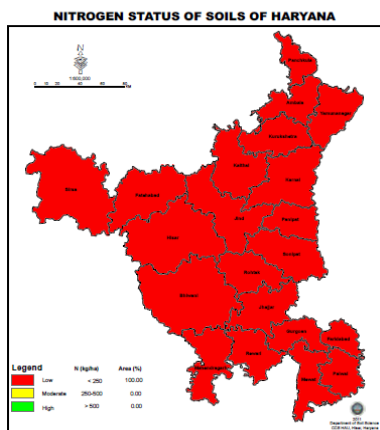


Fig.22

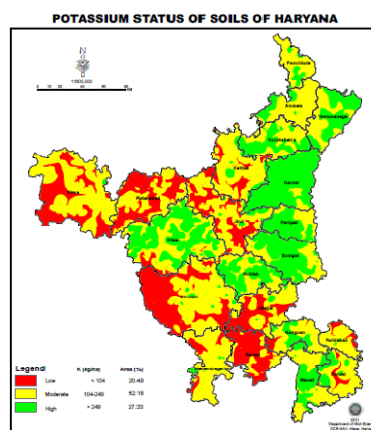


Fig.23

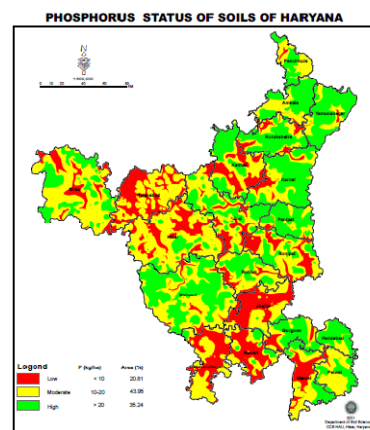


Fig.24

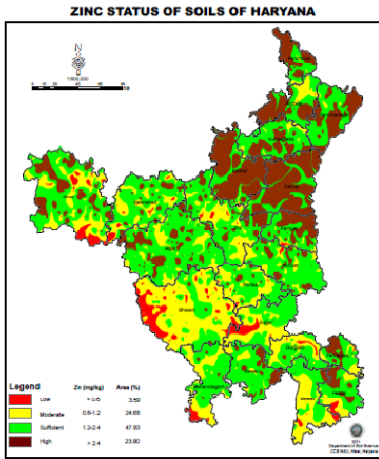


Fig. 25

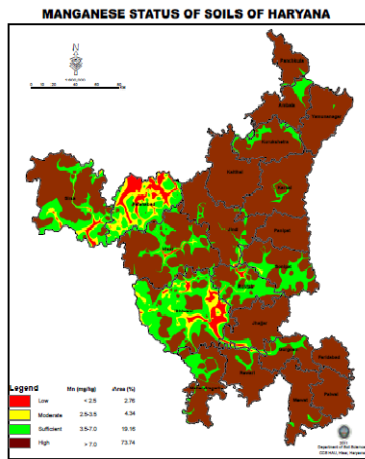


Fig.26

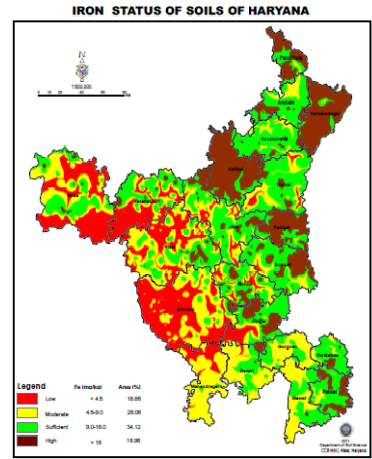


Fig.27

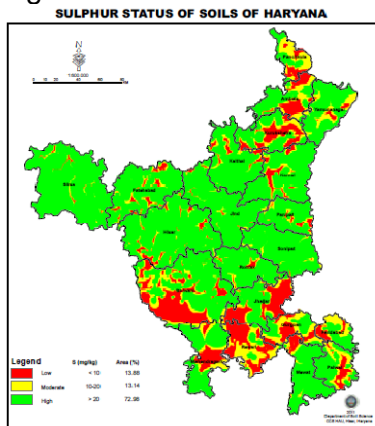


Fig.28

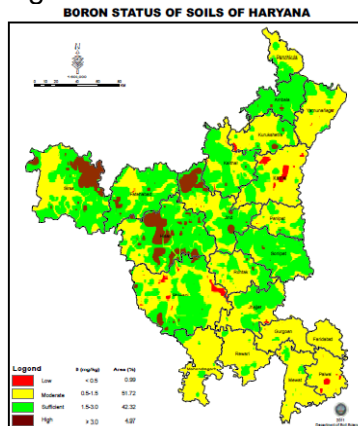


Fig.29

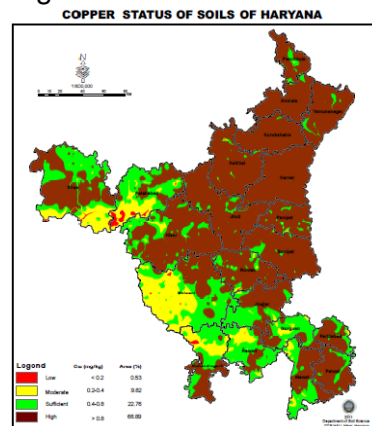


Fig.30

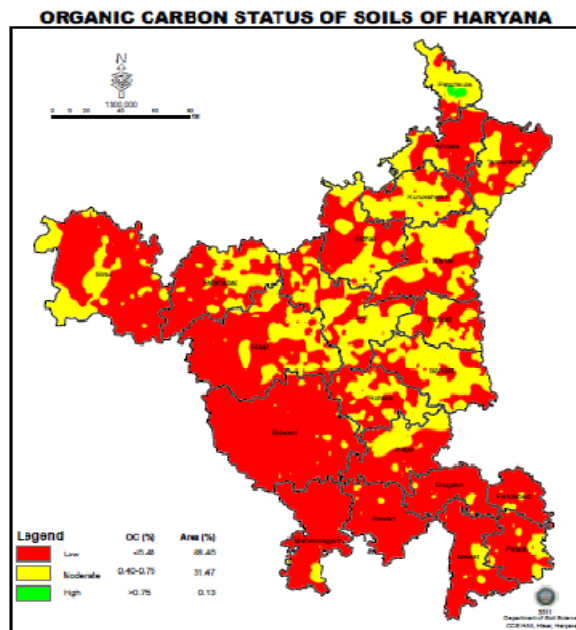


Fig 31

The problems of soil degradation (soil compaction, soil salinity, sodicity, water logging, and pesticide residue), multiple nutrient deficiency, low organic carbon content and decline in the total factor productivity have been observed under different production systems in the state.

Seed

Seed is the most critical of all agricultural inputs and determines the performance and efficiency of other inputs. It is important for enhancing productivity and production and thereby, income of the farmers. It is, therefore, essential that quantity of seeds with good genetic potential appropriate to the agro-climatic conditions are produced in sufficient quantity at affordable price and made available to the farmers timely for achieving higher agricultural production. Haryana and other states have already prepared the long term seed plan (2013-14 to 2016-17) based on their agro-climatic conditions, crop varieties being cultivated, targeted SRR (seed required for normal conditions and seed required for contingency situations).

Availability of certified seeds at reasonable rates is equally important and one of the vital inputs for agricultural growth. The state of seeds, viz. availability as well as requirement in the state is given in (Table 21a for Rabi Crops and Table 21b for Kharif Crops). At present in Haryana, availability of seed for the mentioned crops is more than the requirement.

Conclusion

Diversion of agricultural land for non-agricultural use is an emerging problem in Haryana.

The major cropping systems in the state are rice-wheat, cotton-wheat, pearl millet-wheat, clusterbean-raya/wheat, fallow-rape seed & mustard and sugarcane. There is considerable decline in water table in rice-wheat areas in the north eastern zone of Haryana. The delay in planting and low yield of wheat in cotton based cropping system are some of the important issues related to these cropping systems and diversification.

Inadequate availability of quality seeds of vegetables, flowers, spices, planting material for fruits, their higher cost and timely availability are some major constraints in promoting horticulture in the state. Farmers also need proper knowledge for controlling various pests and diseases, including processing and marketing of their produce.

**Table 21a : Requirement and Availability of Certified Seeds
in Haryana during RABI (Qtls.)**

Crop	Require ment	Availability							
		HSDC/SSC	Kribhco / IFFCO	NSC	HAFED	SFCI	HAU	Pvt.	Total
2013-14									
Wheat	1310000	265640	31136	51888	81456	10568		889571	1330259
Barley	24830	8153	0	520	0	2120		2390	13183
Gram	8000	2009	0	192	0	175		9000	11376
Lentil	500	10	0	0	0	0		960	970
Mustard	19300	2725	0	607	0	4445		16146	23923
Toria	600	48	0	0	0	0		964	1012
Total	1363230	278585	31136	53207	81456	17308		919031	1380723
2012-13									
Wheat	1248000	317022	84542	25400	90640	9165	5989	771755	1304513
Barley	30200	10095	0	0	0	1492	990	21000	33577
Gram	8300	1781	0	130	0	1068	60	6468	9507
Lentil	500	359	0	0	0	0	0	255	614
Mustard	20500	3251	288	356	0	1264	1070	16284	22513
Toria	1000	122	0	0	0	0	0	1135	1257
Total	1308500	332630	84830	25886	90640	12989	8109	816897	1371981
2011-12									
Wheat	927000	252241	79464	26500		18483		1406807	1783495
Barley	25600	6294	0	0		3210		19467	28971
Gram	7250	3149	0	400		3293		1627	8469
Lentil	600	313	0	100		0		550	963
Mustard	20300	4614	420	910		3238		11259	20441
Toria	850	55	0	500		0		546	1101
Total	981600	266666	79884	28410		28224		1440256	1843440
2010-11									
Wheat	900000	212038	64042	45900		2765		832537	1157282
Barley	22800	4532	0	0		609		19696	24837
Gram	4500	1354	0	70		817		3820	6061
Lentil	110	87	0	100		0		0	187
Mustard	20300	3459	309	683		2421		13939	20811
Toria	1165	115	0	200		0		1184	1499
Total	948875	221585	64351	46953	0	6612	0	871176	1210677
2009-10									
Wheat	740000	246459	56947	35860		5444		842294	1187004
Barley	36075	15324	0	0		0		36170	51494
Gram	5600	2016	0	709		2271		651	5647
Lentil	400	0	0	100		0		370	470
Mustard	16000	4891	275	500		2627		9436	17729
Toria	1300	596	0	0		0		1176	1772
Total	799375	269286	57222	37169	0	10342	0	890097	1264116

**Table 21b : Requirement and Availability of Certified Seeds
In Haryana during Kharif (Qtls.)**

Crop	Require ment	A v a i l a b i l i t y						
		HSDC/SSC	Kribhco / IFFCO	NSC	SFCI	HAFED	Pvt.	Total
2014								
Paddy	73950	6230	3090	10195	173228	192744	46412	431899
Cotton	500	0	0	866	500	1366	689	3421
Bajra	19200	489	862	20	20532	21903	9052	52858
Maize	12825	1796	267	7733	1060	10671	13943	35470
Kharif pulses	250	14	0	800	50	850	110	1824
Kharif Oil seeds	2650	0	0	0	2998	2998	3152	9148
Total	109375	8529	4219	19614	198368	230532	73358	534620
2013								
Paddy	67,100	7,977	670	6,150	1,095		167,271	183,163
Bajra	16,950	1,000	0	0	0		18,200	19,200
Moong	1,000	26	0	0	49		1,085	1160
Mash	600	160	0	0	0		604	764
Arhar	3,800	0	0	0	0		4,050	4,050
Moth	300	0	0	0	0		375	375
Guar	20,000	4,608	408	600	1920		12,598	20,134
G.Total	109,750	13,771	1078	6,750	3,064		204,183	228,846
2012								
Paddy	62500	8849	432	10130	1453		97612	118476
Cotton*	800	0	0	0	385		266	651
Bajra	25000	1003	0	75	0		27860	28938
Moong	20000	11372	0	1325	1153		4195	18045
Arhar	4200	503	0	75	633		5418	6629
Guar	10000	1324	2953	0	1792		5949	12018
Til	35	3	0	0	0		55	58
Moth	300	0	0	0	0		365	365
Total	122835	23054	3385	11605	5416		141720	185180
2 0 1 1								
Paddy	54500	8391	285	9179	697		129576	148128
Cotton*	1110	827	0	23	231		400	1481
Bajra	24300	1844	0	37	0		28995	30876
Moong	5470	2334	0	241	80		2610	5265
Arhar	3650	80	0	110	0		4531	4721
Guar	8800	1869	153	685	260		9784	12751
Til	35	10	0	0	0		40	50
Moth	250	2	0	0	0		195	197
Maize	5050	500	0	3000	0		6100	9600
Ground nut	70	0	0	0	18		110	128
Total	103235	15857	438	13275	1286		182341	213197

* excluding Bt. Cotton

Haryana should place their Breeder Seed indent plan for production of Foundation seeds and then certified seeds through their various seed producing agencies like State Directorates of Agriculture, State Seeds Corporation, State Seed Farms, State Agriculture University Farms, State Oilseed Grower Federations, other state co-operatives, National Seeds Corporation (NSC), State Farms Corporation of India (SFCI), Krishak Bharati Cooperative Limited (KRIBHCO), Indian Farmers Fertilizers Cooperative Limited (IFFCO), private companies, etc.

Haryana is endowed with rich livestock genetic resources. The state is well known for the best “Murrah” breed of buffalo and Haryana and Sahiwal breeds of cattle. Buffalos contribute more than 90 per cent of milk in the state. In the integrated farming system, research on livestock (dairying, goatery and piggery), poultry and fishery component should receive priority in policy initiatives.

In order to help farmers to get more than one loan on a given property, the mortgage of land by the banks should be regulated as per the value of the land and amount of loan requested.

Risk and uncertainty are higher in agriculture and these are increasing owing to climate change. Nothing can be worse for a farmer than a natural disaster, (untimely rainfall destroy crops). The early information/warning system with respect to weather, natural calamities, floods/droughts, shortage of critical inputs shall be ensured and strengthened. To protect the farmers, the natural calamities shall be assessed at the block level rather than at the district level. Further, in case of damage of crops/enterprises by natural calamities, suitable interim financial relief shall be made available immediately to the farmers till such time final assessment is done by the state/ central government agencies.