



Regional Variation in Agriculture Production, Productivity and farm Income in Haryana: A Composite Analysis

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Abstract: *In four districts of Haryana, the role and factors associated with the integral farming system were considered as a potential choice for improving farmers' revenues and ensuring their sustainable living. The contribution of various combinations of companies including poultry, fisheries, shept and goat, and horticulture was evaluated with crop and milk as the basis for their effect on the overall income of farmers. s. The aim of this research paper is to analyze the key crops produced from farming crops, their productivity and their farmer income. There is also an overview of this important agricultural crop.*

Keywords: *Farmers, Income, Production, Productivity.*

1. INTRODUCTION

Haryana is independent in food production and the second largest contributor to the central food grain pool in India. A known as "The India Broad Basket," Haryana is one of the leading agriculture producers in the world in the adoption of the new technology in agriculture. The State has numerous agroecological trends and cultivation patterns. Rice, wheat, sugarcane, cotton, oilseeds, perlate millet and barley are the main agricultural crops produced in the state. Haryana exports more than 60 percent Basmati Rice from India. Haryana has followed progressive policies to improve farming over the years by fostering science, growth, the system of public distributors, the development of irrigation, land acquisition, credit and energy subsidies, infrastructure such as highways, markets, electricity production, etc. Over the years.

The main Kharif crops, sown from April and May, are rice, jowar, bajra, maize, cotton, jute, sucrucane, sessame and groundnut. Most of Rabi crops, sown in late October or early November and harvested in March, are wheat, tobacco, gram, linseed, grapefruits, rape and mustard.



Haryana is an agricultural state and one of the major contributors to the national food basket. The most important cereals in the state are wheat and rice. In the development of basmati rice, the state has a top spot. Over the past three decades, their production and average output have increased considerably. However, the rise in Haryana as a whole was not comparable. In the area and production of these crops in different regions very broad variations were observed. The State is self-sufficient and the second largest contributor to the central pool of food grains. Haryana is blessed with numerous crops and agro-ecological trends. The State is also one of the world's leading horticultural states. For the agro- and food processing sectors, the government has enormous potential.

Agriculture revenue: The key yield levels are based on high productivity and low-risk cultivation with guaranteed irrigation. The farming sector is based on the concept of cause and effect. Any change in weather or climate tends to change agriculture's productivity and related sector and the price of agricultural products, which directly affect farmers' incomes. The system of mixed-crop farming is also a significant secondary income source for millions of rural families and has taken on a major role in providing work opportunities and income for disadvantaged and women farmers in India in particular. By 2022, the government is working to double the farmers' income, and has introduced multiple initiatives covering seeds and marketing.

Literature Review

The current research aims at evaluating the influence of climate change on agriculture production in Haryana for 2000-2012. Umer Jeelanie Banday (2014) In India among other things, climate change shows itself in increasing temperatures, decrease in arid plains, decrease in productivity, and increase in monsoons and speed up the glacial melt. There is a great effect on agriculture from climate change compared with any other field, and several factors in the different places in the country have been studied. A research has shown that climate change such as drought affects the return on rain fed crops to a high degree. A research project on Haryana that results in a substantial reduction in yield by 20 percent or more during crop development, due to short periods of exposure of wheat crops to the temperature from 28oC to 32oC, are a major constraint on productivity (HSAPCC, 2011). In addition, a study indicates that over the period 2010-2039, climate change would slash major cropping yields by 4.5 to 9%. Change in climatic variables have therefore limited and reduced farm productivity, threatening food security in the long term. This is why the effect of climate change on the development of agriculture in Haryana is being studied. The annual average rainfall and average temperature of Haryana over the 2000-2012 term were used for the purpose to regress data from wheat production. The results of the study suggest that Haryana's agricultural production is affected by climate change.

A. Amarender Reddy (2013) For several decades, the degree of regional inequalities in India have been a matter of concern, part of which is informed by a willingness to reduce poverty. The economic, cultural and political landscape in India remains a significant feature of agriculture. Orissa is one of India's poorest countries. Stagnation in agriculture in Orissa has existed over the past four decades. The growth rate of agriculture in Orissa is less than in all of India between 1991 and 2008. Orissa farming is highly concentrated on low-production and high-water-consumption paddy crops which vary little towards hydrostatic pulses, oleaginous seeds and the use of other HVC crops. The energy and irrigation per unit area are characterized by low fertilizer consumption as opposed to other nations. Inputs to raise



agricultural revenues in all crops need to be improved in the region covered by certified plants, irrigation and other productivity. There are major regional differences, as better initial socio-economic conditions in the coastal plains in 1971 have a positive impact on growth in the later years, with a direct gain for agricultural production compared to the area of Central Table Land, Nord Plateau and eastern Ghat. Major income benefits can be achieved in upland rain-fed zones during the Kharif (Rainy) season by plant diversification from paddy to pulses, oil seeds or HVC, where sufficient draining, institutional and political support is provided in the Eastern Ghats and Northern Plateau of Orissa.

Amarjeet Singh (2017) The research focuses on the review of Punjab's and Haryana's development scenario from 1980-81 to 2014-15. Amarjeet Singh (1997) As noted, from 2000–2001, the Haryana agriculture sector experienced a healthier rate of growth compared to Punjab. Punjab has been a twinkling of green movement activities. The serious problem is that the rising agricultural sector in Punjab and Haryana reported negative growth at 2011-2012 prices between 2011-2012 and 2015-2016. The growth rate of the agricultural sector should be enhanced due to its leading share of GSDP in agriculture. As a result, any change in the growth of the crop sector would jerke the increase of the farming industry. The share in agriculture GSDP in Haryana and 28% in Punjab increased in 2014 to 36 percent. The study suggests that the R&D budget of agriculture Institutes that use high yield varieties and other inputs should be increased for the policy effect. Government intervention is important to alter farmers' use of high-quality crops with the beneficiary and price of the commodity as well as the appropriate market facility.

Asif Reza Anik (2017) In the South Asia report, a computational multi-lane multi-temporary Total Factor (TFP) Indexes and six finer components (technical changes, changes in technical, scale and mix performance, residual scale changes and residual mixed-effectiveness changes) were assessed and the roles of capital in driving the project and its role in the growth of agricultural sustainability in the countries of South Asia. Results show that all countries have maintained variable rates of agricultural productivity growth at the highest estimated rate at 1,05% p.a. Bangladesh. The following countries were India (0.52%), Pakistan (0.38%) and Nepal (0.06 percent p.a.). Technical and scale efficiency improvements between countries have been little or no difference. However, the efficiency of residual scales rose @0.44% p.a. 0.12 percent p.a. in Bangladesh In Pakistan, India stayed the same and decreased -0,39% p.a. In Pakistan. In Nepal. In Nepal. In Bangladesh, the mixed efficiency also increased by 0.44%, remained unchanged in India and decreased by -0.12% p.a. in Pakistan and -0.39% p.a. In Nepal. In Nepal. TFP growth was guided by the levels of natural, human and technological equipment capital, while the influence of financial capital and crop diversification was contrary. Policy impacts include land and tenure reforms to consolidate the size of the agricultural operations and to smooth land rental markets in order to improve natural resources, educational expenditure to improve human capital and agricultural R&D for the development of technical capital in order to boost agricultural productivity growth in South Asia.

Objectives

- 1) To study the extend of inter-regional variation in development and income from agriculture in Haryana.
- 2) to examine the factors associated with the variations of agriculture productivity.
- 3) to access the performance and suitability of growing crops in various district.



2. RESEARCH METHODOLOGY

The research adopted quantitative and qualitative approaches in order to examine the problem under discussion thoroughly and to come to a conclusion. Both open and closed questions were used to capture both quantitative and qualitative data across organized and semi-structured schedules. Goal demographic interviews were performed as above. The report is created specifically in order to help policymakers recognise particular problems and challenges and take effective measures to ensure that crop diversification in Haryana is a success.

Data Analysis

In order to calculate the revenue generation for efficient use of debt in the context of the debt, income-generated and agricultural segment, is often expected to be productive usage of debt. The study finds that, in terms of income generation and in different industries, the plurality of farmers in both categories gained.

Table 1: Income from farms

Size group Generated Income (In Rs.)	Income Generation for Farmers		Sector-wise Income Generation of Farmers		
	No.	Yes	Agriculture Sector	Allied Sector	Others Sector
Nil	13(22)	–	–	–	–
Upto 5000	–	16(28)	5	11	–
5000-10000	–	20(35)	5	15	–
10000-15000	–	5(9)	–	–	5
15000-20000	–	2(3)	–	–	2
20000-25000	–	–	–	–	–
25000-30000	–	2(3)	–	–	2
30000 & above	–	–	–	–	–
Total	13(22)	45(78)	10(18)	26(45)	9(15)
Total Number of Surveyed Farmers - 58					

It indicates the role of farm, allied and other sectors for which households are indebted in terms of income generation; 13 farmers (28%) out of 58 marginal farmers record no generation of revenue. The study showed that for the marginal farmer group, the debt produced revenues for 45 (78 percent) of the farming sample. In the sector, 18, 45 and 15 neglected agriculturists, the allied sector and others are optimistic in their percentage of income-generating farmers. It concludes that marginal farmers are eager to develop their practices in collaboration.

Variation in Agricultural productivity

The first 2 decades saw a better rise in agricultural productivity per hectare of Haryana, as was the case in general GSDP, with an increase in Haryana productivity of 3.26 percent and 2.35 percent following 2000-01. Looking from 1980-81 to 2014-15 Haryana reported 3.16



per cent rise in production per hectare. The GSDP is guided by the crops market. It is not out of context to note. This is a problem for the policymaker and they must care of the agricultural sector in order to start GSDP.

Years	Haryana
1980-81 to 1990-91	4.74
1990-91 to 2000-01	1.62
2000-01 to 2010-11	3.26
2010-11 to 2014-15	2.35
1980-81 to 2014-15	3.16

Production and Productivity

The most important cereals in the state are wheat and rice. Over the last three decades, their production and total output have improved considerably. However, the rise in Haryana as a whole was not comparable. Quite varying areas and output of these crops have been observed. In multiple countries. In Region I, the wheat and rice area and production were higher than in Region II for the first time, but in Region II, the yield of wheat increased considerably and thus exceeded region I. The key area of this transition is that wheat is produced in second region with stronger irrigation installations in selected pockets, while it is produced in all kind of soils in region II. In Region I the output of all other crops in comparison with Region II is higher, but in the second cycle the difference is narrowed. Crop production in a specific area of farming may be high, because of the favorable environment, and production, despite significant expenditure, may not improve if unfavorable weather conditions persist. Again, gains can arise not only through crop yields but also through many other indirect forms. They all may not be able to be quantified but may have changed the lives of farmers altogether.

Table 2 variations In area and yield of main crops in Haryana

Crops	Triennium ending 2015-16				Triennium ending 2017-18			
	Area (000 hal		Yield (kg/ha)		Area (000 hal		Yield (kg/ha)	
	Region I	Region II	Region I	Region II	Region I	Region II	Region I	Region II
Rice	355.6	5.6	2213	1480	537	16.6	2697	2686
Jowar	6.5	49.6	246	230	0.9	35.3	356	435
Bajra	18.3	496.8	530	458	139	367.6	1038	924
Maize	60.3	2.2	818	728	24.8	1.1	1710	
Wheat	534.0	315.9	2099	2016	631.3	379.7	3621	3747
Barley	14.1	65.4	1034	1469	0.2	16.3		2219
Gram	42.0	153.9	720	534	4.6	1864	1068	959
Other pul'es	30.3	252			17.3	10.3		
Rapeseed & mustard	17.1	67.1	271	645	134	334.3	1215	1435



Cotton	10.6	12.4	456	338	8.1	58.9	303	471
Sugarcane	52.9	12.1	43406	26150	82.7	10.6	57070	5:3280
Potato	7.8	0.9	17012	15286	13.6	0.9	13170	11987

While Haryana's agricultural growth rate has been imposing, farm prosperity growth in the entire state has not yet been standardized. The better places have also strengthened their status. Many regions remain poor and backward, which mean that sustainable growth is important. Such geographical imbalances may be because the farmers are different in wealth and partly because modern agricultural technology is increasingly spreading and embracing (Grewal and Sharma) (1982). Therefore, the magnitude of geographical developments and their reasons for agriculture must be illustrated in a proper development strategy.

Table 1: Regional Variations in Agricultural Infrastructural Development in Haryana. (Area 000ha)

Particulars	2015-16		2017-18	
	Reg. I	Reg. II	Reg. I	Reg. II
Total Geog. Area	1122	1273	1168	1258
Net area SCANI1	!B)	975	914	1002
	(79)	(76.6)	(78)	(79)
Net irrigated area	6al	~	835	f64
	(70)	(37)	(91)	(56)
Gross irrigated area	1055	523	1528	815
No. of tubewells/000ha	17.5	8.25	22.3	13.8
of cultivated area				
No. of tractors/000ha	2.02	0.85	6.1	3.4
of cultivated area				
Cropping intensity (%)	156	143	179	158
Fertilizer consumption	86	14	225	130
(NPK In kg/ha)				
Nwnber of regulated				
markets:				
il Main markets	33	~.3	43	.26
ii) Sub yards	34	29	34	33
Credit advanced (Co-op). -			4738	2001
(Rs./hal				

3. CONCLUSION

Haryana's farming sector is rising at a healthier pace of development. The negative growth of the crop industry in the state was projected. The growth rate of the crop sector needs to be increased since the sector plays a leading position in the agricultural GSDP. This business is jerking off the development of the farming sector. The ultimate goal of agricultural mechanization is to increase overall efficiency and output at the lowest production rate. In addition to the irrigation, biological and chemical input of high yield seed varieties, fertilizers, pesticides and mechanical resources, the contribution of agricultural debts was



well recognized. So we have seen a gradual reduction in the amount allocated to the introductory heads as modern agricultural technology has been adopted in the State. Currently, structured sector loan strategy has passed on to irrigation, farm machinery procurement and its positive effect on revenue, jobs and assets generation.

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