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A Study on Changing Scenario of Agricultural State of Haryana

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ABSTRACT

This study emphasizes on the Haryana's agricultural state. This aimed to assess the current scenario of agriculture in Haryana, including the production, productivity, and profitability of major crops, as well as the adoption of modern agricultural technologies by farmers. The results indicate that agriculture in Haryana is dominated by cereal crops such as wheat and rice, which account for over 80% of the cultivated area. This study includes the opportunities that farmers must use to enhance the productivity. In future which can assist Haryana's agricultural activities indulged people to evolve the ways they use.

INTRODUCTION

Haryana is an inland state situated between the latitudes of 27°39' to 30°35' N and longitudes of 74°28' to 77°36' E. It is a little Indian state with the area of 44,212 sq.km. Also, in 1991, the populace under 26 million out of which 65% is country. Despite of its fringe area, Haryana is a state in northern India known for its rich horticultural legacy. The state's farming is a critical driver of economy as of serving 14.1 % in Gross domestic product, giving work to 51 % of the labor force. Furthermore, if there should arise an occurrence of modern business, agribusiness based ventures represent over 31%. Haryana, known as the "breadbasket of India," has been a major contributor to India's agricultural growth over the years. With a land area of just 1.4% of India, the state contributes nearly 3.9% to the country's food grain production, as the second largest food grains contributor becoming a significant player to the nation's food security by providing 15 % of its agricultural produce. According to the secondary data collected by time series trends from 1966-67 to 2015-16 demonstrated a substantial enhancement in total cropped area, irrigation & crops intensity in Haryana. In the traditional understanding of agrarian society, evolvement of capitalism and modernization of agriculture led to an expansion in efficiency and mix of farming by a few folds into public more extensive market.

The state government has launched several schemes and initiatives aimed at improving the income and livelihoods of farmers. These initiatives include providing subsidies for agricultural inputs, promoting crop diversification, and investing in irrigation infrastructure. Despite the challenges faced by the sector, such as climate change and fluctuating market prices, Haryana's agriculture continues to thrive and remain a key contributor to the state's development.

In this context, conducting agricultural surveys has become an essential tool for policymakers to understand the existing conditions and trends in the sector. The survey data provides critical information about the state of agriculture, including crop patterns, land use and irrigation practices. The data collected through these surveys can be used to plan and implement policies aimed at improving agricultural productivity, reducing poverty, and increasing the income of farmers.

This exploration paper plans to give an outline of the horticultural territory of Haryana. The paper will analyze the changes in the agricultural sector over this period and provide insights into the key factors responsible for these changes. The study will focus on studying the data collected and identifying the trends and patterns that have emerged over the decade. This analysis will provide policymakers with valuable insights into the effectiveness of these initiatives and help in identifying areas that require further intervention.

Overall, this research paper will contribute to the understanding of the agricultural sector in Haryana and provide policymakers with critical information that can be used to design effective policies aimed at improving the productivity and income of farmers.

Research Methodology: Percentage, content analysis, diagrams, and tabular charts are used.

Objectives:

- To assess the agricultural and related sectors' performance in Haryana.
- To calculate the land productivity measure.
- To investigate how agriculture contributes to the economic growth of the state.
- To assess the actions taken by the government to involve people in agriculture.

Agricultural Profile of Haryana

Geographical Area	44.21 lakh ha.
Cultivated Area	38.09 lakh ha.
Net Area Sown	35.56 lakh ha.
Cropping intensity	182 %
(National Average 135%)	
Irrigated Area	84%
Area under Brackish water	54%
No. of Farm Holdings	15.28 lakh
a) Marginal Farmers	7.04 lakh
	(46.1%)
b) Small Farmers	2.94 lakh
	(19.3%)
c) Others	
	5.30 lakh
	(34.7%)

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

The graph illustrates that Haryana's GDP growth rate surpasses that of the entire country. Over time, the state has implemented forward-thinking policies aimed at boosting investment in agriculture, fortifying the research and development system, improving the public distribution system, empowering Panchayati Raj institutions, advancing irrigation development, formulating land acquisition policies, providing subsidies for credit and power utilization, and enhancing infrastructure such as roads, markets, and power generation and supply..

Scope of Research

Haryana's agriculture has undergone significant transformation over the years, with the adoption of new technologies, improved irrigation systems, and the diversification of crops. The state's agricultural landscape is characterized by a mix of small and large land holdings, where the typical farm size is 1.57 hectares. Although the state is best known for producing cotton, sugarcane, wheat, and rice, there is a great deal of potential for growing High-value crops such as fruits, vegetables, and flowers. One of the key areas of research in Haryana's agriculture is the adoption of agricultural methods that are climate smart. Due to its increasing temperatures, altered precipitation patterns, and frequent extreme weather, the state is especially vulnerable to the impacts of climate change on events influencing agricultural productivity. Research into this area could focus on the development of new varieties of crops that are more resistant to heat and drought, the promotion of sustainable soil management practices, and the use of water-efficient technologies such as drip irrigation.

Another there is also a significant potential for the adoption of new technologies in Haryana's agriculture. Research could focus on the development of precision agriculture technologies such as drones, artificial intelligence, and data analytics, which could help farmers, optimize their use of resources and improve yields. The use of block chain technology in agriculture could also be explored, which could help improve supply chain efficiency and transparency.

Challenges: The wheat and rice yields in Haryana consistently outpace the national average. In the 2016-2017 periods, Haryana achieved an average wheat yield of 4841 kg/hectare in Production Environment (PE), surpassing India's average of 3172 kg/hectare. Similarly, the average rice yield in Haryana for the same period was 3213 kg/hectare at PE, compared to India's average of 2543 kg/hectare. This has solidified the state's reputation as the "Indian Breadbasket." While state-driven initiatives to support agriculture and farmers have yielded positive results, local farmers still grapple with numerous challenges.

Water scarcity: Haryana faces significant water scarcity, which is a major challenge for agriculture. Farmers are increasingly adopting water-efficient technologies such as drip irrigation, but more needs to be done to conserve water and improve irrigation efficiency.

Soil degradation: Soil degradation is a significant challenge in Haryana, with soil erosion, stalinization, and nutrient depletion affecting crop yields. Farmers need to implement integrated nutrient management and conservation agriculture as sustainable methods of managing the soil.

Low productivity: Haryana's agricultural productivity is lower than many other states in India, with factors such as small land holdings, low mechanization, and low utilization of inputs like fertilizers and pesticides contributing to this challenge. There is a need for increased investment in agricultural research, extension services, and technology transfer to improve productivity.

Market access: Farmers in Haryana face challenges in accessing markets due to factors such as poor infrastructure, lack of market information, and price volatility. The government can support farmers by improving market infrastructure, promoting farmer-producer organizations, and establishing price stabilization mechanisms.

Current Scenario of Agriculture & resources in Haryana

The state has consistently been a major contributor to the national food grain reserves. The Haryana Department of Irrigation & Water Resources (IWRD) oversees the maintenance and conservation of the state's water supply and drainage network, catering to irrigation, drinking water, ponds, and various industrial purposes. Haryana boasts an extensive channel network spanning 14,085 km, comprising 1,461 channels. The Bhakra grid includes 522 channels with a combined length of 5,961 km, while another 446 channels cover a total length of 4,422 km. additionally; the elevator scheme features 493 canals, stretching over 3,702 km. The state maintains a substantial drainage system; with nearly 800 drains covering 5,150 km. Haryana manages a total of 1,350 Canal Tails, of which 1,343 are fully functional. The state government, committed to realizing the 'HarKhetkoPani' vision, increased its budget for irrigation and water supply by approximately 20% in the 2018-19 fiscal years. Various irrigation measures have been implemented to preserve and enhance the efficient utilization of water resources, aligning with the evolving needs of the region. State "Per Drop More Crop Initiative."

Historically, the northwestern region of India has been characterized by intensive cultivation of wheat, maize, and millet. However, the more lucrative water-intensive paddy has gradually replaced these traditional crops in the farming landscape. State's farmers rely on groundwater, canals, and monsoon rains for irrigation. Agra, Bhakra, Ghaggar, and the Western Yamuna canals are the state's four main irrigation systems. Eighty percent of the water needed for drinking and sixty percent for irrigation is found in groundwater, respectively.

The following data gives the acknowledgement about principal crops of Haryana:

Cultivated Land Devoted to Principle Crops

Year	Wheat	Paddy	Total F/Grains	Sugarcane	Cotton	Oilseeds	Gross Area Sown
2010-11	2504	1243	4702	85	493	521	6499
2020-21	2564	1528	4796	99	740	672	6612*

Source: Department of Land Records, Haryana.

The gross area sown in the Stateduring2010-11was64.99 lakh hectares.However, during2020-21thegrossareasown in the State was likely to be 66.12lakhhectare.

Yield of Key Crops
(000'hectares)

Year	Wheat	Rice	TotalF/Grains	Sugarcane	Cotton('000Bales)	Oilseeds
2010-11	11578	3465	16568	6042	1747	965
2020-21	12393	5638	19522	8532	1823	1349

Source:-Department of Land Records, Haryana

The food-grains production in the state, the achievement has reached a remarkable level of 195.22 lakh. Tone during the year 2020-21, registering anincreaseofmorethaneighttimeascomparedto165.68 lakhtonnefood-grainsproductionin2010-11.

Component-wise Details of Targets, Achievement and Expenditure (in lakhs)

Sr. No.	Name of Component	Targets	Achievement	Exp.from01.04.2020 to 31.03.21
1.	Agriculture/ Forest	2	2	70.00

Source: Mewat Development Agency, Haryana.

Opportunities

Government support: The Haryana government has introduced several policies and initiatives to support the growth of agriculture in the state, including subsidies for farmers, investment in infrastructure, and technology transfer. State of Haryana is promoting Farm Mechanization through various Central/ State schemes i.e. "Encouraging Agricultural Mechanization for In-Situ Crop Residue Management. Under these schemes, individual farmers receive a subsidy ranging from 40-50%, and an 80% subsidy is granted for establishing Custom Hiring Centers, ensuring accessibility of expensive machinery to small and marginal farmers. “On nominal rent.

Diversification of crops: There is an increasing demand for high-value crops like flowers, vegetables, and fruits. Farmers can take advantage of this trend by diversifying their crops and adopting new technologies and practices.

Export potential: Haryana has significant potential for agricultural exports, particularly in areas such as basmati rice, wheat, and horticulture. The state government has introduced several measures to support agricultural exports, including the establishment of export promotion councils as Establishment of Electronic National Agriculture Market (E-NAM).
Every district in the state has established a District Level Export Promotion Committee (DLEPC) in order to promote exports. Comparably, at the state level, a Trade Promotion Committee has been established to examine all aspects of trade-related matters, including logistics, exports of agricultural products, and exports of services.
The government of Haryana plans to establish an Export Promotion Bureau within the state to encourage exports and offer exporters institutional support.

Climate-smart agriculture: Agroforestry, crop diversification, and conservation agriculture are climate-smart practices that farmers can adopt, even in the face of the substantial challenges posed by climate change in agriculture.

Measures taken by the Haryana Government:

Haryana is evolving as the leading horticulture hub & emerging in other associated agricultural activities, such as fishing, animal husbandry, forestry, and irrigation. There are lots of steps taken by the Haryana government to overcome the challenges faced by the farmers and to. This may include:

Crop Diversification

Crop diversification in agriculture involves shifting the regional dominance of a crop to meet the growing demand for cereals, pulses, vegetables, fruits, oilseeds, animal feed, and grass, among other products. The goal is to enhance the dynamic balance of soil health and create a more agro-friendly system. The purpose of crop diversification is to encourage the adoption of the latest technology in conjunction with sustainable agricultural practices, empowering farmers to choose alternative crops to boost productivity and income.

Conclusion & Policy Implications

In conclusion, Haryana's agriculture presents significant potential for growth and development, with opportunities in areas such as climate-smart agriculture, market linkages, and the adoption of new technologies. Research in these areas could help address some of the challenges facing the sector, such as water scarcity, soil degradation, and low productivity. By promoting research and development in agriculture besides the principal crops, Haryana can further strengthen its position as a major contributor to India's food security and help ensure the industry's long-term viability.

A country's ability to improve its agriculture is crucial to its ability to grow economically and to achieve achieving balanced development; it can be asserted that agriculture has played a crucial role in the progress of Haryana. Technology and science have aided the state in reaching new heights. Haryana has emerged as a powerful pillar of agricultural

development following the green revolution. Modern economics has a lot to say about agricultural development. Agriculture's expansion supplies the cash required for the growth of other industries, transportation, and international trade. In fact, the current situation calls for a balanced development of industry and agriculture.

Table: Average Yield of Major Commodities

Commodities	Haryana	India
All food grains	2.70	1.55
Wheat	3.75	2.54
Rice	2.66	1.86
Potatoes	13.96	16.99
Maize	1.82	1.68
Mustard	1.13	0.87
Sunflower	1.64	0.60

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

Table: Growth of Agriculture and Allied Sector in 11th Five Year Plan

Sector	2007-08	2008-09	2009-10	2010-11	2011-12 QE	Overall
Haryana						
Agriculture & Allied	-0.1	7.2	-1.4	5.4	8.3	3.9
India						
Agriculture & 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")

The 11th Five Year Plan saw an average annual growth rate for Haryana's Agriculture and Allied Sector of 3.9%, which was marginally higher than the 3.7% growth rate for all of India. In 2011–12, the growth rates showed improvement. The remarkable increase during the year, there were increases 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%) is primarily responsible for the Agriculture and Allied Sector's encouraging 8.6% growth.

As a result, it contributes to the formation of a favorable environment for economic growth in general. Economic growth so depends on how quickly agriculture develops. This development will spur potential study and the creation of development policies for Haryana. It should be highlighted that agricultural effects are reciprocal, meaning that the agricultural sector is affected by both growth acceleration and deceleration. Analyzing the expansion of the agriculture and allied sector is essential for determining how well the state economy is doing overall. This requires a wider variety of crops and goods, behavioral research, and more recent sources of information for topics that are only lightly addressed. The timely release of data and emerging trends is crucial in today's economy, which is evolving more quickly.

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