



समृद्ध किसान - समृद्ध भारत



Progressive Haryana: The Agricultural Hub of India

Progressive Haryana: The Agricultural Hub of India

February 2019

PHD RESEARCH BUREAU

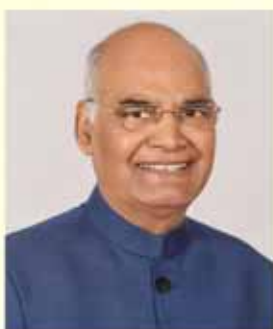
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सत्यमेव जयते

राष्ट्रपति
भारत गणतंत्र

PRESIDENT
REPUBLIC OF INDIA

MESSAGE

I am happy to know that the Government of Haryana is organising the 4th Agri Leadership Summit 2019 from February 15-17, 2019 at Haryana.

Agriculture is the backbone of the Indian economy, providing livelihood to a large segment of our population. We need to focus on opportunities in the agriculture sector and also address any concerns faced by different stakeholders. I am confident that the 4th Agri Leadership Summit 2019 will discuss opportunities for agri-start-ups and young agripreneurs and provide a roadmap for sustainable growth in the sector.

I extend my warm greetings and felicitations to the organisers and participants of the Summit. I wish the Summit every success.

(Ram Nath Kovind)

New Delhi
February 13, 2019



सत्यमेव जयते

उप-राष्ट्रपति, भारत

VICE-PRESIDENT OF INDIA

MESSAGE

I am glad to note that the 4th Agriculture Leadership Summit – 2019, is being organized by the Government of Haryana from 15 to 17 February 2019 in Gannaur, Sonapat. It is a timely initiative to provide a platform to national and international stakeholders to showcase their innovations intended to enhance agricultural productivity and fast track the growth of food processing industry in Haryana.

India has taken significant strides towards increasing the production of food grains over the last many decades. Today, India ranks high in the world in the production of milk, wheat, rice, fruits, and vegetables.

Strong Agriculture Sector is crucial to put India's economy on a sustainable & higher growth trajectory. Agriculture presents a unique opportunity to promote 'all-inclusive-growth' due to its multiplier effect on the rural economy.

My best wishes for the success of the 4th Agri Leadership Summit 2019.


(M. Venkaiah Naidu)

New Delhi
11th February, 2019.



सत्यमेव जयते

प्रधान मंत्री

Prime Minister
MESSAGE

I am pleased to learn that the 4th Agri Leadership Summit 2019 is being organized from February 15-17, 2019 at India International Horticulture Market (IIHM), Ganaur, Haryana.

Agriculture forms the backbone of our socio-economic system and the nation is indebted to the farmers. We remain firmly committed to ensure the all-round development of farmers, which is reflected in our resolve to double the income of farmers by 2022.

During the Budget, our Government announced the historic PM Kisan Samman Nidhi, under which farmers having less than five acres of land will be given Rs. 6,000 per year as support. The PM Kisan Samman Nidhi, along with other farmer-friendly measures like the Pradhan Mantri Fasal Bima Yojana, Pradhan Mantri Krishi Sinachai Yojana, Soil Health Cards, Minimum Support Prices, e-NAM, will surely benefit our hardworking farmer sisters and brothers.

The deliberations at the 4th Agri Leadership Summit will create an enabling environment for the participants to showcase the latest and best agricultural practices, resolve technical issues and bring about synergy among the various stakeholders in agriculture and its allied sectors.

Best wishes for successful deliberations at the Summit.

(Narendra Modi)

New Delhi
12 February, 2019

Dr. Mahesh Y Reddy
Secretary General
PHD Chamber of Commerce
PHD House, 4/2 Siri Institutional Area
August Kranti Marg
New Delhi- 110016



राधा मोहन सिंह
RADHA MOHAN SINGH



कृषि एवं किसान कल्याण मंत्री
भारत सरकार
MINISTER OF AGRICULTURE
& FARMERS WELFARE
GOVERNMENT OF INDIA

D.O 480/AM 13.02.2019

Message

India is now the fastest growing emerging economy in the world. Agriculture sector is one of the most important sectors of the Indian Economy. About half of the workforce still relies on agriculture as its principle source of income. Accelerating the growth of agriculture sector is therefore necessary not only to ensure food security but also to achieve a high growth trajectory.

I am delighted to note that the State Government of Haryana is organizing the 4th Agri Leadership Summit from 15-17 February 2019 in Gannaur, Sonapat, Haryana. The State has always been at the forefront in contributing to the agriculture growth in the country by adopting state-of-the art technologies and innovative agriculture practices.

This unique platform will bring together all relevant stakeholders to discuss flagged concerns and formulate strategies for expeditious and effective implementation of various central and state initiatives and policies particularly intended for giving a thrust to the participation of women and rural youth in agriculture.

The Agri Leadership Summit will provide a promising platform to all the stakeholders involved in agriculture and allied activities for exploring avenues for enhancing growth of agriculture sector, farmers, agro-processing industries and the economy as a whole.

I wish the Agri Leadership Summit 2019 all the success and hope it will accomplish its objectives.


(Radha Mohan Singh)

Hon'ble Chief Minister, Haryana

संदेश

हरियाणा के किसानों की मेहनत और सरकार द्वारा मुहैया करवाई गई ढांचागत सुविधाओं से भारत खाद्यान्न उत्पादन में आत्मनिर्भर बन रहा है। हरियाणा के किसान हमेशा ही कृषि उन्मुखी में अपनाई जाने वाली नई और नवीनतम तकनीकों को अपनाने में आगे रहे हैं।

वर्तमान में राज्य सरकार की आधुनिक कृषि और पशुपालन की तकनीकों के माध्यम से मिट्टी की उत्पादकता में बढ़ोतरी और पशुधन में वृद्धि, घाटे को कम करने के लिए कृषि ढांचागत भण्डारण में बढ़ोतरी, बाजार और कृषि के बीच के अन्तराल को कम करना तथा किसानों की आय में बढ़ोतरी को ध्यान में रखते हुए मूल्यवर्धित उत्पाद के सृजन को प्रोत्साहित करना मुख्य प्राथमिकता है। राज्य सरकार के प्राथमिक क्षेत्रों में किसानों, ग्रामीण युवा एवं महिलाओं की उच्चम दक्षता को निखारना शामिल है।

पिछले वर्षों की सफलता को देखते हुए राज्य सरकार कृषि नेतृत्व शिखर सम्मेलन का आयोजन करने जा रही है। मुझे यह जानकारी खुशी है कि चौथा कृषि नेतृत्व शिखर सम्मेलन-2019 सोनीपत के गन्नौर स्थित आईआईएचएम में आयोजित किया जा रहा है।

मुझे विश्वास है कि चौथा कृषि नेतृत्व शिखर सम्मेलन-2019 सफलता के नये आयाम स्थापित करेगा और माननीय प्रधानमंत्री द्वारा उठाए गये प्रमुख कदमों के तहत वर्ष 2022 तक किसानों की आय दोगुणा करने को आगे बढ़ाएगा।

मैं सभी हितधारकों, जो इस अद्वितीय मंच का भाग हैं, को बधाई देता हूँ और सफलता की कामना करता हूँ।

(मनोहर लाल)

Om Prakash Dhankar



D.O. No.

Agriculture, Development &
Panchayats, Mines & Geology,
Animal Husbandry & Dairying
and Fisheries Minister, Haryana.

Dated Chandigarh

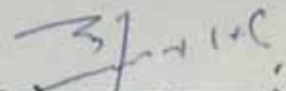
संदेश

कृषि क्षेत्र हरियाणा की अर्थव्यवस्था के अति महत्वपूर्ण क्षेत्रों में से एक है। इस क्षेत्र ने राज्य की सकल घरेलू उत्पाद दर की वृद्धि में न केवल उल्लेखनीय योगदान दिया है बल्कि भविष्य में राज्य की प्रगति में अपना योगदान बढ़ाने के लिए महत्वपूर्ण रणनीतियां भी तैयार की हैं। एक छोटा राज्य होने के बावजूद भी हरियाणा ने केन्द्रीय पुल में खाद्यान्नों की आपूर्ति में बड़ा योगदान देकर देश में अपनी एक अलग पहचान बनाई है। कृषि, कृषि-यानिकी एवं जलभराव तथा मत्स्य उपक्षेत्र-राज्य के कृषि एवं सम्बद्ध क्षेत्र का एक समावेश है।

किसानों के लिए आकर्षित विकल्प चुनने के कार्यक्रम तैयार करके कृषि को और अधिक लाभकारी व्यवसाय बनाने के लिए राज्य सरकार निरंतर प्रयास कर रही है। कृषि आय में वृद्धि हो इसके लिए राज्य में कृषि एवं एग्रो व्यवसाय को बढ़ावा देने के लिए नई-नई योजनाओं एवं कार्यक्रमों को नियमित रूप से लागू किया गया है। इससे कृषि उत्पादकता, गुणवत्ता, मूल्यवर्धन, विपणन सुविधाएं, निवेश एवं भागीदारिता बढ़ना भी सुनिश्चित हुई हैं।

मेरे लिए यह अत्यंत खुशी व गर्व का विषय है कि राज्य सरकार ने वर्ष 2019 के लिए कृषि नेतृत्व शिखर सम्मेलन के चौथे चैप्टर का आयोजन करने की पहल की है। मुझे आशा है कि यह सम्मेलन स्टैक होल्डर्स को वर्तमान योजनाओं, राज्य सरकार की नीतियों एवं कदमों को बेहतर ढंग से समझने का एक अवसर प्रदान करेगा और वे इस अवसर का अधिक से अधिक लाभ उठाएंगे तथा यह सफलतापूर्वक हरियाणा के कृषि क्षेत्र को नई बुलंदियों पर ले जाने में सार्थक योगदान देगा।

मैं समारोह के सफल आयोजन के लिए अपनी शुभकामनाएं प्रेषित करता हूँ।


(ओम प्रकाश धनखड़)

**SANJAY AGARWAL
SECRETARY**



भारत सरकार
कृषि एवं किसान कल्याण मंत्रालय
कृषि, सहकारिता एवं किसान कल्याण विभाग
Government of India
Ministry of Agriculture & Farmers Welfare
Department of Agriculture, Cooperation
& Farmers Welfare



MESSAGE

The Government of India has initiated several policies and schemes for enhancing crop and livestock productivity, soil health and for doubling the farmer's income by 2022. In the recent budget, the Government announced direct income support to 12 crore small and marginal farmer families at the rate of Rs.6,000 per annum under PM Kisan Samman Nidhi [PM-KISAN] to bring in transparency and enhance farm incomes.

The State of Haryana is one of the fastest growing agrarian states. The agriculture sector contributes to around 19% of the state's GVA. Being self-sufficient in agricultural production, the state holds tremendous potential for investors to invest in agrobased industries.

I am pleased to note that the State Government is continuously taking steps towards higher value addition and enhanced processing in agriculture and allied sectors.

The noble initiative of State Government in organizing the Agri Leadership Summit, 2019 is highly appreciable. This will promote awareness amongst stakeholders about the vast investment opportunities underlying agriculture and food processing sector of Haryana. This will create better understanding of new agricultural technologies amongst farmers. The Agri Leadership Summit 2019 would thus contribute towards sustainable development of the state.

I wish the Agri Leadership Summit 2019 a grand success.


[Sanjay Agarwal]

February 12, 2019

D. S. Dhesi, IAS



D.O. No.

Chief Secretary, Haryana,
Chandigarh - 160 001.

E.mail : cs@hry.nic.in

Dated

MESSAGE

Haryana is one of the leading industrial states in the country and at the same time holds a place of significance in terms of agriculture production. This has been made possible due to the overall conducive business environment that the State offers for micro, small and medium scale industries facilitating ease of doing business, fiscal incentives and skill development for the promotion of agro-based food processing industries as an engine of growth.

The State Government is working continuously towards betterment of agriculture and industry in the State. The aim is to promote sustainable agriculture that will not only give a boost to industrial output but also provide food security and increase in income of millions of farmers. Several steps are being taken to enhance the employability of the rural youth and women in agriculture sector, motivating them and incubating them into agri entrepreneurs and thus bring about income sustainability in the rural economy.

I am sure that the 4th Agri Leadership Summit, 2019 will provide an awareness platform for the stakeholders about the present government schemes and developmental policies and result in generating agri leaders of the future.

I extend my best wishes for the success of the event.


(D.S. Dhesi)

Navraj Sandhu, I.A.S



D.O No: PS/ACC Agri/2019/14
Additional Chief Secretary to
Government Haryana,
Agriculture & Farmers Welfare Department,
Dated 11/02/2019

Message

Haryana is known for its progressive agriculture policies and practices. State Government had provided a strong infrastructure and facilities for increasing productivity and marketing of agricultural products.

Today, many of farmers are leading in production of agriculture and horticulture crops. These Agri-leaders need to be supported with technical knowledge. The State is poised for ushering in a new era of Agri- entrepreneurship led by farmers and FPOs. We want to upgrade our farmers in the value chain so that they can access better income.

I believe that the continued efforts of the state government in organizing the Agri. Leadership Summit over the last 3 years will help agriculture growth with a special focus on agribusiness sustainable agriculture, micro irrigation, organic farming, increasing productivity.

Agri-Leadership Summit has been a successful step in linking farmers with the market.. I believe that this 4th leadership summit will further strengthen this movement towards farmers' entrepreneurship in agribusiness.

Hope the event will be grand success.


(Navraj Sandhu)



KRISHNA GAHLAWAT,
EX. MINISTER

No. 33

Date: 11-02-2019

CHAIRPERSON
HARYANA STATE AGRICULTURAL MARKETING BOARD
C-6, SECTOR-6, PANCHKULA - 134 109 (HARYANA)
Ph. : (O) 0172-2560092

**Message from Smt Krishna Gahlawat, Chairman, Haryana State
Agriculture Marketing Board**

The state of Haryana is being proudly known as the "Bread Basket of India" contributing 45% of rice and 65% of wheat to the central pool and more than 5% to total food production of the country. It has been in the forefront in terms of the adoption of latest technologies in agriculture and is also counted as one of the leading states for Agriculture production in the country. Haryana is self-sufficient in food production and the second largest contributor to India's central pool of food grains.

To move forward, the state has adopted agriculture best practices that ensure the production of quality agriculture produce and attract better prices in national and international markets. Several initiatives have been taken by the Haryana State Agriculture Marketing Board to enable farmers to sell fresh vegetables and fruits directly to the consumers and get remunerative prices for their produce.

I am sure that the 4th Agri Leadership summit will be a guiding light for the farmers to grow up as Agriculture leaders and attain a status of the National Prosperous Farming Community.

Best wishes for the Agri Leadership Summit to attain a grand success.

Krishna Gahlawat
(Krishna Gahlawat)



समृद्ध किसान, हमारी पहचान

HARYANA STATE AGRICULTURAL MARKETING BOARD

MANDI BHAWAN, C-6, SECTOR-6, PANCHKULA-134 109 (HARYANA)

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No. PSCA-109

Dated 12.02.2019

Haryana is known as the 'food bowl' of India and provides promising prospects in the agriculture sector. The Haryana State Agricultural Marketing Board has been tasked with promoting the agriculture marketing in the State. I am happy to share that the HSAMB has been successfully implementing this task through its wide network of mandis for the past four decades.

Taking forward the vision of the Hon'ble Prime Minister of India of doubling the farmers' income, the HSAMB has been successfully implementing schemes like the e-NAM and the Bhavantar Bharpai Yojna (BBY). The promotion of direct marketing and elimination of the middlemen has made positive changes in the farmers income.

The 4th Agri Leadership Summit is an opportunity wherein the HSAMB can showcase its achievements and can also learn from the farmers and agri leaders. This Summit provides an excellent platform wherein various stakeholders came together and there is a positive sharing of ideas. I am very excited to be hosting this event and extend a very warm welcome to one and all.

(Dr. J. Ganesan, IAS)



Progressive Haryana: The Agricultural Hub of India



Shri Rajeev Talwar

From President's Desk, PHD Chamber

Agriculture sector plays a significant role in providing food security, reducing poverty and sustaining economic growth. The sector forms important demand supply linkages with industry and service sectors. The sector contributes around 16% to India's GVA and provides livelihood to significant proportion of the population.

The government of India has announced an agro-export policy to double exports from around USD30 billion to USD60 billion in next two years. Further, the government has given major thrust to doubling farmers' income by 2022. I am confident that these reform measures would lead to significant outcomes and enhance the productivity of agriculture sector, going forward.

Haryana is an agrarian state and one of the key contributors to the national food basket. The state enjoys top position in the production of basmati rice.

The Government of Haryana has been regularly endeavoring to give a fillip to the agriculture sector by undertaking various initiatives and schemes for giving an impetus to agriculture and allied sectors in the state.

The state government's initiative of organizing an Agri Leadership Summit, 2019 is highly appreciable. My best wishes for the success of the Agri Leadership Summit 2019.

(Rajeev Talwar)





Progressive Haryana: The Agricultural Hub of India

From Senior Vice President's Desk, PHD Chamber



Shri D K Aggarwal

The state of Haryana has made a special place for itself in the agriculture sector of India. The state is self sufficient in food production and is the second largest contributor of food grains to the central pool. Haryana is blessed with diverse cropping pattern and agro-ecology. The state is also emerging as one of the leading states in the field of horticulture. The state holds tremendous potential for the agro-based and food processing industries.

The government of Haryana has given high priority to the agriculture and allied sector and has taken commendable steps to promote inter cropping with agro forestry, farm mechanization and value addition of crop produce.

I believe that the continued efforts of the state government in organizing the Agri Leadership Summit over the last 3 years will help agriculture in Haryana getting a status of Sustainable Agriculture.

At this backdrop I am sure that the state will continue its proactive measures to boost the agriculture sector through Agri Leadership Summit 2019.

I wish the Agri Leadership Summit 2019 a grand success.

(DK Aggarwal)





Progressive Haryana: The Agricultural Hub of India

From Vice President's Desk, PHD Chamber



Shri Sanjay Aggarwal

Haryana has witnessed a significant growth path over the years. The state is being proudly known as the "Bread Basket of India". It has been in the forefront in terms of the adoption of latest technologies in agriculture and is also counted as one of the leading states for Agriculture production in the country. The state is consistently encouraging farmers to adopt latest farm technology to increase the farm sector output.

Considering, the susceptibility of agriculture to natural risks and uncertainties, the State Government has taken commendable steps to mitigate the risks in agriculture.

The state government is taking strides in the direction of producing fine quality of crop produce that will attract higher prices not only in the domestic markets but will also can gain popularity on the global platforms.

I am sure that the Agri Leadership Summit, 2019 would support the state government's objective to make farming a profitable enterprise and give a boost to the agricultural sector of the state. My best wishes for the success of the Agri Leadership Summit 2019.

(Sanjay Aggarwal)





Progressive Haryana: The Agricultural Hub of India

From Secretary General's Desk, PHD Chamber



Dr Mahesh Y Reddy

Haryana is a very progressive state in the adoption of policy environment and a leading state for setting the pace for other states in the growth and productivity levels of agricultural produce.

The agri-infrastructure linkages such as cold chain, storage and warehouses and road connectivity are important for the growth and productivity of the agriculture sector and to reduce the wastages. Therefore, state of the art technology plays a very important role in the adoption of the dynamic schemes of the central government and state governments for fruitful outcomes and welfare creation for the masses at the ground level.

As Haryana is always at the forefront of implementation of policy environment, the state focussed on organizing the 4th Agri Leadership Summit to connect the farmers, government, academia, intellectuals and other stakeholders to come on stage to share the expertise and thought process and to move ahead for the progress of the state to the next level with the improved incomes of farmers.

PHD Chamber has its strong linkages with the government, industry stakeholders, academia, experts, socio-economic segments and farmers; the Chamber has provided its full hand-holding to the dynamic state government to make this year's Agri Summit, a grand success and to make visible the fruitful outcomes of this noble initiative of state government.

(Dr Mahesh Y Reddy)





Progressive Haryana: The Agricultural Hub of India



Shri Pranav Gupta

From Chairman's Desk, Haryana Chapter, PHD Chamber

Haryana has become a food surplus state due to its strong agri-infrastructure facilities and agriculture research and development support. The state contributes significantly to India's agricultural exports. The state's vision 2030 is appreciable as it focuses on modernization of irrigation systems, persuasion of crop diversification, timely availability of quality feedstock at subsidized rates and introduction of modern technologies, among others.

The continued efforts of the state government in organizing the Agri Leadership Summit over the last few years are appreciable. The engagement of all the stakeholders in the summit, the government, academia, industry and growers is encouraging for further policy plan for an inclusive and balanced growth of the sector and the rural economy.

I am hoping that this Summit would support in the government's effort in boosting agriculture sector of the state. My best wishes for the success of the Agri Leadership Summit 2019.

(Pranav Gupta)





समृद्ध किसान - समृद्ध भारत



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Abbreviations

A&D	Aerospace & Defence	LIG	Lower Income Group
AE	Advance Estimates	LOI	letter of Intent
Agri	Agriculture	MOFPI	Ministry of Food Processing Industries
BE	Budget Estimate	MoU	Memorandum of Understanding
BPM	Business Process Management	MRO	Maintenance, Repair and Overhaul
BRAP	Business Reform Action Plan	MSME	Micro, medium and small enterprise
CAGR	Compound Annual Growth Rate	MW	Mega Watt
Capex	Capital Expenditure	NCR	National Capital Region
CB	Commercial Banks	NFSM	National Food Security Mission
CCDP	Crop Cluster Development Programme	NIFTEM	National Institute of Food Technology Entrepreneurship and Management
CD	Credit to Deposit	NNI	Net National Income
CEO	Chief	NOC	No Objection Certificate
CETP	Common Effluent Treatment Plant	NSDP	Net State Domestic Product
CGTMS E	Credit Guarantee Fund Trust for Micro and Small Enterprises.	OEM	Original Equipment Manufacturer
CLU	Change of Land Use	PD	Primary Deficit
CPCB	Central Pollution Control Board	PE	Provisional Estimates
Cr	Crore	PMFBY	Pradhan Mantri Fasal Bima Yojana
DFC	District Facilitation Centers	PPP	Public Private Partnerships
DMIC	Delhi Mumbai Industrial Corridor	QE	Quick Estimates
DSR	Direct Seeding of Rice	R&D	Research and Development
EDW	External Development Works	RBI	Reserve Bank of India
e-NAM	National Agriculture Market	RCD	Regional Cooperation for Development
EPP	Enterprise Promotion Policy 2015	RD	Revenue Deficit
ESDM	Electronics System Design and Manufacturing	RE	Revised Estimate
EWS	Economically Weaker Sections	RKVY	Rashtriya Krishi Vikas Yojana
FAM	Familiarization	ROB	Road Over Bridges





Progressive Haryana: The Agricultural Hub of India

FBO	Fixed Base Operator	RRB	Regional Rural Banks
FDI	Foreign Direct Investment	Rs	Rupee
FIGs	Farmer Interest Groups	SAARC	South Asian Association for Regional Cooperation
FPOs	Farmers Producer Organization	SEZ	Special Economic Zones
FY	Financial Year	Sq. km	Square Kilometer
GDP	Gross Domestic Product	TDR	Transfer of Development Rights
GFCF	Gross Fixed Capital Formation	UGPL	Under Ground Pipe Line
GFD	Gross Fiscal Deficit	USD	United States Dollar
GOI	Government of India		
GSDP	Gross State Domestic Product		
GSVA	Gross State Value Added		
HAFED	Haryana State Co-Op. Supply & Marketing Fed.		
HLRDC	Haryana Land Reclamation & Development Corporation		
Hon'ble	Honorable		
HSAMB	Haryana State Agricultural Marketing Board		
HSDC	Haryana Seeds Development Corporation Ltd.		
HSCARD B	Haryana State Cooperative Agriculture and Rural Development Bank Ltd		
HSDM	Haryana Skill Development Mission		
HSI IDC	Haryana State Industrial and Infrastructure Development Corporation		
IBEF	India Brand Equity Foundation		
IGI	Indira Gandhi International		
IT	Information Technology		
ITeS	Information Technology enabled Services		
IWRD	Irrigation & Water Resources Department, Haryana		
Km	Kilometer		





Progressive Haryana: The Agricultural Hub of India

Executive Summary

Haryana is known as 'bread basket' of India. The state has diverse agro-ecology and cropping pattern. The main agricultural crops produced in the state are rice, wheat, sugarcane, cotton, oilseeds, pearl millet, gram, and barley. More than 60% export of Basmati Rice from India takes place from Haryana. Over the years, Haryana has pursued progressive policies for strengthening agriculture by enhancing investments, promoting research and development system, public distribution system, irrigation development, land acquisition policy, subsidies towards credit and power use, infrastructure like road, market, power generation and supply, etc.

The adoption of such progressive state of-the-art policies combined with receptive farming community has contributed to a very steady growth for the State in agriculture. The share of agriculture sector (primary sector) in the state's GSVA is around 19.5%. The sector has exhibited tremendous growth of 7% in 2016-17 from 3.2% in 2015-16. Haryana is emerging as one of the leading states in the field of horticulture. The state is also striving towards enhanced growth of other allied activities of agriculture such as fisheries, animal husbandry, forestry, irrigation. Going ahead, the state is promoting diversification in the farm sector, improving research and development system and upgrading infrastructure as per international standards to harness the emerging opportunities in the agriculture sector of the state.

The state is taking long strides in agro forestry area. The Forest Department has been distributing 2.5 crore seedlings every year to the farmers and other tree growers free of cost to promote agro-forestry. The Government of Haryana introduced Agri-Business and Food Processing Policy 2018 for the state that aims to give impetus to the Food processing industry in the state. The policy aims to create greater employment opportunities across the entire food value chain, thus promoting agriculture and rural prosperity. Haryana has a vision of ensuring no malnutrition amongst children and adequate, safe and nutritious food for all residents of Haryana, particularly women of reproductive age, children and extra-vulnerable populations, by making farming efficient, economically viable, progressive, and sustainable and climate resilient.

The Government of Haryana has committed itself to improving soil depletion while building on its efforts to reduce the use of pesticides and fertilizers. The state government has introduced Soil Health Cards, which have been issued to farmers to regulate the amount and type of fertilizers which can be used on their lands. To improve agricultural productivity, the state is succeeding in motivating farmers to adopt latest farm technology to increase the farm sector output. Haryana is progressing towards developing climate and adaptation measures. In agriculture, the state is scaling up climate resilient agricultural practices with 100 climate smart villages. In irrigation, the state is constructing injection wells as a recharging scheme throughout the state.





समृद्ध किसान - समृद्ध भारत



Progressive Haryana: The Agricultural Hub of India

In a nutshell, Government of Haryana is focused on improving the infrastructure for agriculture in the state. The state is making timely efforts by initiating several policies and programmes to boost the productivity of agriculture and allied activities, mitigate risk by providing credit facilities to farmers, support agri-preneurs, addressing storage facilities for cereals, and pulses, among others. These reforms will boost the rural development, agricultural production and will also uplift the living standard of the farmers.

Going ahead, we look forward to the effective policy interventions and strong agricultural initiatives that would pave the way to achieve a high and sustainable economic growth in the state in the coming times.





Progressive Haryana: The Agricultural Hub of India

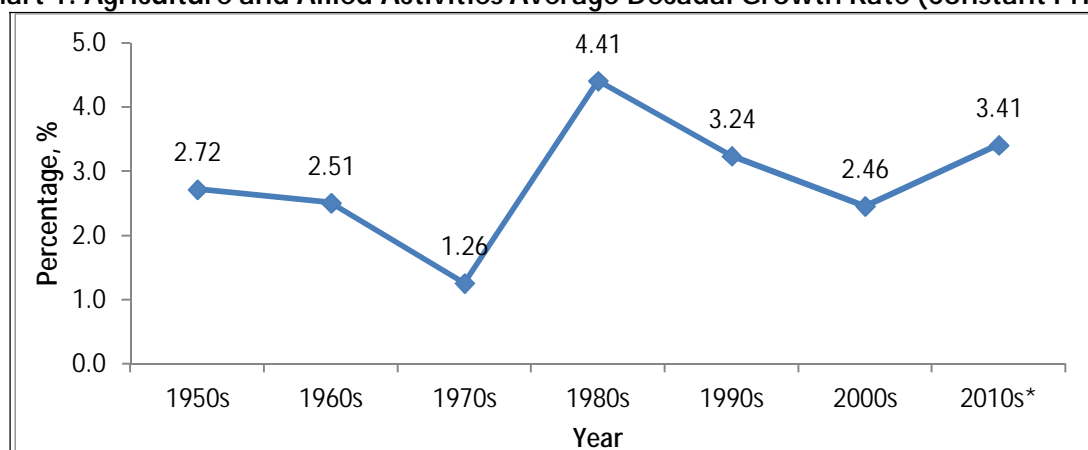
1. Agriculture Sector in India

Agriculture sector has a significant role to play in food security, reducing poverty and sustaining the growth of India. Agriculture sector & allied activities encompass livestock, fishery, cropping, forestry, animal husbandry & dairying, irrigation, horticulture, logging. Agriculture sector has a major role in sustaining the livelihoods of majority of population. Agriculture sector is the backbone of the industry and services sector.

To harness the increased productivity from agriculture an increased focus is being led on quality seeds and planting materials, protected cultivation, high density plantation, rejuvenation, precision farming and agricultural mechanization. Agriculture sector is characterized by volatility in weather and climatic conditions. In the recent past, growth rates of agriculture have been fluctuating mainly due to the deficiency in rainfall, since 55% of agriculture in India is rainfall dependent. Thereby a risk lingers on production, prices and policy. A significant shift in the agriculture sector could widen the range of activities to improve the productivity, protect the harvest and sustain the growth.

India is a tropical country. The country is endowed with multiple climatic conditions and has a diversified agrarian sector. Over the years, in India, the agricultural sector has witnessed a gradual shift in terms of increasing share of livestock in Gross Value Added in agriculture as compared to cropping. Such structural changes taking place in agriculture sector imply towards reorientation of policies in terms of strengthening agricultural value chain with sufficient focus towards dairying & livestock development along with gender specific interventions. The agriculture and allied sector of India has shown tremendous growth over the years. The average decadal growth increased to 3.41% for the decade of 2010-2017.

Chart 1: Agriculture and Allied Activities Average Decadal Growth Rate (Constant Prices)



Source: PHD Research Bureau, Compiled from RBI and other sources; *depicts average decadal growth till 2017-18; Note: Growth of 2010-11 and 2011-12 taken at base year 2004-05





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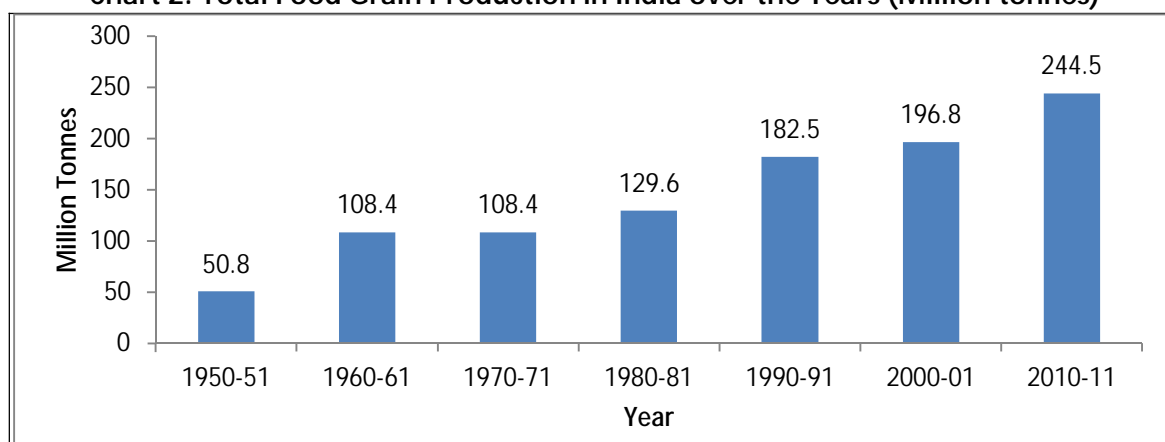
The agriculture sector works on cause and effect principle. Any change in the weather or climate tends to bring change in the productivity of agriculture and its allied sector and on the price of agricultural commodities that have direct impact on the farmer's income. So, it becomes necessary to protect farmers from vagaries of nature, at the same time it becomes important to adopt sustainable farming practices. With increasing urbanization, more and more men are migrating from rural to urban areas in search of better opportunities and livelihood. Hence, women are staying back in villages and are playing a crucial role in agricultural development and allied fields. The women in agriculture are playing multiple roles as cultivators, entrepreneurs, farmers and labourers.

It becomes mandatory to address differential access of women to resources like land, credit, water, seeds and market. To support the women in agriculture, the Government of India has been playing an encouraging role. The government has been introducing schemes, and policies to improve the entitlement of women farmers. The following measures have been taken for mainstreaming women in agriculture sector:

- 30% of budget allocation in all ongoing schemes, programmes and development activities is being earmarked for women beneficiaries.
- Initiation of women centric activities to ensure benefits of various programmes and schemes.
- Connecting women for availing micro-credit through Self-help groups for capacity building activities.

The total foodgrain production in India over the years has increased substantially. The food grain production was 244.5 million tonnes in 2010-11 in comparison to 50.8 million tonnes in 1950-51.

Chart 2: Total Food Grain Production in India over the Years (Million tonnes)



Source: PHD Research Bureau, Directorate of Economics and Statistics, Ministry of Agriculture, Government of India

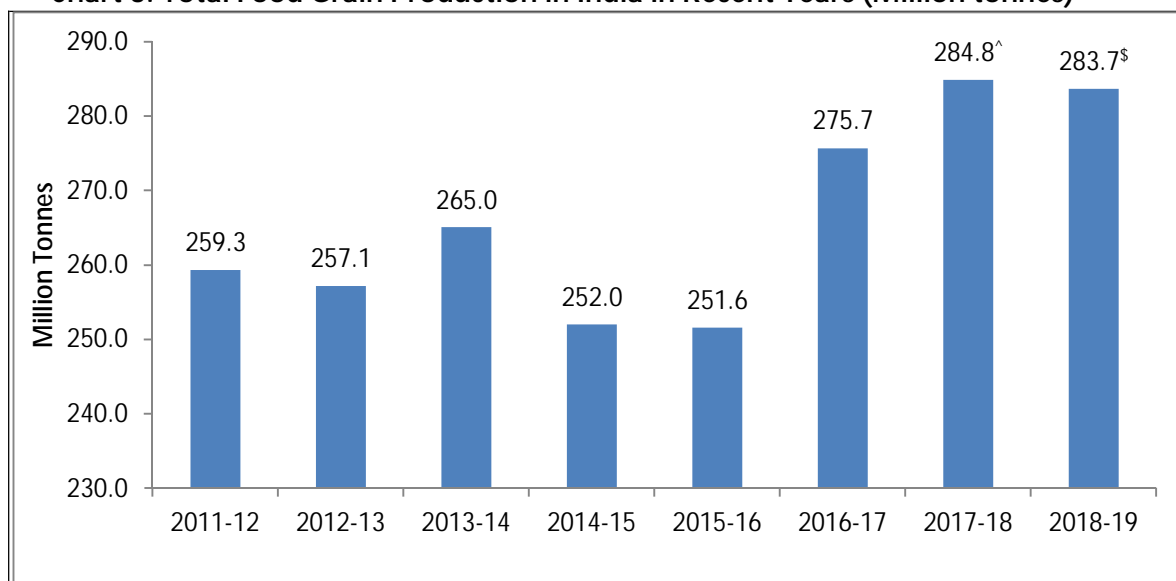




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The total foodgrain production in India in the recent years has depicted an increasing trend. In 2017-18 (4th AE), the total foodgrain production in India was maximum at 284.8 million tonnes .

Chart 3: Total Food Grain Production in India in Recent Years (Million tonnes)



Source: PHD Research Bureau, Compiled from various sources; [^]depicts 4th AE; ^{\$} depicts Targets for 2018-19

India has huge potential for crop diversification. Crop diversification aims at making farming a sustainable and profitable venture. A diversified cropping pattern would mitigate the risk faced by farmers such as harvest losses and price shock. In India, crop diversification is being encouraged to improve soil health, productivity and thereby profitability of cultivation. The government of India is tapping the opportunity of diversifying agriculture into high value crops.

Further, dairying and mixed crop-livestock farming system is an important secondary source of income for millions of rural families and has assumed the most important role in providing employment and income generating opportunities particularly for marginal and women farmers in India. Therefore, the marginal farmers in India prefer to have productive assets like livestock and poultry, as part of their income diversification strategy. This supplements incomes, provide replacement for manual labour, supplement nutritional needs and can also be used as collateral in times of financial distress.

India continues to be the largest producer of milk in world. Government of India is making efforts for strengthening the dairy sector through various Central sector Schemes like National Programme for Bovine Breeding and Dairy Development, National Dairy Plan and Dairy Entrepreneurship Development Scheme. It is noteworthy that women have played a key role in the development of the dairy sector as producers, women cooperatives and in marketing. The poultry production in India has emerged from an unscientific farming practice to commercial production system with





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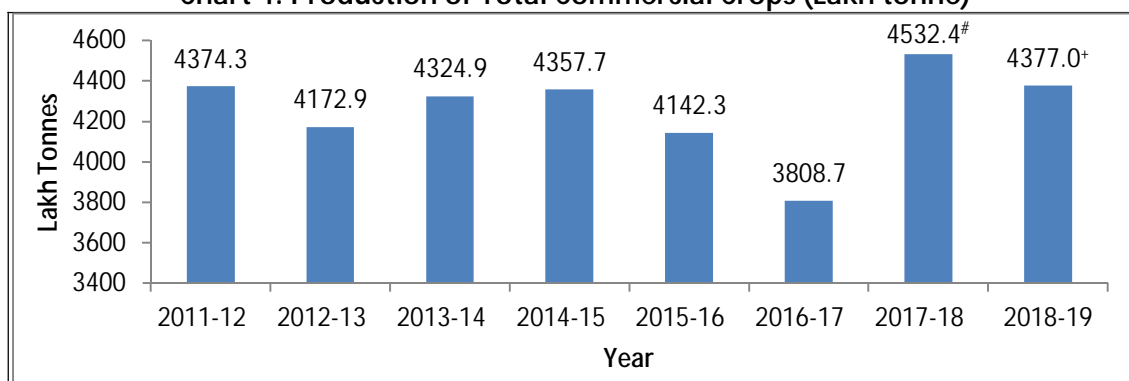
state-of-the-art technological interventions. India is the second largest producer of fish and also the second largest producer of fresh water fish in the world.

Input management in agriculture is an important tributary. Managing the inputs in correct combinations could bring about increased productivity in agriculture without losing soil fertility and causing environmental damages. Therefore, in India, the concerned agriculture departments are making it mandatory for farmers to adopt innovative technologies and inputs to improve productivity. In this context, education status of farmers becomes important. The level of education of farmers has a huge impact on the capacity of farmer to adopt the methods of cultivation. With large number of small and marginal farmers, several steps are being taken in the direction of educating farmers.

Adequate coverage of irrigation in the Indian agriculture could reap abundant results. To increase the coverage of irrigated area, the Government has launched the Prime Minister's Krishi Sinchai Yojana in 2015. The area being brought under micro-irrigation has increased to 8.4 lakh hectare during 2016-17. An increased amount is being disbursed for initiative of Per drop More Crop. Indian farmers have been flexible in adopting farm mechanization that saves time and labour, reduce the post-harvest losses and boost crop output and farm income. Skill development in agriculture is playing a proactive role. Awareness programme, farmers training, exposure visit, etc. are being provided to farmers.

Farmers are being trained to adopt latest technologies on production and post-harvest management training is being provided to women and youth. Through such considerable initiative of farm mechanization and skill development, Indian tractor industries have emerged as the largest in the world. With increasing population migrating to urban areas from rural areas, it becomes mandatory to adopt farm mechanization to sustain agriculture. With such flexible adoption of latest farm technologies, the production of commercial crops in India has increased over the years. In 2017-18, the total production of commercial crops has increased to 4532.4 lakh tonnes.

Chart 4: Production of Total Commercial Crops (Lakh tonne)



Source: PHD Research Bureau, Compiled from various sources; Note: The commercial crops include nine oilseeds, sugarcane, cotton, jute & mesta; # depicts 4th AE; + indicates target for 2018-19





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Consolidation of land holdings is another important aspect of Indian agriculture. With fragmented, small and marginal land holdings, government has been taking steps to consolidate the land holdings to reap the benefits of farm mechanization.

Credit forms an important input for improving agriculture productivity. Access to credit enables the farmer to purchase inputs on cash tide over periods till receipt of payment from sale of produce, and also to invest to enhance productivity. The flow of credit in absolute terms has improved substantially over the years in the agriculture sector. However, the predominance of informal sources of credit for farmers is a concern. In India, farmers are being encouraged to break the shackles of reluctance and insure their crops. Only a small fraction of farmers or agricultural households get coverage against their crops. There are several reasons for low crop insurance penetration. The most prominent reason is the lack of awareness among farmers about crop insurance, lack of knowledge about the availability of the facility for the harvested crop and limited reach of crop insurance to selective geographical areas.

Steps are being taken on part of the concerned Ministries and agriculture departments about generating sufficient awareness on the coverage of crops, rate of crop insurance and simplification of procedures and widening the reach to multiple geographical areas. The Pradhan Mantri Fasal Bima Yojana yield index based crop insurance scheme launched in 2016 has made substantial progress with more ground coverage. The PMFBY provides comprehensive coverage or risks from pre-sowing to post harvests against natural non-preventable risk. The government has initiated policies to promote Climate Smart Agriculture (CSA).

Agricultural credit is critical input to achieve high agricultural productivity. The Government of India disburse significant amount to meet various obligations to provide short term crop loan to farmers and post-harvest storages loans. This credit helps in delinking farmers from non-institutional sources of credit. A slight change in the weather or rainfall tantamount to significant changes in the productivity of the agriculture sector. Therefore, the agriculture sector presents risk mitigating opportunities that could be capitalized upon.

Marketing the agricultural product is an important aspect of making agriculture a profitable venture. In this regard, an electronic national Agriculture market (e-NAM) has been launched by government in April 2016. The e-Nam aims at integrating the dispersed APMCs through an electronic platform and enable price discovery in competitive way to the advantage of farmers. Further market infrastructure is being set up and huge investments are been drawn for mobile vending cart, retail outlet, primary and wholesale markets. A recent attention is being laid on creating direct market/farmers market.

The department of agriculture has implemented various schemes to boost the income and production in the agriculture sector such as Soil health Card (SHC), Neem Coated urea, Paramparagat Krishi Vikhas Yojana (PKVY), Pradhan Mantri Krishi Sinchai Yojana (PMKSY), National





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Agriculture Market Scheme (e-NAM), Pradhan Mantri Fasal Bima Yojana (PMFBY), Interest Subvention Scheme etc. With each year passing by, the budgetary allocations for the agriculture section have been increasing. Government is proactively working for promoting Post Harvest Management through Cold Storage (CS), cold chain supply including pack houses, ripening chamber, reefer vehicle, etc. The government is working to double the income of farmers by 2022 for which it has launched several initiatives that cover from seed to marketing.

Agriculture sector has attracted several research and experimentation over the years. Agriculture Research and development is the source of innovation in agriculture which is necessary to sustain agriculture productivity in the long run. The country has progressed in protecting new agricultural innovations by filling patent applications. A total of 209 new varieties/hybrids tolerant to various biotic and abiotic factors have been developed for cereals, pulses, oilseeds, commercial and forage crops. The food security system in India is managed by Centre and States that involves centralized and decentralised procurement of foodgrains through price support operations, allocation and distribution of foodgrains at reasonable prices to consumers/beneficiaries through TPDS (Targeted Public Distribution System) and the maintenance of buffer stocks for price stabilization and for food security, to ensure monthly releases of foodgrains for the Welfare Schemes and to augment supply in eventualities like emergency situations arising out of unexpected crop failure, natural disasters, etc.

Government has taken many initiatives over the years to support the farmers and growth of agriculture sector of India. Foodgrains, pulses and minor crops are procured at the Minimum Support Price (MSP) fixed by the Government. The National Food Security Act, 2013 (NFSA) is an important initiative for food security of the people. Food Corporation of India (FCI) sells excess stocks out of Central Pool through Open Market Sale Scheme (Domestic) (OMSS-D) in the open market from time to time at predetermined prices to enhance the supply of food grain. In addition, the government of India provides large and increasing amounts of subsidy on food grains for distribution under the TPDS/NFSA and other nutrition-based welfare schemes and open market operations.

The agriculture sector in India is experiencing structural changes which are opening up new challenges and opportunities. The Government has initiated reforms in the field of agricultural marketing, given a big push to the use of technology in agriculture, and also adopted Direct Benefit Transfer (DBT) mode for timely delivery of extension services, credit and other inputs to small and marginal farmers. The central priority of the government is to provide opportunities for farmers to diversify their income generating opportunities to reduce the various risks by facilitating the development of agricultural sub-sectors like livestock and fisheries. The transformation of agriculture and allied sector is about to happen by way of appropriate policy interventions related to prices, trade, adoption of Climate Smart Agriculture, increased focus on small, marginal and women farmers. Agriculture sector will remain an engine of broad based growth which will reduce inequalities and provide food security.





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1.1 Agriculture Export Policy 2018

In order to provide an impetus to agricultural exports, the Government has come out with a comprehensive "Agriculture Export Policy" aimed at doubling the agricultural exports and integrating Indian farmers and agricultural products with the global value chains. Agriculture Export Policy, 2018 was released by the Union Cabinet chaired by Hon'ble Prime Minister Shri Narendra Modi in December 2018. The Agriculture Export Policy has the following vision:

"Harness export potential of Indian agriculture, through suitable policy instruments, to make India global power in agriculture and raise farmers' income."

Objectives of Agriculture Export Policy 2018

- To double agricultural exports from present USD 30+ Billion to USD 60+ Billion by 2022 and reach USD 100 Billion in the next few years thereafter, with a stable trade policy regime.
- To diversify export basket, destinations and boost high value and value added agricultural exports including focus on perishables.
- To promote novel, indigenous, organic, ethnic, traditional and non-traditional Agri products exports.
- To provide an institutional mechanism for pursuing market access, tackling barriers and deal with sanitary and phyto-sanitary issues.
- To strive to double India's share in world Agri exports by integrating with global value chain at the earliest.
- Enable farmers to get benefit of export opportunities in overseas market.

Elements of Agriculture Export Policy- The recommendations in the Agriculture Export Policy have been organized in two categories – Strategic and Operational.

Table 1: Elements of Agriculture Export Policy

Strategic	Policy measures
	Infrastructure and logistics support
	Holistic approach to boost exports
	Greater involvement of State Governments in Agri exports
	Focus on Clusters
	Promoting value-added exports
	Marketing and promotion of "Brand India"
Operational	Attract private investments into production and processing
	Establishment of strong quality regimen
	Research & Development
	Miscellaneous





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The agriculture export policy aims at addressing a range of issues that could potentially propel India into the top bracket of agricultural exports. The integration in the global value chain is one of the most certain methods of adopting the best agricultural practices along with attaining productivity gains and cost competitiveness.

Table 2: Indian Agriculture Sector So Far

1	GVA from Agriculture Sector (Constant Prices) (FY2019)*	Rs 1842873 Crore
2	Agriculture Sector Growth (FY2019)*	3.8%
3	Yield (Kg./Hectare)	2153
4	Net Sown Area (FY2015)	140.1 Million Hectare
5	Gross Irrigated Area (FY2015)	96.5 Million Hectare
6	Foodgrains Production (target 2018-19)	283.7 Million Tonnes
7	Rice Production (FY2018) [!]	112.9 Million Tonnes
8	Wheat Production (FY2018) [!]	99.7 Million Tonnes
9	Pulses Production (FY2018) [!]	25.2 Million Tonnes
10	Oilseeds [%] Production (FY2018) [!]	31.3 Million Tonnes
11	Cotton Production (FY2018) [!]	34.8 Million Tonnes
12	Sugarcane Production (FY2018) [!]	376.9 Million Tonnes
13	Area Under Foodgrain Area	128 Million Hectare
14	Area Under Rice (FY2017)	43.2 Million Hectare
15	Area Under Wheat (FY2017)	30.6 Million Hectare
16	Area Under Oilseeds (FY2017)	26.2 Million Hectare
17	Area Under Cotton (FY2017)	10.8 Million Hectare
18	Area Under Sugarcane (FY2017)	4.4 Million Hectare

Source: PHD Research Bureau, compiled from various sources; Agricultural Statistics Division; [!] depicts 4th AE; [%] depicts nine oilseeds; * 1st Advanced Estimates of National Income 2018-19





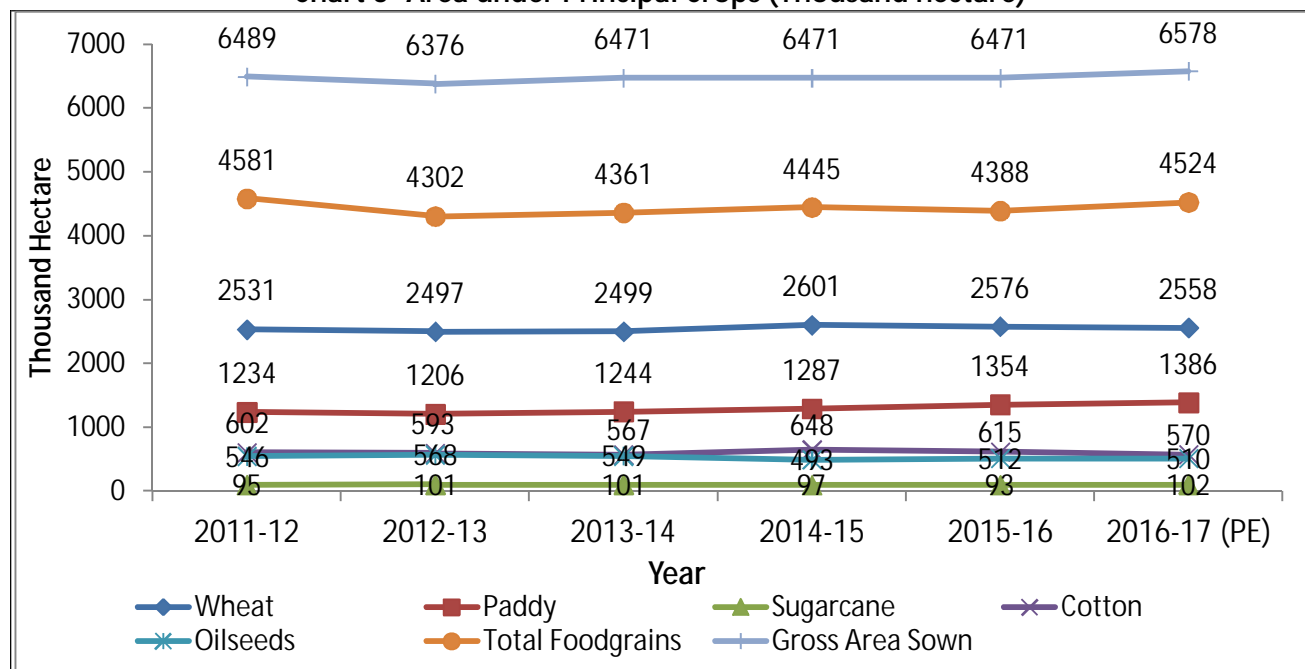
Progressive Haryana: The Agricultural Hub of India

2. Agriculture Sector in Haryana

Agriculture is the primary sector of Haryana and majority of the population is directly or indirectly dependent on agriculture and its allied activities. Agriculture has been the top priority for the state since decades. The strong infrastructure facilities like metalled roads, rural electrification, network of canals, development of market yards etc. were created that provide the needed impetus to agriculture development in the State. Such facilities coupled with agriculture research support and excellent extension network to disseminate the information related to improved farm practices for farmers yielded tangible results.

During 2016-17 (PE), the gross sown area in the State increased to 65.7 lakh hectare. The contribution of area under wheat and paddy crops to the total gross sown area in the State was 59.9% during 2016-17 (PE). The area under wheat crop was 25.5 lakh hectare while that under paddy crop increased to 13.86 lakh hectare in 2016-17 (PE). The area under total foodgrains increased to 45.2 lakh hectare. The area under total foodgrains increased to 45.2 lakh hectare. The total food grain production in the State was 177.1 lakh tons in 2016-17 (PE). The production of rice was 44.5 lakh tons, wheat was 123.8 lakh tons, while those of oilseeds and sugarcane was 9.4 lakh tons and 82.2 lakh tons respectively during 2016-17 (PE).

Chart 5- Area under Principal Crops (Thousand hectare)



Source: PHD Research Bureau, compiled from various sources

The State has been converted to a food surplus State. Haryana is one of the largest contributors of food grains to India's central pool with a share¹ of around 15%. The main agricultural crops

¹ Government of Haryana Vision 2030





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produced in the state are rice, wheat, sugarcane, cotton, oilseeds, pearl millet, gram, and barley. Haryana is an agricultural state with nearly 80% of the state's total geographical area under cultivation. The state has diverse agro-ecology and cropping pattern. There are mainly three agro-eco regions in the state. Haryana is one of the key contributors to the national food basket. The state enjoys first position in the production of basmati rice, pearl millet, rapeseed & mustard. More than 60% export of Basmati Rice from India takes place from Haryana. Major crops grown in the state include rice, wheat, pulses, cotton, sugarcane, pearl millet and rapeseed and mustard. The main horticultural crops of the state having good potential are cauliflower, onion, potato, tomato, chillies, guava and kinnow. The state is well known for Murrah buffaloes which are exported to other states of the country and even abroad.

Table 3: Summary of agro statistics

Sr. No	Components	Growth/production
1	Agriculture & allied GSVA at Current prices (FY2017)	Rs 95,620 Crore
2	Growth of Agriculture & allied GSVA (Constant Prices) (FY2017)	7%
3	Agricultural & allied sector's contribution in GSVA (FY 2017)	19.5%
4	Total food grains production (FY2018)	16.58 million tonnes*
5	Total wheat production (FY2018)	11,162 thousand tonnes*
6	Total cotton production (FY2018)	1,626 thousand tonnes
7	Total rice production (FY2018)	4,523 thousand tonnes*
8	Total oilseeds production (FY2018)	1,118 thousand tonnes*
9	Total sugarcane production (FY2018)	9,633 thousand tonnes*
10	Net area sown (FY 2015)	3,522 thousand hectare
11	Area under Wheat (FY2016-17 ^{&})	2,558 thousand hectare
12	Area under Paddy (FY2016-17 ^{&})	1,386 thousand hectare
13	Area under Cotton (FY2016-17 ^{&})	570 thousand hectare

PHD Research Bureau, compiled from various sources (Note: *depict 4th Advanced Estimates; & depicts PE)

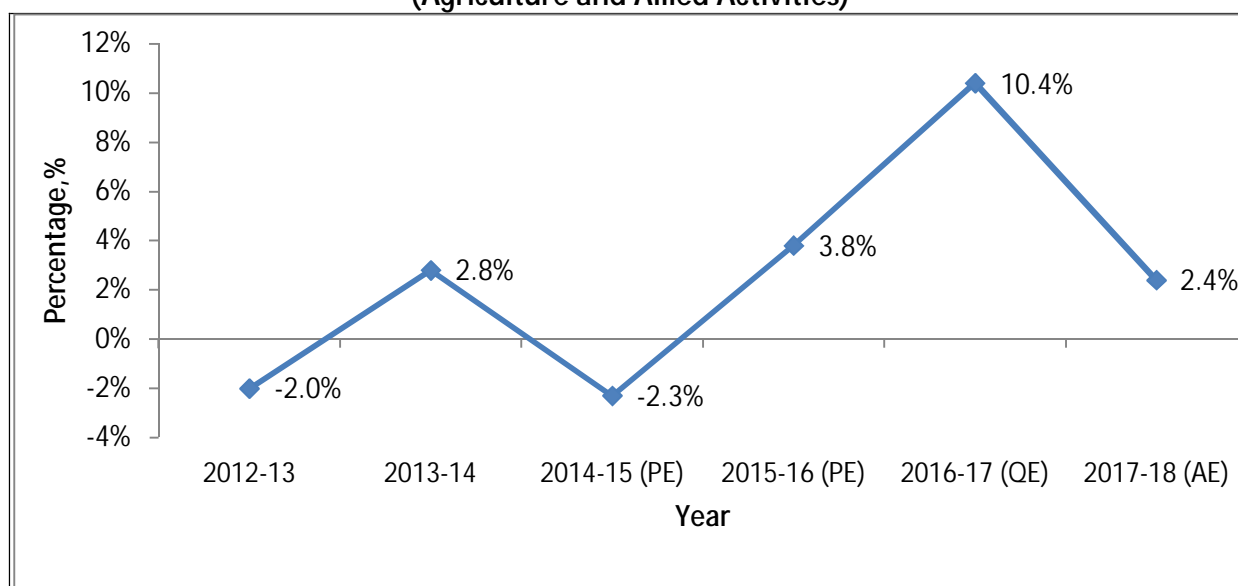




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The growth in Gross State Value Added (GSVA) at constant (2011-12) prices of agriculture and allied activities for Haryana in comparison to India over the years have been shown in chart below. The growth was 2.4% of Agriculture and Allied Sector in the state as per 2017-18 AE.

**Chart 6: Growth in Gross State Value Added at constant Prices (2011-12)
(Agriculture and Allied Activities)**



PE: Provisional Estimates, QE: Quick Estimates, AE: Advance Estimates; Figures of Haryana 2014-15 and 2015-16 are PE, for 2016-17 are QE and for 2017-18 are AE ; Source: PHD Research Bureau, Compiled from various sources

The growth of Agriculture and Allied Sector continues to be a critical factor in the overall performance of the State economy. Agriculture and Allied Sector is composed of agriculture, forestry & logging and fishing sub-sectors. Agriculture including crop husbandry and dairy farming is the main component contributing about 92% in GSVA of Agriculture and Allied Sector.

Given the immense contribution of agriculture and allied activities in the state's growth and development, the state government in the budget 2018-19 increased the outlay for agriculture and allied activities to Rs 4,097.5 crore from Rs 2,709.7 crore at RE 2017-18. This includes outlay of Rs. 1,838.5 crore for agriculture, Rs. 913.4 crore for animal husbandry, Rs. 834.9 crore for horticulture, Rs. 427.2 crore for forests and Rs. 83.5 crore for fisheries.

The GSVA from Agriculture Sector including crops and livestock has been estimated as Rs 68,776 crore with the growth of 1.8% whereas the GSVA from forestry & logging and fishing sub-sectors has been recorded as Rs 4,146.9 crore and Rs 1,602.8 crore with the growth of 2.1% and 36.1% respectively during the year 2017-18.





Progressive Haryana: The Agricultural Hub of India

Table 4: GSVA from Agriculture and Allied Sector at Constant Prices (2011-12) (in Rs Crores)

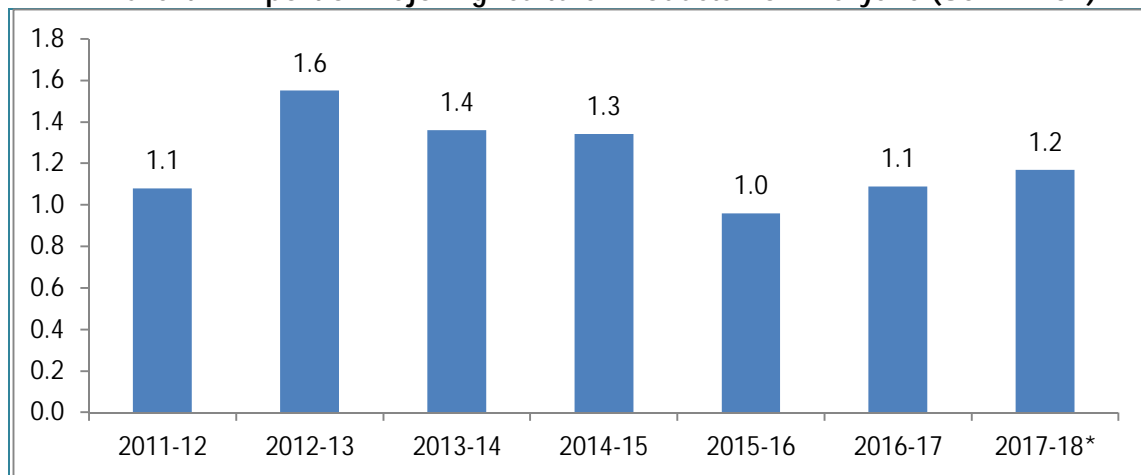
Year/Sector	Crops & Livestock		Forestry & Logging		Fishing		Agriculture & Allied	
	GSVA	Growth (%)	GSVA	Growth (%)	GSVA	Growth (%)	GSVA	Growth (%)
2011-12	59785.5		3894.9		858.4		64538.8	
2012-13	58589.9	(-)2	3772.1	(-)3.2	902.8	5.2	63264.9	(-)2
2013-14	60492.5	3.2	3677.4	(-)2.5	855.1	(-)5.3	65025.1	2.8
2014-15 (PE)	58747.5	(-)2.9	3896.7	6	900.6	5.3	63544.9	(-)2.3
2015-16 (PE)	60945.9	3.7	3983.9	2.2	1003	11.4	65933	3.8
2016-17 (QE)	67566.2	10.9	4060.7	1.9	1178	17.4	72805	10.4
2017-18 (AE)	68776	1.8	4146.9	2.1	1602.8	36.1	74525.8	2.4

P: Provisional Estimates, Q: Quick Estimates, A: Advance Estimates, * Figures in brackets show the percentage growth over previous year. Source: PHD Research Bureau, Department of Economic & Statistical Analysis, Haryana

2.1 Export of Major Agricultural Products from Haryana

Haryana is amongst the biggest producers of food grains in India. The state exported agricultural products worth USD 1.2 billion in 2017-18. The state government of Haryana has been committed to creating a progressive agricultural environment.

Chart 7- Export of Major Agricultural Products from Haryana (USD Billion)



Sources: PHD Research Bureau, Compiled from various sources, IBEF; * Represents data upto February 2018

2.2 Production of Principal Crops in Haryana

The food-grains production in the State has reached an impressive level of 177.1 lakh tonne in 2016-17 (PE) during as compared to 162.9 lakh tonne during the year 2015-16. The wheat and paddy crops have played a major role in pushing up this agricultural production. The production of rice was 44.5 lakh tonne while production of wheat was 123.8 lakh tonne in 2016-17.





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Table 5: Production of Principal Crops in Haryana

In ('000' tonne)

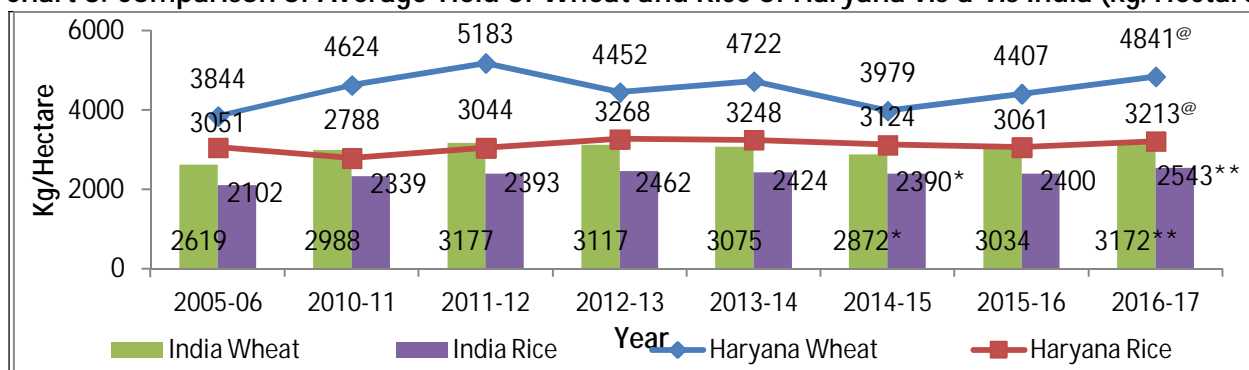
Year	Wheat	Rice	Oilseeds	Cotton ('000' bales)	Sugarcane	Total Foodgrain
1966-67	1059	223	92	288	5100	2592
1970-71	2342	460	99	373	7070	4771
1980-81	3490	1259	188	643	4600	6036
1990-91	6436	1834	638	1155	7800	9559
2000-01	9669	2695	563	1383	8170	13295
2010-11	11578	3465	965	1747	6042	16568
2011-12	13119	3757	758	2616	6953	18370
2012-13	11117	3941	968	2378	7500	16150
2013-14	11800	4041	899	2027	7499	16970
2014-15	10354	4006	706	1943	7169	15236
2015-16	11352	4145	855	993	7169	16293
2016-17 (PE)	12382	4453	946	2041	8223	17711

PE: Provisional Source: PHD Research Bureau, compiled from Economic Survey of Haryana 2017-18

2.3 Comparison of Average Yield of Wheat and Rice of Haryana vis-à-vis India

Haryana has high average yield of wheat and rice in comparison to India. In 2016-17, the average yield of wheat of Haryana was 4841 kg/hectare at PE while that of India was 3172 kg/hectare. Similarly in the same year, the average yield of rice of Haryana was 3213 kg/hectare at PE and that of India was 2543 kg/hectare. The state is therefore, undoubtedly called the 'bread basket of India'. The pro agriculture and farmer policies introduced by state from time to time have reaped fruitful results.

Chart 8: Comparison of Average Yield of Wheat and Rice of Haryana vis-à-vis India (kg/Hectare)



Source- PHD Research Bureau, Compiled from various sources; Note: * Fourth AE is for India** Third AE is for India; @PE is for Haryana





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The table depicts the initiatives of Haryana government taken for strengthening the agriculture sector of the state.

Table 6: Initiatives of state government in Agriculture sector

Crop Diversification	<ul style="list-style-type: none"> Crop diversification is a sub- scheme of Rashtriya Krishi Vikas Yojana (RKVY) and is aimed at promoting technological innovation for sustainable agriculture to enable farmers to choose alternate to increase productivity and income. This scheme/programme helps farmers to encounter the problem of depletion of ground water and improve soil health and maintains dynamics equilibrium of agro-eco-system. Under this programme, the alternate crops like maize, pulses, kharif moong/summer moong, dhaincha etc. are being promoted.
Crop Insurance Scheme	<ul style="list-style-type: none"> The Central Government has formulated the Pradhan Mantri Fasal Bima Yojana (PMFBY) vide notification dated 23.2.2016. The State Government has decided to implement the Pradhan Mantri Fasal Bima Yojana during Kharif 2016, Rabi 2016-17 and Kharif 2017 and Rabi 2017-18 seasons. 7,35,451 farmers has been covered under PMFBY in the state for Kharif 2016. Premium collected was Rs 25,633.1 lakh and Rs 22,707.5 lakh were paid as claim to 1,47,288 farmers under the captioned scheme. In Rabi Season 5,97,298 farmers has been covered and Premium collected was Rs 10,780.3 lakh and Rs 5,080.8 lakh were paid to farmers.
Soil Health Management	The Soil health Card scheme ² was introduced in the State in April, 2015 during 1st cycle of the scheme i.e. 2015-16 and 2016-17 around 16.7 lakh Soil Health Cards have been issued to the farmers of the State. The scheme has been widely publicized among the farmer community. It has been noted that the scheme has benefitted the farmers in terms of reduced input costs and increase in yields.
Direct Seeding of Rice	The Direct Seeding of Rice (DSR) system saves about 25% water and the yield also remains at par. An area 30,000 hectare has been covered under DSR during 2015-16 and about 30,000 hectare area covered during 2016-17 till date.

²Soil Health Card Scheme was launched by the Hon'ble Prime Minister of India on 19.5.2015 at Suratgarh, Rajasthan with the objective to address nutrient deficiency and to promote Soil Test based nutrient management. Under this scheme, Soil Health Card (SHCs) are to be issued to all farmers in a cycle of two years in the State.





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Water Management	<ul style="list-style-type: none"> Water management is a thrust area not only for the State Agriculture and Farmers Welfare Department but also a very critical need to the Nation. Major thrust has been given for the promotion of Water Saving Technologies under "Onfarm Water Management" programme. The department is providing assistance to farmers for laying of Under Ground Pipe Line (UGPL) System, Sprinkler Irrigation System and Drip Irrigation System in cotton and sugarcane crops.
Seed Certification	<ul style="list-style-type: none"> The Haryana State Seed Certification Agency was set up during the year 1976 under Section-8 of Seeds Act, 1966 to fulfill the condition laid down in National seeds Project and was registered as an independent agency on 6.4.1976 under the Registration of Societies Act, 1860. There is an increase of around 12% (average) in the in the area inspected during the period FY 2014 and FY 2017.
National Food Security Mission (NFSM)	<ul style="list-style-type: none"> Government of India has launched centrally sponsored National Food Security Mission in the State from Rabi 2007-08. Two crops namely wheat and pulses have been covered under the mission. Major objectives of the Mission is to increase production of wheat and pulses through area expansion and productivity enhancement in a sustainable manner in the identified districts of the state. It has been envisaged to focus on districts having high potential but relatively low level of productivity. Seven districts of the state namely Ambala, Bhiwani, Gurugram, Jhajjar, Mahendergarh, Rohtak and Yamunanagar have been covered under NFSM-Wheat. For pulses, five districts were covered during 2007-08 to 2009-10. From the year 2010-11, all the districts have been covered under NFSM-Pulses.

Source: PHD Research Bureau, compiled from Economic Survey of Haryana 2017-18





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The following table depicts the agriculture corporations/boards set up in the state for the agriculture and allied sectors.

Table 7: Agriculture Corporations/Boards in Haryana

Haryana Seeds Development Corporation Ltd. (HSDC)	<ul style="list-style-type: none"> Haryana Seeds Development Corporation aims at promoting the welfare of the farmers. The main objective of the Corporation is to supply qualitative seeds to the farmers on nominal profit. HSDC also works as a price stabilizer so that there can be a check on the prices of the seed in the State. HSDC provides quality seeds to the farmers of the State on subsidized rates under various Schemes sponsored by Govt. of India / State Govt. i.e. NFSM, MMA, ISOPOM, RKVY, Crop Diversification Scheme, State Plan and 43 A3P Scheme. To ensure timely availability of certified seeds at the door steps of the farmers, the Corporation has a network of 75 sale counters, besides sale outlets of Institutional Agencies such as MINIBANKS, HAFED, HLRDC and HAIC. The Corporation also opens temporary sale counters in the State on the need basis. Further HSDC arranges the sale of weedicides/pesticides/insecticides and fungicides to facilitate the farmers for getting maximum agriculture inputs from its sale outlets. HSDC markets its goods with the brand name "HARYANA BEEJ". The HSDC has supplied quality seeds to the farmers of Haryana State during 2015-16 & 2016-17 at 6,43,387 qtls which is the highest sale of two years within the State since the inception of the Corporation.
Haryana Land Reclamation & Development Corp. Ltd.	<p>Haryana Land Reclamation & Development Corporation (HLRDC) Limited was incorporated in 1974. The major programmes of the Corporation are reclamation of alkali soils, sale of agriculture inputs and production of quality seeds.</p>
Haryana State Co-Op. Supply & Marketing Fed. (HAFED)	<p>Hafed is the largest apex cooperative federation of Haryana State. It came into existence on 1st November 1966 Since then it is playing a leading role in serving the farmers of Haryana as well as consumers in India and overseas. The main objectives of the federation are to make arrangement for procurement, marketing and processing of agricultural produce and allied products, to make arrangements for supply of agricultural inputs such as fertilizers, seeds and agro chemicals and to facilitate the working of the affiliated Co-operative Societies.</p> <p>Proposed major initiatives/ reforms/ schemes</p> <ul style="list-style-type: none"> HAFED has initiated regarding setting up of Mega Food Project at IMT, Rohtak, with an estimated project cost of 181 crore for which Hafed has already taken 50 acres land from HSIIDC on 75 years lease. The final approval from Ministry of Food Processing Industry, Government of India is at final stage. The funding pattern of this project is as per the MOFPI Scheme, Government of India. Hafed is in a process to set up a 50 TPD Flour Mill at Jatusana, District Rewari, for





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	<p>which initiative to purchase a panchayat land has already been started. This project will be established from Hafed own funds.</p> <ul style="list-style-type: none"> Hafed has also planned to revive its exports activity and action in this direction is already initiated. Exploring possibilities of setting up of Food Processing/Agri-Units in association with Agriculture Department with an objective it increase the income of farmers.
Haryana State Warehousing Corporation	<p>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 farmers, Govt. agencies, public enterprises, traders, etc. At present, the Corporation is operating 111 Warehouses across the State with a total storage capacity of 15.20 lakh M.T. which consists of covered godowns of 15.11 lakh M.T. capacity and open plinths of 0.09 lakh M.T. as on 30.11.2017.</p>
Agricultural Marketing	<p>The Haryana State Agricultural Marketing Board (HSAMB) was set up on 1st August, 1969 for exercising superintendence and control over the Market Committees in the Haryana State.</p> <ul style="list-style-type: none"> The Board has established 108 Principal Yards, 173 Sub yards and 196 Purchase Centres. In addition to this, the Board has also constructed 4,870 numbers rural link roads having length 12,583 kms till 31.1.2018 The Board has established a Farmer's Market in Panchkula with the objective to ensure fair price to the farmer's produce without middle-men intervention. The other objective of this market is to provide fresh fruits & vegetables to the consumers at a nominal price. There is a proposal to establish such markets at Karnal, Rohtak, Gurugram and Sonapat very soon. The Apple Market at Panchkula has also been made functional in October, 2016. Haryana is one of the fourteen states in the country in which e-NAM programme has been launched. The HSAMB has connected 54 Mandis approved by the Govt. of India with e-NAM platform.

Source: PHD Research Bureau, Compiled from various sources

2.5 Emerging Horticulture Activities

Haryana is fast emerging as one of the leading State in the field of Horticulture in India. In the State almost all type of Fruits, vegetables, spices, mushroom & flowers are being grown. The Government has prepared "Horticulture Vision" with the aim to double the area under horticulture from the present 7.5% to 15% and triple the horticulture production in the State by 2030.





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The Government has declared 340 “Bagwani Villages” in 140 Crop Clusters for which a Crop Cluster Development Programme (CCDP) has been prepared for crop diversification and to increase farmers’ income. Out of total area under crops around 85% area under Vegetables & rest is under fruits, spices etc. The department of horticulture is encouraging cluster approach for the better due of crop cultivation according to climate & soil conditions. Horticulture crops cover 4.9 lakh hectare area which is 7.5% of the gross cropped area of the State. Production of horticultural crops in the State was 70.9 lakh M.T. during the year 2016-17.

Table 8: Glimpse of Horticulture in Haryana

Policies and Programme Introduced by State Government for Horticulture	Horticulture Department implements 20 schemes out of which 11 are State Plan Scheme, 5 Central Plan Scheme (Share basis) and 1 is 100% Central Sponsored Scheme & 3 Non Plan Schemes.
New Initiatives for horticulture (2017-18)	<p>Establishment of Horticulture University: To boost research activities in Horticultural crops, Government has established Horticulture University in Karnal.</p> <p>Sign of MoU and LOI: Government has signed an MoU with Department of Agriculture, IOWA State, USA to promote agriculture and transfer of technologies.</p> <p>Another MoU was also signed with a US firm for Establishment of Post harvest Management Centre in Fruits and Vegetables that will help in branding, packaging and marketing of produce especially “Haryana Fresh” brand.</p> <p>Government has signed a letter of Intent with WAGENINGEN University & Research, Netherland for collaboration in the field of Agriculture and Horticulture Research & Development.</p> <p>Establishment of New Centres: Government is establishing Centre of Excellence in each district of the State. Centres have already been established one each at Karnal, Sirsa and Kurukshetra. One another centre namely Integrated Bee Keeping Development Centre has been inaugurated on 10th November, 2017 at Ramnagar Kurukshetra.</p> <p>Formation of Farmers Producer Organization (FPOs): To promote collective marketing of horticulture produce, government has formed 78 Farmers Producer Organization to cover 20 districts with 741 numbers of Farmer Interest Groups (FIGs) having 25,049 numbers of farmers to benefit them directly under different Government schemes. These farmers would also be linked with Kisan portal for direct transfer of technical, weather and marketing information.</p> <p>Crop Cluster Development Programme (CCDP): New scheme namely Crop Cluster Development Program (CCDP) has been launched with budget outlay of Rs 510.4 crore. Under this program, in each cluster marketing infrastructure and post harvest management facilities like pack house, primary processing centre, grading-sorting machine, storage facilities, refer vans, input and quality control facility shall be created to have forward and backward linkage for effective marketing of horticulture produce.</p> <p>Bhavantar Bharpayee Yojna: Bhavantar Bharpayee Yojna has been launched to mitigate risk of low prices for horticulture produces in market and to motivate the farmers for diversification in agriculture. In the first phase, 4 crops viz, Onion, Tomato, Potato & Cauliflower have been included. To avail the benefit under the scheme, farmers have to register on Bhavantar Bharpayee Yojna portal of HSAMB website.</p>

Source: PHD Research Bureau, Compiled from various sources





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2.4 Expanding Irrigation Facilities in Haryana

Haryana, without any perennial source of surface water and dependent upon its share in various Interstate agreements, has been managing the surface water resources effectively. The State has become one of the main contributors to the national basket of food grains. Irrigation & Water Resources Department, Haryana (IWRD) is primarily responsible for operation and maintenance of canal and drainage network in the State including supply of water for irrigation, drinking, pond filling and Industrial and other commercial purposes. Haryana has developed an extensive canal network consisting of 1,461 channels having a length of 14,085 kms.

The Bhakra System has total 522 canals with a total length of 5,961 km, the Yamuna System has total 446 canals covering 4,422 km. and the Lift System has total 493 canals covering 3,702 km. Further, the State has vast network of drainage of about 800 drains covering 5,150 kms length. Haryana has a total 1,350 Canal Tails. 1,343 Tails have been fully fed. The state government is committed to realise the vision of 'Har Khet ko Pani' and has increased the outlay for irrigation and water resources by around 20% in the Budget 2018-19. The Government has taken a number of initiatives in the field of irrigation to conserve and make optimum use of each drop of water, as per the norms of "Per Drop More Crop" initiative in the State.

To utilize the surplus water during monsoon period in river Yamuna, four projects for increasing the capacity of carrier systems are in pipeline, aiming to bring about 4000 cusecs additional water during monsoon season. These are (i) Western Jamuna Canal Main Line Lower from RD 68,220 (Hamida Head) to RD 1,90,950 (Indri Head), (ii) WJC Main Branch from 0-1,54,000, (iii) rehabilitation of parallel Delhi branch from RD 0 to 1,45,250 for improving capacity and (iv) remodeling of Augmentation Canal to construct a new cement-concrete lined channel with the designed capacity of 6,000 cusecs.

2.5 Increasing Forest Cover

Haryana is primarily an agricultural State, with almost 80% of its land under agriculture. The Forest and Tree Cover extends to 6.6% of the total geographical area of the State. To increase this area, during the year 2017-18, 14,625 hectare area has been brought under tree plantation. Two new innovative schemes have been started by Forest Department in association with the Panchayat Samities.

To educate people about the systems of traditional medicine and involve them in the conservation of endangered medicinal plant species, 58 Herbal Parks have been established in the state. World Herbal Forest is being developed in Morni Hills of the State with the technical support of Patanjali Yog Peeth, which will become a huge repository of medicinal plants in the near future.





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2.6 Prospering Animal Husbandry & Dairying

Animal husbandry is an important sector to supplement the income of rural masses in the State. The Animal Husbandry and Dairying Department has undertaken ambitious programmes for genetic improvement of the livestock as well as keeping it disease-free for their optimum production. As per Livestock Census-2012, livestock population of the State is 89.9 lakh including 18.1 lakh cattle and 60.85 lakh buffaloes.

Haryana is the only State in the country to make available pasteurized A-2 cow milk through VITA booths in the State. The per capita per day milk availability in the State is 878 grams as compared to the national average of 329 grams.

A new scheme Risk Management and Livestock Insurance has been launched in July 2016 at Jhajjar. Under this scheme, Rs 100 for large animals such as cattle, buffaloes, horses, donkeys and camels etc. and Rs 25 for small ruminants such as sheep, goats and pigs etc. for three years as premium will be paid. Five large animals and 50 small ruminants will be insured by a beneficiary. Free insurance will be provided to the livestock of scheduled caste families.

2.7 Thriving Fisheries

During the year 2017-18 (up to 31st December 2017) an area of 15,446 has been brought under fish culture by stocking of 1,764.5 lakh fish seed against the target of 1,517.4 lakh fish seed and 1,35,841.6 M.T. fish were produced. To utilize the saline affected and water logged area, the department of Fisheries has introduced first time in the State, a new project has been implemented under Rastriya Krishi Vikas Yojna for White Shrimp *Litopenaeus Vannamei* in saline area of district Jhajjar, Rohtak & Hisar and fish culture in waterlogged area of district Mewat and Palwal during the year 2014-15.





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3. Agricultural Policies in Haryana

3.1 Haryana Agri Business and Food Processing Policy 2018

Food processing sector is the sunrise sector of the state as it not only creates synergies between agriculture sector and industry but also has the potential to upscale economic growth and create lakhs of employment opportunities. The growth of food processing sector is essential to meet the twin objective of “inclusive growth” and “food security”.

The Enterprise Promotion Policy 2015 has identified Food processing as a thrust sector. The policy lays equal emphasis on providing skilled manpower, robust infrastructure and conducive business climate for all round development of sector. New drivers of growth such as Agro-marketing reforms, development of Mega Food Parks and Mini Food Parks, encouragement to Farmer Producer Organizations, support to agri and food cooperatives, promotion of start-ups in agri-business space have been given due emphasis in the policy.

Haryana Agri-Business and Food Processing Policy 2018 aims to give impetus to the Food processing industry in the state. It aims to create greater employment opportunities across the entire food value chain by establishing efficient forward and backward linkages, thus promoting agriculture and rural prosperity. Food processing is the bridge between industry and farming and the policy aims at doubling the farmer's income through large scale promotion of fresh produce of Haryana specially fruits, vegetables, milk and fish.

3.1.1 Haryana Potential as a Food Processing Hub

- Agriculture is one of the biggest employment generators providing employment to more than 50% people in State. Even in case of industrial employment, share of agriculture based industries is more than 31%.
- The state occupies a premier position in the country's agribusiness industrial scenario with significant contribution in agriculture, horticulture, dairy, poultry and fisheries.
- Government has created strong agriculture marketing infrastructure in Haryana with a network of 108 Principal Yards, 173 Sub Yards and 196 Purchase Centers.
- 54 Mandis of state are covered under E- National Agriculture Market (E-NAM) initiative.
- Food processing sector has been identified as a focus sector in the Haryana Enterprise Promotion Policy 2015 (EPP 2015).
- To promote Haryana as an investor friendly destination, the government is proactively taking measures to create an ecosystem of 'Ease of Doing Business' in the State that matches and even exceeds the best global standards.





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3.1.2 Objectives of the Haryana Agri Business and Food Processing Policy 2018

- To make Haryana a clear destination of choice for investments in Food processing sector
- To promote value addition in Agriculture and allied sectors as Dairy, Horticulture, Livestock, Fishery and Poultry etc.
- To strengthen infrastructure by investing in Food Processing clusters thus developing strong and robust value chain
- To Strengthen Farmer Producer Organizations (FPOs) registered in Haryana and Agro/Food Cooperatives through market linkages and capacity building initiatives
- To promote farm-gate processing of Fresh Food specially fruits, vegetables, milk and fish
- To promote start-ups in agri-business space
- To enable the farmers to increase their income through new agro-marketing reforms
- The industries to be set-up would work as Level changer, and the areas having sufficient production of a particular produce would be considered for the establishment of that kind of units in that particular area.
- Since, the Government is working for targeting the NCR and National Capital Delhi for supplying of fresh horticulture, milk and dairy and allied products to the largest population of NCR, being the state's command area nearest to this largest market of NCR for daily needs, peri-urban concept, initiated by Government, would be kept in consideration by the units to be set-up.
- These units would concentrate on supplying of the produce in international market also, having advantage of the IGI airport and such units, if set-up in vicinity, would help in supplying of fresh fruits and vegetables and dairy and other allied products to the demanding international markets.

3.1.3 Opportunities for Agro and Food processing

The agriculture and allied sector has opened opportunities for the successful establishment of vibrant and potentially profitable agro-processing units in Haryana. Being the major producer of various agri-produce, Haryana offers vast potential in processing of high value added products. Government of Haryana envisions creating a prosperous rural economy by achieving accelerated growth in farm sector through creation of strong value chain linkages, thrust on research and establishment of state of the art infrastructure in agro and food processing sector.





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5 Year Goals of Haryana Agri Business and Food Processing Policy 2018

Attract investments of Rs 3500 crore throughout the value-chain of food processing sector

Employment for 20000 people in food processing sector

To increase the level of processing in perishables by 10% (fruits, vegetables, dairy, fishery, etc.) in the next 5 years.

Increase farmer's income through agri-marketing reforms, enabled mandis and through integrated value chain infrastructure

To bring 14% of total cropped area under Horticulture, up from a level of 7.6% and achieve optimum crop diversifications

To bring all 108 state mandis under E-trading National Agricultural Marketing (E-nam) initiative.

3.1.4 Promoting Human Capital Development in Agro and Food processing sector

a. Start-up Fund for innovation in Agri-business

To give the agricultural startup a much needed technological boost, Government of Haryana has decided to fund innovations in the agriculture sector. In order to fuel the growth of innovative ideas in the agri-tech sector, State has set aside Rs 10 crore fund of Haryana Entrepreneur and Start-up policy 2017 for agriculture innovation startups.

b. Incubation centers

- To promote entrepreneurship in the food processing sector, the state government envisages setting up incubation centers in the state.
- The state shall collaborate with NIFTEM (National Institute of Food Technology Entrepreneurship and Management) for utilization of incubation facilities by food processing enterprises.
- With NIFTEM facilitation, Government of Haryana shall target 10 business ideas to be incubated per year including start-ups formed in agri-space.





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c. Support for Skill development

- To address the shortfall of skilled manpower in the Food processing sector, the state government shall provide assistance to Agro and Food Processing units/Farmers/FPOs by reimbursing 50% of the total cost of the training limited to Rs 5,000 per trainee on obtaining industry recognized skill certifications from recognized institutions.
- The state government shall also collaborate with newly established Haryana Vishwakarma Skill University at Palwal for providing skill training in food processing sector especially farm skill training. Skill training would be provided to farmers and rural youth on grading and sorting techniques, food Safety and hygiene in all food business etc.
- Universities in the state would be encouraged to commence courses in food packaging, food testing and quality, procurement, food processing and allied fields.





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4. Haryana towards Agricultural Prosperity

Haryana is the bread basket of India. The state has high agricultural productivity and therefore reaps a surplus in food grain production and contributes about 15% of the central pool of food grains, despite constituting only 1.3% of the national landmass. In 2015-16, Haryana produced 3,761 kg food grain per hectare as compared to the national foodgrain productivity of 2,070 kg per hectare. Since 1970-71 Haryana has witnessed an increase of 242% in food grain productivity as compared to 40% increase nationally³.

Haryana has a higher freshwater fish yield (6,800 kg per hectare per annum) than national average (2,900 kg per hectare per annum). Similar patterns are manifested in the availability of milk (835 g of milk per capita per day) and eggs (179 eggs per capita per annum) in Haryana as compared to India (309 g of milk per capita per day and 64 eggs per capita per annum)⁴.

This section illustrates state's efforts and commitments for uplifting the agrarian sector of the state and thriving opportunities in the state for enhancing the agricultural productivity. Haryana towards agricultural prosperity also elucidates on state's future outlook on zero hunger, no poverty, sustainable consumption and production, life on land, climate action and life below water (sustainable development goals) pertaining to agricultural context.

4.1 Zero Hunger

4.1.1 Vision- Haryana envisions no malnutrition amongst children and adequate, safe and nutritious food for all residents of Haryana, especially women of reproductive age, children and extra-vulnerable populations, by making farming efficient, economically viable, progressive, sustainable and climate resilient. The total amount budgeted in 2018-19 for various development schemes that help in achievement of Zero Hunger Goal is Rs. 3,149.3 Cr.

Table 9: Vision for Zero Hunger

Focus for Future	Target 2019
Reduce the percentage of underweight children	Reduce to 20%
Reduce the percentage of wasted children	Reduce to 14%
Reduce the percentage of anaemic children	Reduce to 50%
Reduce the percentage of anaemic women	Reduce to 42%
Increase the production of milk	Increase to 100 lakh tons
Increase the availability of milk per capita	>955 gram (per capita per day availability)
Increase the number of new commercial dairies	Increase to 1,500 new commercial dairies
Increase fish production	Increase to 8,200 kg per hectare/year
Increase production of horticulture crops	Increase to 110.81 lakh MT

Source: PHD Research Bureau, Compiled from various Sources

³ Government of Haryana Vision 2030

⁴ IBID





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Following are the major schemes covered under the vision of zero hunger.

Table 10: Major Schemes covered under Zero Hunger

Agriculture and Farmers Welfare Department	
<ul style="list-style-type: none"> • Scheme for the stocking and distribution of fertiliser by Institutional agencies • Providing Soil and Water Testing Services to the Farmers • Scheme for Quality Control on Agriculture Inputs • Scheme for Setting up & Strengthening of Bio-logical control laboratory at Sirsa under Integrated Pest Management • Scheme for Promotion of Cotton Cultivation • Scheme for Technology Mission on sugarcane • Scheme for Promotion of crops diversification • Scheme for constitution of Haryana Kisan Ayog • Scheme for Promotion of sustainable Agriculture Strategic initiatives • Scheme for strengthening of Agriculture Extension infrastructure. • Scheme for Agriculture Extension training Services to Farmers • Scheme for Improvement of Agriculture Statistics • Scheme for Agriculture Engineering Service • Scheme for providing implements/machinery on subsidy to the group of farmers and SC farmers • Scheme for Integrated Watershed Development and Management project • Scheme for providing Assistance on adoption of Water Saving Technology • Scheme for Pilot Project for the reclamation of saline soil and Waterlogged land in the state • Grants-in-aid to Haryana Agricultural University • National Mission of Oil Seeds & Oil Palm (NMOOP) • National Food Security Mission • Sub-Mission on Agriculture Mechanization • Scheme for Rashtriya Krishi Vikas Yojana • Scheme for Support to State Extension Programmes for Extensions Reforms • Pradhan Mantri Fasal Bima Yojana • Soil Health Cards Scheme • National Mission on Sustainable Agriculture • Setting up Bio-gas Plants • Scheme for Improvement of Crops Statistics • Timely reporting of Estimates of area on production of Principal Crops in Haryana 	
Animal Husbandry	
<ul style="list-style-type: none"> • Opening /Up-gradation and strengthening of veterinary Institutions • Scheme for Conservation and Development of Indigenous cattle • Scheme for the Establishment of Gou Seva Ayog • Scheme for Establishment of Hi-tech Dairy units • Scheme for Establishment of Backyard poultry unit • Scheme for Establishment of Goat and Sheep Unit • Scheme for Employment opportunities to Scheduled Castes by establishing Livestock units • Scheme for Special Livestock Insurance • National Livestock Mission 	





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- Scheme for Sample Survey Estimation of Production of Milk, Eggs, Wool & Meat /Fodder & Grasses /Assessment Development Project
- National Plan for Dairy Development
- Livestock Health and Disease Control

Co-operative Societies

- Publicity and Propaganda through Co-operative Development Federation
- Assistance to Cooperative Labour & Construction Societies
- Mukhya Mantri Dugdh Utpadak Protsahan Yojana in Haryana
- Assistance to Haryana State Cooperative Agriculture and Rural Development Bank Ltd (HSCARDB)
- Rebate on rate of interest regarding short term Crop loans advanced by Co-operative Banks
- Assistance for contribution to guarantee fees for deposit of guarantee Scheme for PACS
- Assistance to Women Co-operatives
- Subsidy to vegetable & fruit growers Cooperative Societies
- Interest subsidy on loan advances to Scheduled Caste Members of Primary credit and Industrial Labour and Construction Societies
- Share Capital to Labour & Construction Co-operatives
- Share Capital to Co-Operative Labour and Construction Federation
- Share Capital to HRCO Fed
- Share Capital Urban Co-operative Banks
- Share Capital to House Federation
- Share capital to Primary Cooperative and Agriculture Rural Development
- Share capital of HARCO Bank.
- Share Capital to Central Co-operatives Banks
- Share Capital to Co-operative Sugar Federation
- Scheme for State Government loans to Haryana State Cooperation Agriculture & Rural Development Bank for Farmers
- Setting up of power cogeneration and ethanol Plant in Cooperative Sugar Mills.
- Loans to Co-operative Sugar Mills
- Integrated Co-operative Development Project
- Subsidy to Co-operative Societies
- Share Capital to Primary Agriculture Co-operative Societies from National Cooperative Development Corporation
- Share Capital to Fruit & Vegetable Societies
- Share Capital of Marketing Co-operatives
- Integrated Co-operative Development Project
- Loan to Co-operative Societies under Central Sector Integrated Scheme of NCDC

Urban Local Bodies

- Shifting of Milk Dairies

Land Records

- Land Records Agricultural Census
- Rationalisation of Minor Irrigation Statistics -Establishment

Education(Elementary)





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<ul style="list-style-type: none"> • Mid-Day Meal for Primary School Children
Food and Supplies
<ul style="list-style-type: none"> • Dal Roti Scheme
Revenue
<ul style="list-style-type: none"> • Development of Mewat Area • Development of Shivalik Area
Fisheries
<ul style="list-style-type: none"> • Scheme for the Ornamental Fisheries • Development of Fresh Water Aquaculture • Inland Capture Fisheries (Village, Ponds, Tank etc.) • Development of Water Logged Area • Scheme for Education, Training and Extension/Renamed as Training, Skill Dev. And Capacity Building of Fish Farmers and Other Stakeholders in all • Fisheries related activities both Marine and Inland Fisheries • Scheme for the Utilization of Saline Ground Water for Fish / Renamed as Productive utilization of Saline/Alkaline Waters for Aquaculture • Strengthening of Database and Information Networking for Fisheries Sector/ Renamed as Strengthening of Databases and Information • Networking for Fisheries Sector
Horticulture
<ul style="list-style-type: none"> • Scheme for promotion of Micro Irrigation in over exploited and critical blocks in Haryana State Under Irrigation Efficiency Scheme of NABARD • On-Farm & Marketing Support to Horticulture Farmers • Scheme for promotion of Advanced National and International Technologies in Horticulture Sector • Scheme for Strengthening of Horticulture • Scheme for Good Agricultural Practices and Effect of Pesticide Residue on Fruits and Vegetables • Scheme for Integrated Horticulture Development in Haryana State • Scheme for Horticulture bio technology centre in Haryana State • Scheme for the Agricultural Human Resources Development • Setting up of Directorate of Horticulture in Haryana • Bhavantar Bharpayee Yojana in Haryana State • Scheme Catalytic Development Programme in Sericulture Haryana • Scheme for Horticulture Crops Insurance in Haryana • Scheme for National Horticulture Mission • Scheme for the Market Intervention for Procurement of grapes and Kinnow , Malta Renamed as Market Intervention and Price Stabilization • National Mission on Sustainable Agriculture
Irrigation and Water Resources Department
<ul style="list-style-type: none"> • Compensation to farmers for loss of their crop due to breach of canal
Welfare of S.Cs, S.Ts and Other B.Cs
<ul style="list-style-type: none"> • Subsidy for traditional Schemes such as Dairy Piggery and other Schemes

Source: PHD Research Bureau, Compiled from various sources





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4.1.2 Progress on Zero Hunger

Haryana is persistently working on achieving the goal of zero hunger in the state. The state has introduced various programmes to increase agricultural productivity. The state is also practicing sustainable practices for food production, ecosystems and genetic diversity.

a. Programmes Introduced to increase Agricultural Productivity

The Government of Haryana in cooperation with the Government of India has established the following programmes towards increasing agricultural productivity within the state.

Table 11: Programmes Introduced to increase Agricultural Productivity

Soil Health card Scheme	This scheme was launched to create mass awareness among the farming community for the balanced use of fertilizers and to sustain soil health.
National Food Security Mission	The main objective of the mission is to increase the production of wheat and pulses in identified districts, through area expansion and productivity enhancement in a sustainable manner. Restoring soil fertility and productivity at the individual farm level and enhancing farm level economy and profits, expected to restore confidence amongst farmers, provides the main objective of this intervention.
National Mission for Oilseed and Oil Palm	To meet the requirement of edible vegetable oils, the Government of India launched the National Mission on Oilseeds and Oil- Palm Scheme in 2014-2015. The target of this mission is to increase the area, production, and productivity of oilseeds crops.
RashtriyaKrishi Vikas Yojana (RKVY)	This intervention aimed at achieving and sustaining desired annual growth during the XIIth Plan period, by ensuring holistic development of agriculture and allied sectors. Under this scheme, central assistance is provided to the state in the State Plan Budget for agriculture and allied sectors.
National Mission on Agriculture Extension and Technology	The main objective of this programme is to provide the latest technological innovations to farmers through training, exposure visits and kisan melas. In this manner, farmers are kept up-to-date with existing technology and are able to modernize production in a sustainable manner.
Sub-Mission of Agricultural Mechanization	The objective of this programme is to provide agricultural implements to small and marginal farmers on a custom-hiring basis. It also targets reducing the costs of cultivation by increasing the productivity of implements.
Pradhan Mantri Fasal Bima Yojana	The main objective of the scheme is to mitigate crop loss due to natural calamities and to encourage farmers to use new technologies.
Mission for Integrated Development of Horticulture	This centrally sponsored scheme of Rs 100 crore is meant for the holistic development of horticulture and specifically covers different components of production, including protected cultivation, creation of water sources





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	and post harvest management, area expansion, mechanization, bee keeping, etc.
National Livestock Mission	The Government of India launched this initiative for the sustainable growth and development of the livestock sector in a holistic manner. The mission covers components for improvement of livestock productivity, with special emphasis on small animals, increases in availability of feed and fodder and risk management.

Source: PHD Research Bureau, Compiled from various Sources

b. Sustainable Food Production and Genetic Diversity

The per capita availability of milk and eggs in the state is almost three times the national average. The food quality and accessibility of the same presents an opportunity to be explored. The state has made progress in the agricultural sector over the last few decades. Cropping intensity⁵ and irrigation intensity are significantly high, at 182% and 188%, respectively.

The Government of Haryana in cooperation with the Government of India has established the following programmes to support and facilitate sustainable food production, ecosystems and genetic diversity.

National Mission on Sustainable Agriculture- This centrally sponsored scheme was established to enhance rain-fed area development through the adoption of an area-based approach for the development and conservation of natural resources along with farming systems. This programme consists of developing appropriate farming systems by integrating multiple components of agriculture such as horticulture, livestock, fishery, forestry with value addition through agro-based income generating activities and farm development activities. It also includes establishing new static soil testing labs and the strengthening of existing soil testing labs, as well as the purchase of 50 units of mini labs.

4.1.3 Opportunities Ahead for Haryana

- Addressing malnutrition and other challenges related to the health and nutrition of children besides having high productivity in agriculture would enable the state address its goal of Zero Hunger.
- Diversification of agriculture and improving the productivity of the workforce engaged in the primary sector could be tapped as an opportunity as also leveraging the location advantage of the state to give fresh impetus to the progressing industrial sector.
- Acceleration in the growth rate of primary sector harnessed to its full potential will enable the state to meet its economic and social targets.

⁵ IBID





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4.1.4 Way Forward

The state government is pursuing the aim of doubling farmers' income by 2022 by reducing the cost of production and shifting to high-value farming. Participation of the private sector would be of equivalent importance in establishing value- chains, supply of hybrids, technology and contributing to research and development. Haryana is therefore, well placed to be one of the most developed states of India by 2030 and aims to ensure development for all sectors. The state aims for the welfare of people and none of the residents are left poor, uneducated, undernourished and uncared for by 2030.

4.2 No Poverty

4.2.1 Vision- The state's vision is to ensure livelihoods and income opportunities to all vulnerable people living in poverty in all its dimensions and to provide easy access to health, education, housing, basic services and social protection as well as risk mitigation across the State. The total amount budgeted in 2018-19 for various development schemes that help in achievement of no poverty is Rs 2,454.3 Cr.

4.2.2 Progress on No Poverty

Leveraging Haryana's progressive agricultural sector, expanding industry and services and strategic location, the Government of Haryana has been making consistent efforts to reduce the level of poverty in the state.

- **Improve Productivity and Income from Agriculture-** All efforts are being made to improve productivity and net income from agriculture. This is being done through supply of better seeds, soil health programmes, crop diversification, post harvest management, easy credit supply to farmers, provision of monetary support, etc. Some of these schemes include Pradhan Mantri Fasal Bima Yojana, Rashtriya Krishi Vikas Yojana, National Livestock Mission, Soil Health Card Scheme and National Food Security Mission.
- **Social Protection and Risk Mitigation-** The state government has provisioned for disaster management funds to assist disaster affected persons. Minimum compensation paid to all the stakeholder is Rs 500 for minimum loss. The state has also worked to build risk mitigation through insurance schemes such as the Pradhan Mantri Jan Dhan Yojana (PMJDY), the Pradhan Mantri Fasal Bima Yojana (PMFBY) and the Rashtriya Swasthya Bima Yojana (RSBY). Haryana has special schemes in place for farmers and industrial labourers as well.





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- The state government is working towards developing market linkages between food producers, manufacturers, exporters and other participants in the agricultural market, through the use of modern technologies such as e-platforms like e-Kharid. Current schemes of the Government of Haryana rolled out by different departments provide benefits and financial assistance to the poor. A synergy among the schemes could be developed to deliver consolidated benefits to the target groups.

4.2.3 Opportunities Ahead for Haryana

The state government envisages developing livelihood opportunities in agriculture sector directly or indirectly that would channelize the equivalent dependence on agriculture as well as other sectors and would foster all inclusive growth of the economy.

- Employment-** Haryana is an agro-based economy. Majority of state's population is rural and directly or indirectly dependent on the agricultural and allied sector for livelihood. The state farming sector has a potential to support 10-20% of the state's population. To give meaningful and gainful employment, the state could generate employment opportunities such as developing agri-preneurs in the agro and food based industries and could channelize the labour force to other adequately remunerative employment opportunities.
- Focus on food processing and agri-processing industries-** The establishment of food processing and agri-processing industries would lead to indirect dependencies on agriculture and compound the high income sources.

4.2.4 Way Forward

Employment- Skill development initiatives coupled with easy access to institutional finance would encourage the agricultural sector to find synergies with the growth of food and agri-processing industries promoted through a variety of mechanisms.

4.3 Sustainable Consumption and Production

4.3.1 Vision- The Government of Haryana will strive to sustainably reduce waste generation through prevention, reduction, recycling and re-use and to sustainably manage the use of natural resources, while positively impacting statewide consumption and production norms. The total amount budgeted in 2018-19 for various development schemes that help in achievement of Sustainable Consumption and Production is Rs 4.7 Cr.





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Table 12: Major Schemes for Sustainable Consumption and Production

Agriculture and Farmer Welfare Department
Scheme for Setting up & Strengthening of Bio-logical control laboratory at Sirsa under Integrated Pest Management –Normal Plan
Animal Husbandry
Scheme for Assistance to States for Conduct of Livestock Census
Horticulture
Scheme for Good Agricultural Practices and Effect of Pesticide Residue on Fruits and Vegetables
Scheme for Demonstration cum-food Processing Technology in Haryana

Source: PHD Research Bureau, Compiled from various Sources

4.3.2 Progress on Sustainable Consumption and Production

- **Water Management-** The state government is working towards recharging ground water supplies. The state has implemented a compulsory rainwater harvesting system and promote crop diversification so as to move towards less water-intensive crops. The farmers are therefore slowly shifting away from regular rice/wheat crop cycles towards the adoption of micro-irrigation techniques. A watershed management programme has also been put in place to harvest rainwater for irrigation, plantations, fisheries, pasture development, etc.
- **Soil and Air Management-** The Government of Haryana has committed itself to improving soil depletion while building on its efforts to reduce the use of pesticides and fertilizers. The Government of Haryana has introduced Soil Health Cards, which have been issued to farmers to better regulate the amount and type of fertilizers which can be used on their lands. These efforts also help to improve the air quality within the state. The Government of Haryana presently has a strong regulatory framework to improve the quality of air, including the establishment of four ambient air quality monitoring systems within the state to measure pollution levels.
- **Waste Management-** The state government has implemented a number of Acts, rules and notifications towards the creation of a regulatory framework which controls waste and pollution generation. These include 1134.2 lakh MT of crop residue in the form of wheat stubble and paddy straw made available for use as a source of carbon credit; Installation of a common effluent treatment plant (CETP) in all industrial areas; Increasing the state budget towards waste prevention measures; Enhancement of landfill sites to better respond to state-wide needs, among others.
- **Sustainable pattern of Consumption and Production-** The management of production, transportation and storage of food grains, pulses, cotton and vegetables is in initial stages in the state. Within agriculture, the Department of Horticulture is presently encouraging a





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cluster-based approach towards fruit cultivation, recognizing differences in climatic and soil conditions. This has resulted in an increase in area used and fruit produced. To facilitate marketing of this produce, the Haryana State Agricultural Marketing Board has established 108 Principal Yards, 173 Sub yards and 196 Purchase Centres. In addition to this, the Board has also constructed 4,870 rural link roads having length 12,583 kms till January 2018.

- **Foodgrains-** In an effort to reduce the storage losses, the Government of Haryana is constructing several new covered storage facilities, in order to help meet storage needs in different locations throughout the state.
- To modernize Haryana's power grid, multiple interventions, such as rebate programmes, subsidies, cogeneration and regulations concerning mandatory installation of environment-friendly technologies have been put in place to lower the agricultural dependence on non-renewable energy. In an effort to more effectively manage agricultural waste, a cluster based approach to composting plants has been adopted and work has commenced on the construction of plants in Bhuna, Hisar, Bhiwandi, Puhana and Farukhnagar. Strategies towards crop diversification to reduce agricultural waste, are being implemented around the state. Designing of framework for disposal of agricultural waste would allow the state to lower the agricultural dependence on non-renewable energy and channelize the productive use of agricultural waste.

4.3.4 Way Forward

- The Government of Haryana would be better placed to link soil, crop, weather factors with Haryana's existing cultural and conservation practices, as they relate to soil and water. This will allow the state to achieve optimal nutrient use efficiency, yields, crop quality and economic returns.
- The state is working on increasing storage facilities, adaptation of existing production techniques to climate change and better regulation of non-eco-friendly behavioural patterns.
- The state is working towards increased covered storage facilities in mandis, to prevent spoilage and wastage of food grains during the process of marketing.
- An extensive research in drought-tolerant and pest-resistant crops needs to be conducted.

4.4 Climate Action and Life below Water

4.4.1 Vision- Haryana would strive to increase the resilience, awareness and adaptive capacity of people in relation to climate change. The total amount budgeted in 2018-19 for various development schemes that help in achievement of vision Climate Action and Life Below Water is Rs 743.64 Cr.





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Table 13: Vision for Climate Action and Life Below Water

Focus for Future	Target-2019
Eliminate stubble burning	Eliminate by 70%
Establish Climate Smart Villages	100
Establish Knowledge Mission Centres	1
Awareness generation and training of farming and other vulnerable communities in climate change adaptation and mitigation strategies	500 farmers and vulnerable communities to be trained
Introduction of micro irrigation to replace flood irrigation	1% of total irrigated area

Source: PHD Research Bureau, Compiled from various Sources

The table below illustrates the major schemes covered under climate action and life below water.

Table 14: Major Schemes covered under Climate Action and Life Below Water

Agriculture and Farmer Welfare Department
Scheme for Agriculture Extension training Services to Farmers
Land Records
Rationalisation of Minor Irrigation Statistics
Environment
Climate Change Division
Revenue
State and Centre Contribution
Apada Mitra- Training of community volunteers in Disaster Response
Forests
Herbal Nature Park
Agro- forestry under National Mission for sustainable Agriculture (NMSA)
National Afforestation Programme (National Mission for a green India)
Horticulture
Scheme on Micro Irrigation
Irrigation and Water Resources Department
Irrigation Efficiency Scheme under NABARD
Flood Protection and Disaster Preparedness
Flood Protection, Restoration and Disaster Management area in the State

Source: PHD Research Bureau, Compiled from various Sources

4.4.2 Progress on Climate Action and Life below Water Resilience and Adaptability

Haryana is progressing towards developing climate and adaptation measures. In agriculture, the state is scaling up climate resilient agricultural practices with 100 climate smart villages. In irrigation the state is constructing injection wells as are charging scheme throughout the state.





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In order for all people in the state to have drinking water and to also meet the ever-growing needs and demands of upcoming urban areas and industry, the Government of Haryana has developed an extensive canal network of 14,085 km, consisting of 1,461 channels. The state has established a vast network of drainage, 5,144 km in length, consisting of about 801 drains. These combined efforts have made Haryana one of the leading states in the country in terms of contribution to the national food basket and providing drinking water to 100% villages.

District Irrigation Plans leading to the creation of the State Irrigation Plan (SIP) are being worked upon to maximize the development of water sources within the irrigation network, which would enable end-to-end solutions to water shortages through rainwater harvesting, distribution networks and by improving efficiencies within farming technology.

Rehabilitation of 565 water courses throughout the state is being prioritized, in addition to 200 watercourses. An amount of Rs 50 crores would be spent in the next five years to bring in the most appropriate technology to produce real-time data on canals and channels.

4.4.3 Opportunities Ahead

- Haryana has a potential to achieve sustainable agricultural development. Evolution in the state's present agricultural practices that have high consumption of water, fertilizers and pesticides in the fields would help the state to further progress on its agenda of climate action and life below water resilience and adaptability.
- Developing new varieties of water aerobic rice, improved biotic stress tolerant Indian mustard and molecular breeding of chickpea for survival in a drought-prone environment would allow the state to move ahead on climate smart agriculture.
- Judicious utilization and uniform distribution of water resources through efficient management, adoption and maintenance of modern water-saving technologies like sprinkler/drip/pressure irrigation/volumetric measurement, among others would increase the efficiency of water systems of Haryana.

4.4.4 Way Forward

- a. The state is focusing on promoting the coordination between the departments of Environment, Forest and Wildlife; Mines and Geology; Fisheries; Irrigation; Revenue, Disaster Management and Consolidation; Tourism; Agriculture and Horticulture. Together these departments would implement various programmes aimed at fulfilling targets such as:
 - commission studies to assess the vulnerability of climate sensitive sectors and opportunities for adaptation.
 - conduct biophysical, economic and gender impact assessments and develop policies and programmes to mitigate the impact of climate change.





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4.5 Life on Land

4.5.1 Vision- The Government of Haryana will develop and implement adaptation and mitigation measures to address the impact of climate change on forest ecosystems, agriculture, biodiversity, natural resources and future generations. The total amount budgeted in 2018-19 for various development schemes that help in achievement this goal is Rs 247.7 Crore.

Table 15: Major Schemes covered under Life on Land

Environment
<ul style="list-style-type: none"> State Environment Impact Assessment Authority -Establishment Expenses Setting up of Environment Training Institute at Gurugram Establishment of Eco Club Environmental Training Education Awareness Programme
Forests
<ul style="list-style-type: none"> Revitalization of institutions in Aravalli Hills. Herbal Nature Park Development of Agro Forestry Clonal and Non Clonal Afforestation Waste land and Agro Forestry Project Green Belts in urban Areas Wild life Protection in Multiple use Area Extension of Zoo and Deer Parks. Agro- forestry under National Mission for sustainable Agriculture(NMSA) Integrated Development of Wild Life Habitats Strengthening, Expansion and Improvement of Sanctuaries National Afforestation and Forestry / Afforestation activities by State Forest Development Agency (SFDA)
Public Health Engineering Department
National River Conservation Plan
Tourism
Development of Wild Life Tourism in Haryana Under Swaran Jayanti Programme

Source: PHD Research Bureau, Compiled from various Sources

4.5.2 Progress on Life on Land

Environmental Sustainability and Management- Government of Haryana has launched several environment related schemes such as the Mitigating Climate Change and Enhancing Adaptations for Farmers through Agro forestry in Haryana project and the Har Ghar Haryali campaign. These initiatives have contributed to protecting the environment and promoting its sustainable use.

Interventions to Combat Land Degradation- There is a thrust on agro forestry to increase the tree cover. About 150 lakh seedlings are planted every year in the state. Half of these seedlings are planted on institutional lands, panchayat lands, community lands, as well as private farm lands. The rest are planted on government forest lands. Problematic saline, alkaline soils and sand dunes are





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also being reclaimed to increase tree cover and mitigate climate change. The Forest Department has been undertaking bio drainage plantation for the past several years. Alkaline lands are reclaimed by the planting of suitable plant species.

4.5.3 Way Forward

The laborious farmers of Haryana are working towards accelerating the growth of agriculture sector in the state to achieve faster growth in the state economy and harness full potential of the state. Diversification of agriculture and improving the productivity of the workforce engaged in the primary sector would further be prioritized that would reap the positive results for agriculture, employment and the youth. The growth of the agriculture sector is crucial, even in a modern economy, for the overall growth of the state. Accordingly, the Government of Haryana would strive to accelerate the growth rate in the primary sector through interventions focusing on crop and livestock activities.





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5. Conclusions and Recommendations

Haryana is known as the bread basket of India. The state has diverse agro-ecology and cropping pattern. The main agricultural crops produced in the state are rice, wheat, sugarcane, cotton, oilseeds, pearl millet, gram, and barley. Around 60% export of Basmati Rice from India takes place from Haryana. There are three agro-ecoregions which have significant irrigation in the state. The share of agriculture sector (primary sector) in the state's GSVA at current prices has increased to 19.5% in 2016-17. The sector has exhibited tremendous growth of 7% in 2016-17 from 3.2% in 2015-16. Haryana has a potential to achieve sustainable agricultural development by evolving its present agricultural practices that have high consumption of water, fertilizers and pesticides in the fields.

The Government of Haryana policies are pro-farmer and state has an efficient governance system to support farmers. The state can further scale agricultural productivity by initiating reforms in land settlement rules and procedures, boosting capital investments for developing agri-infrastructure, improving environmental services, risk management, providing agricultural credit, insurance and agro-advisory services to the farmers in order to enhance growth trajectory in the coming times. The fast developing rural infrastructure in the State is an additional asset for fully exploiting the potential of agriculture sector. Haryana is emerging as one of the leading states in the field of horticulture. Going ahead, the state is promoting diversification in the farm sector, improving research and development system and upgrading infrastructure as per international standards to harness the emerging opportunities in the agriculture sector of the state.

The state has made significant progress in the agricultural sector over the decades. Cropping intensity and irrigation intensity are significantly high at 182% and 188% respectively. The Government of Haryana introduced Agri-Business and Food Processing Policy 2018 for the state that aims to give the required impetus to the Food processing industry in the state. Further by establishing efficient forward and backward linkages, the policy aims to create greater employment opportunities across the entire food value chain, thus promoting agriculture and rural prosperity. Farmers are being motivated to adopt latest farm technology to increase the farm sector output for which easy credit should be made available to them. However, the existing cooperative societies of Haryana need revitalization for organized credit availability to farmers, marketing and other services in the agriculture sector.

Working towards attaining a convergence and coordination among research and development organizations would pave way for diversification in agriculture and horticulture, especially the vegetables and flowers, livestock, inland aquaculture. This would create new opportunities which would bolster agriculture growth in the state. Organic farming improves soil fertility and increases farm income. Priority should be given to the natural resource management so as to accelerate and sustain agricultural growth in Haryana. A considerable emphasis on scientific land use through





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adoption of conservation agriculture practices in the state would further give impetus to the agriculture sector of the state. Development of peri-urban agriculture and protected cultivation of good quality vegetables and flowers would benefit the farmers in the state. Strengthening of these facilities would provide required seed, health care, feed services, research and human resource support to farmers. Initiation of reforms in case of land settlement rules and procedures, capital investment for infrastructure development, marketing, improved environmental services, risk management, agricultural credit, insurance and agro-advisory services to the farmers would be a positive move for the upliftment of farmers and agricultural economy of the state.

Fish culture as subsidiary occupation is becoming popular among fish farmers of the State. During the year 2017-18 (up to 31st December 2017) an area of 15,446 has been brought under fish culture by stocking of 1,764.5 lakh fish seed against the target of 1,517.4 lakh fish seed and 1,35,841.6 M.T. fish were produced. Framing and execution of conservation policy for fish biodiversity would promote the fisheries in the state. Diversification in fish species needs a promotion through proper research and development. Rural based low cost post harvest processing and value addition for diversified fish products would enhance income of fish farmers in the State. Natural calamity relief measures for fish farming could be extended as in case of crops.

The average growth⁶ of livestock has been 6% over the years. The current growth of livestock sector must be accelerated through progressive policies and balanced emphasis on buffalo, cattle, poultry, fish and dairy sector. Thrust to genetic improvement of local breeds like Murrah, Haryana and Sahiwal would bolster the dairying and animal husbandry sector of the state. The production of A2 milk, unique in these breeds, by value addition of milk products and by production of Mozzarella cheese from Murrah buffalo milk would harness greater benefits to the state. Emphasis on good management and improved feed and fodder resources could also help in faster growth of live stock sector, going forward.

Agriculture is exposed to various risks and uncertainties. Weather and climate conditions have major role to play in agricultural production and profitability. There is a need to prepare programs on managing risk and uncertainty including wide fluctuation in prices and climate change with a specific time frame. For sustaining productivity on a long term basis, land development activities become important. Since farmers have less/no savings and avails production credit, both medium and long term credit supply is affected adversely with practically no infrastructure and land development activities. Hence, innovative scheme to provide medium and long term credit would be highly beneficial to farmers. Availability of easy credit facilities provided to small and marginal farmers to invest in advanced farm techniques would welcome further the farm mechanization in the state.

Strengthening of research on climate smart agriculture would increase the productivity of agriculture in the state. Investment on water conservation and diversion of excess rain/flood

⁶ Author's calculation





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waters to water deficit areas shall be improved. To ensure benefits for all crops and animals existing insurance schemes be expanded and strengthened. Initiation of State Insurance Scheme for major agricultural enterprises, besides availing of provisions under centrally sponsored scheme would be a welcome move. Adequate and timely supply of credit with easy terms and conditions to farmers would enhance production by masses.

4th AGRI LEADERSHIP SUMMIT 2019

The Government of Haryana would be organizing the 4th Agri Leadership Summit-2019 from February 15-17, 2019 at India International Horticulture Market (IIHM), Ganaur in district Sonapat. In the Summit, dignitaries and over 60,000 farmers from across the country and abroad, would participate every day. Initially, the state government had organised the first Agri Leadership Summit in Gurugram for the development of agriculture and farmers. The 2nd Agri Leadership Summit was organised at Surajkund Faridabad in 2017.

The state government decided to organise this Summit every year in the interest of farmers. In 2018, the 3rd Agri Leadership Summit was held in Rohtak. After the success of the 3rd Summit, the state is organising the 4th Agri Leadership Summit 2019 at Ganaur, Sonapat. The summit has become very popular and all the departments are being integrated like Agriculture and Farmers' Welfare, Animal Husbandry and Dairying, Fisheries, agriculture marketing board and other organizations who have direct link to farmers. The summit is a platform for the departments who can exhibit all development plans related to agriculture and allied sectors.

In the 4th Agri Leadership Summit 2019, different themes have been formed based on innovative farming, for making farming a profitable venture. The theme of first day is Innovation and entrepreneurship, in which foodgrains producing farmers have been invited, the second day theme is Kheti Plus, Dhan Plus in which farmers into the business of Poultry, Animal Husbandry and Fisheries have been invited. The theme of the third day is Direct Marketing and Agri Service in which farmers have been invited under horticultural format for making farming a profitable business.

In the 4th Agri Leadership Summit 2019, the state government would honour the farmers with new award Haryana Kisan Ratna Samman to encourage them. This award would carry a cash prize of Rs 5 lakh and a citation and would be given to a farmer for his outstanding work in the field of agriculture development. This award can also be given to farmers, institutions, universities, departments and scientists working for the development of agriculture and farmers.





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The Research Bureau has been instrumental in forecasting various lead economic indicators national and sub-national. Many of its research reports have been widely covered by media and leading newspapers. Recently, the Research Bureau has undertaken various policy projects of Government of India including Framework of University-Industry Linkages in Research assigned by DSIR, Ministry of Science & Technology, Study on SEZ for C&AG of India, Study on Impact of Project Imports under CTH 9801 for C&AG of India, among others.

Research Activities	Comments on Economic Developments	Newsletters	Consultancy
<ul style="list-style-type: none"> Research Studies 	<ul style="list-style-type: none"> Macro Economy 	<ul style="list-style-type: none"> Economic Affairs Newsletter (EAC) 	<ul style="list-style-type: none"> Trade and Investment Facilitation Services (TIFS)
<ul style="list-style-type: none"> State Profiles 	<ul style="list-style-type: none"> States Development 	<ul style="list-style-type: none"> Forex and FEMA Newsletter 	
<ul style="list-style-type: none"> Impact Assessments 	<ul style="list-style-type: none"> Infrastructure 	<ul style="list-style-type: none"> Global Economic Monitor (GEM) 	
<ul style="list-style-type: none"> Thematic Research Reports 	<ul style="list-style-type: none"> Foreign exchange market 	<ul style="list-style-type: none"> Trade & Investment Facilitation Services (TIFS) newsletter 	
<ul style="list-style-type: none"> Releases on Economic Developments 	<ul style="list-style-type: none"> International Trade 	<ul style="list-style-type: none"> State Development Monitor (SDM) 	
	<ul style="list-style-type: none"> Global Economy 	<ul style="list-style-type: none"> Industry Development Monitor (IDM) 	





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Studies Undertaken by PHD Research Bureau

A: Thematic research reports

1. Comparative study on power situation in Northern and Central states of India (September 2011)
2. Economic Analysis of State (October 2011)
3. Growth Prospects of the Indian Economy, Vision 2021 (December 2011)
4. Budget 2012-13: Move Towards Consolidation (March 2012)
5. Emerging Trends in Exchange Rate Volatility (Apr 2012)
6. The Indian Direct Selling Industry Annual Survey 2010-11 (May 2012)
7. Global Economic Challenges: Implications for India (May 2012)
8. India Agronomics: An Agriculture Economy Update (August 2012)
9. Reforms to Push Growth on High Road (September 2012)
10. The Indian Direct Selling Industry Annual Survey 2011-12: Beating Slowdown (March 2013)
11. Budget 2013-14: Moving on reforms (March 2013)
12. India- Africa Promise Diverse Opportunities (November 2013)
13. India- Africa Promise Diverse Opportunities: Suggestions Report (November 2013)
14. Annual survey of Indian Direct Selling Industry-2012-13 (December 2013)
15. Imperatives for Double Digit Growth (December 2013)
16. Women Safety in Delhi: Issues and Challenges to Employment (March 2014)
17. Emerging Contours in the MSME sector of Uttarakhand (April 2014)
18. Roadmap for New Government (May 2014)
19. Youth Economics (May 2014)
20. Economy on the Eve of Union Budget 2014-15 (July 2014)
21. Budget 2014-15: Promise of Progress (July 2014)
22. Agronomics 2014: Impact on economic growth and inflation (August 2014)
23. 100 Days of new Government (September 2014)
24. Make in India: Bolstering Manufacturing Sector (October 2014)
25. The Indian Direct Selling Industry Annual Survey 2013-14 (November 2014)
26. Participated in a survey to audit SEZs in India with CAG Office of India (November 2014)
27. Role of MSMEs in Make in India with reference to Ease of Doing Business in Ghaziabad (Nov 2014)
28. Exploring Prospects for Make in India and Made in India: A Study (January 2015)
29. SEZs in India: Criss-Cross Concerns (February 2015)
30. Socio-Economic Impact of Check Dams in Sikar District of Rajasthan (February 2015)
31. India - USA Economic Relations (February 2015)
32. Economy on the Eve of Union Budget 2015-16 (February 2015)
33. Budget Analysis (2015-16)
34. Druzhba-Dosti: India's Trade Opportunities with Russia (April 2015)
35. Impact of Labour Reforms on Industry in Rajasthan: A survey study (July 2015)
36. Progress of Make in India (September 2015)
37. Grown Diamonds, A Sunrise Industry in India: Prospects for Economic Growth (November 2015)
38. Annual survey of Indian Direct Selling Industry 2014-15 (December 2015)
39. India's Foreign Trade Policy Environment Past, Present and Future (December 2015)
40. Revisiting the emerging economic powers as drivers in promoting global economic growth (February 2016)
41. Bolstering MSMEs for Make in India with special focus on CSR (March 2016)
42. BREXIT impact on Indian Economy (July 2016)





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43. India's Exports Outlook (August 2016)
44. Ease of Doing Business : Suggestive Measures for States (October 2016)
45. Transforming India through Make in India, Skill India and Digital India (November 2016)
46. Impact of Demonetization on Economy, Businesses and People (January 2017)
47. Economy on the eve of Budget 2017-18 (January 2017)
48. Union Budget 2017-18: A budget for all-inclusive development (January 2017)
49. Annual Survey of Indian Direct Selling Industry 2015-16 (February 2017)
50. Worklife Balance and Health Concerns of Women: A Survey (March 2017)
51. Special Economic Zones: Performance, Problems and Opportunities (April 2017)
52. Feasibility Study (socio-Economic Survey) of Ambala and Rohtak Districts in Haryana (March 2017)
53. Goods and Services (GST): So far (July 2017)
54. Reshaping India-Africa Trade: Dynamics and Export Potentiality of Indian Products in Africa (July 2017)
55. Industry Perspective on Bitcoins (July 2017)
56. Senior Housing: A sunrise sector in India (August 2017)
57. Current state of the economy (October 2017)
58. Equitable finance to fulfill funding requirements of Indian Economy (October 2017)
59. The Wall of Protectionism: : Rise and Rise of Protectionist Policies in the Global Arena, (November 2017)
60. India-Israel Relations: Building Bridges of Dynamic Trade(October 2017)
61. Role of Trade Infrastructure for Export Scheme (TIES) in Improving Export Competitiveness (November 2017)
62. India - China Trade Relationship: The Trade Giants of Past, Present and Future (January 2018)
63. Analysis of Trade Pattern between India and ASEAN(January 2018)
64. Union Budget 2018-19 – (February 2018)
65. Ease of Doing Work for Women: A survey of Delhi NCR (February 2018)
66. Restraining Wilful Defaults: Need of the hour for Indian Banking System (March 2018)
67. Impact of GST on Business, Industry and Exporters (April 2018)
68. India – Sri Lanka Bilateral Relations: Reinforcing trade and investment prospects (May 2018)
69. Growth Prospects of the Indian Economy: Road to US \$5 Trillion Economy(May 2018)
70. India's Free Trade Agreements Dynamics and Diagnostics of Trade Prospects(May 2018)
71. India – UK Trade Relations and Societal Links: Way Forward (June 2018)
72. Rural Economy: Road to US \$5 Trillion Economy(September 2018)
73. Indian Economy on the Eve of Union Budget 2019-20 (Interim): Steady...strong...fastest moving economy (January 2019)

B: State profiles

74. Rajasthan: The State Profile (April 2011)
75. Uttarakhand: The State Profile (June 2011)
76. Punjab: The State Profile (November 2011)
77. J&K: The State Profile (December 2011)
78. Uttar Pradesh: The State Profile (December 2011)
79. Bihar: The State Profile (June 2012)
80. Himachal Pradesh: The State Profile (June 2012)
81. Madhya Pradesh: The State Profile (August 2012)
82. Resurgent Bihar (April 2013)
83. Life ahead for Uttarakhand (August 2013)
84. Punjab: The State Profile (February 2014)





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85. Haryana: Bolstering Industrialization (May 2015)
86. Progressive Uttar Pradesh: Building Uttar Pradesh of Tomorrow (August 2015),
87. Suggestions for Progressive Uttar Pradesh (August 2015)
88. State profile of Telangana- The dynamic state of India (April 2016)
89. Smart Infrastructure Summit 2016- Transforming Uttar Pradesh (August 2016)
90. Smart Infrastructure Summit 2016-Transforming Uttar Pradesh : Suggestions for the State Government (August 2016)
91. Rising Jharkhand: An Emerging Investment Hub (February 2017)
92. Punjab: Roadmap for the New Government Suggestions for the Industrial and Socio-Economic Development – Focus MSMEs ease of doing business (May 2017)
93. Prospering Himachal Pradesh: A Mountain of Opportunities (August 2017)
94. Kashmir: The way forward (February 2018)
95. Analysis of State Budgets for 2018-19: Select States (March 2018)
96. Rising Uttar Pradesh One District One Product Summit (August 2018)
97. Rajasthan: Steady Strides into the Future- Emerging Growth Dynamics and the Way Forward (September 2018)
98. Rising Jharkhand: Economic Profile (January 2019)
99. Rising Jharkhand: Skill Development to Spur Socio-Economic Growth (January 2019)





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