CURRENT TRENDS IN AGRI-BUSINESSS AND ITS CONDITION IN INDIA

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Abstract

Agriculture is an important part of India's economy and at present it is among the top two farm producers in the world. Over 70 per cent of the rural households depend on agriculture. Agriculture is an important sector of Indian economy as it contributes about 17% to the total GDP and provides employment to over 60% of the Indian population. India is projected to grow faster than China for the first time in 25 years. At the end of 2018, India has reflected on the trends as they have been. In 2019 the agribusiness trends are a mixer of continuation of some on-going ones and other unexpected developments. The digitalisation of agribusiness involves leveraging the massive amounts of data to automate agriculture and play a key role in meeting global food demand. A growing number of technology industry experts, entrepreneurs and investors have taken notice of the digital agriculture opportunity and are investing in agriculture technology.

Keywords: *Digital Agriculture, Agribusiness, Digitalisation, Technology*

INTRODUCTION

India is the world's largest producer of pulses, rice, wheat, spices and spice products. India has many areas to choose for business such as dairy, meat, poultry, fisheries and food grains etc. India has emerged as the second largest producer of fruits and vegetables in the world.

Internet usage by 2020 in rural India is expected to be 315 million and it may lead to penetration in rural areas and that would be the inflection point for the agtech market in India. Agriculture startups can unleash umpteen opportunities to strengthen the supply chain in Indian agriculture. We really need to move with a sense of urgency to apply these new tools to accelerate the pace of agriculture development. Digitalisation has changed how the agriculture business is operating, from the way dairy farmers tend their cows and get micro-insurance against bad weather to how they determine the most scientifically optimal time to plant crops. The digitalisation of agribusiness, which involves leveraging the massive amounts of data from agricultural equipment, soil, weather, seeds and chemicals and using modern computer science to automate agriculture, is playing a key role in meeting global food demand.

A growing number of technology industry experts, entrepreneurs and investors have taken notice of the digital agriculture opportunity and are investing in agriculture technology. However, there is still a digital divide in agriculture, not only with technological infrastructure and connectivity, but also in terms of an ineffective knowledge exchange, management of information content and the diverse needs of different groups.

REVIEW OF LITERATURE AND RESEARCH DESIGN

Chand and Raju,, (2009) traces instability in Agricultural and food production and high risks involved in farm production; it affects farmer's income and decision in farming. Instability in area, reduction and yield of important crops and crop aggregates **Dholakia, (2010),** shows first time a statistically significant trend growth rate of 4.7percent per annum with considerably low extent of fluctuation compared to previous decade. **Samar Datta,(2010)** , needs to pursue a diversified set of activities – not only a diversified cropping pattern less dependent of soil water moisture regimes, but also diversified allied agricultural activities, especially animal husbandry. **Joshi (2012)** discussed the need for application of science and technology in Indian agriculture sector. Its absence is the major cause of declining production, lack of insfitutional finance, crisis in irrigafion facilities, collapsing agriculture extension, problems in agricultural marketing, degradation of land resources and climate change. NGO and government sector to overcome the problems. Internet, mobile telephony, FM radio could be the enabling tools for accessing information related to agro inputs, crop production technologies, agro processing, market support, agro finance, agro clinics and agribusiness through integrated use of these technologies. **Pray and Nagarajan (2012)** presented a comparative study on the development, use and research innovations in agribusiness in India. **Ferroni and Zhou (2012)** discussed the purpose of extension with respect to farmers 'in dissemination of knowledge. Farmers experienced a knowledge gap of services and quality inputs, information of price and markets, post harvest management, quality production and safety standards. Extension can generate the best and desired outcomes. **Dethier and Effenberger (2012)** reviewed the economic literature on land markets, research on seeds and inputs, agricultural extension, credit, rural infrastructure, connection to markets, food price and such other aspects. Agriculture faces mamly two challenges; the first one is to increase food productivity and production in developing countries. The other one is extension services etc. **Armstrong et al (2010)** developed a framework to support decision making of farmers. The development of this fi-amework followed earlier attempts to identify agricultural information dissemination frameworks and discussed the delivery process of location specific expert agricultural knowledge to farming communities in India. Internet and mobile technologies could better contribute in providing appropriate knowledge to farmers. **Okello et al (2010)** developed a framework to analyze the role of ICT on agricultural commercialization and empirically tested the factors to reduce the marketing cost for farm households. **Chisita (2010)** discussed the impact and scope of ICTs in dissemination of agricultural information and production among small scale farmers. **Aii and Kumar (2010)** empirically analyzed the role of E-choupal initiative in enhancing farmer's decision making capabilities. **Islam and Tsujl (2011)** discussed the community information centers (CICs) to bridge the digital divide in Bangladesh. Internet was the most effective technology used in reducing the information gap. **Kameswari et al (2011)** discussed the information seeking behavior of farming community. **AM (2011)** discussed the role of mass media in farmer's decision making of vegetable growers in Uttar Pradesh and empirically analyzed the factors affecting the adoption of information. **Lwoga et al (2011)** investigated the application of ICTs in the improvement of farming activities in rural areas of Tanzania. **Kiiza and Pederson (2012)** discussed the factors affecting access to ICT based market information and its intensity of adoption. **Ali (2012)** discussed the factors of ICT adoption at all the stages of agriculture supply chain (crop planning and production, post harvest and storage, sales and marketing). **Matous et.al (2013)** addressed the socio-political factors that affect e-agriculture adoption in Ethiopia and its ecosystem. **Biswas & Prakash (2015)** also proposed an agricultural based "sensorics and indicative system technology" for the Indian region, the system was designed to read soil moisture levels, standing water levels, PH levels of soil, Humidity & temperature. **Alemu & Negash (2015)** used a quantitative approach through the use of questionnaires based on a UTAT model to find out the factors that affect the adoption of marketing information systems by farmers, traders and other parties.

An extensive reviews have given the gap that many scholars have witnessed to express the growth, trends and the scope of the agriculture but not emphasised mainly for the last five years i.e., 2015-2019 the improvements happened in the agriculture and agribusiness in India and how it has benefitted to the economy of the country. The scope of entrepreneurs to start the agribusiness in the respective agri domains are also expressed.

Objectives of the Study

1. To study on the current Status of Indian Agriculture.

2. To study on the importance of agriculture in Indian Economy

3. To study on the scope of Agribusiness in India

4. To know the current trends in agribusiness and road ahead for agribusiness in India

5. To know the Government Initiatives of Agribusiness in India

The study is an exploratory cum descriptive study as it has explored the information on the current status of Indian agriculture and its trends and the scope and described briefly on the government initiatives of agribusiness in India. The study has extensively used the secondary source to collect the data referring through annual journals, ministry of agricultural board reviews, discussions and opinions too.

The researcher has used the convenience sampling method, as the study is a purely a secondary source of information and the information updated is from the period of the last five years trends in agriculture and agribusiness in India.

CURRENT STATUS OF INDIAN AGRICULTURE

Agriculture is the primary occupation of India and is the primary source of livelihood for about 58 % of India population. The Indian food industry is increasing its contribution to the world food trade every year due to its immense potential for value addition. Indian food and grocery market is the world's sixth largest contributing 70% of the sales. It is ranked fifth in terms of production, consumption, export and expected growth. India is the second largest fruit producer in the world. Total agricultural exports from India grew at a CAGR of 16.45 % over FY 2010-2018. India is also the largest producer, consumer and exports of spice and spice products. Similarly in Tea and Coffee production too India has taken a lead to move a ahead.

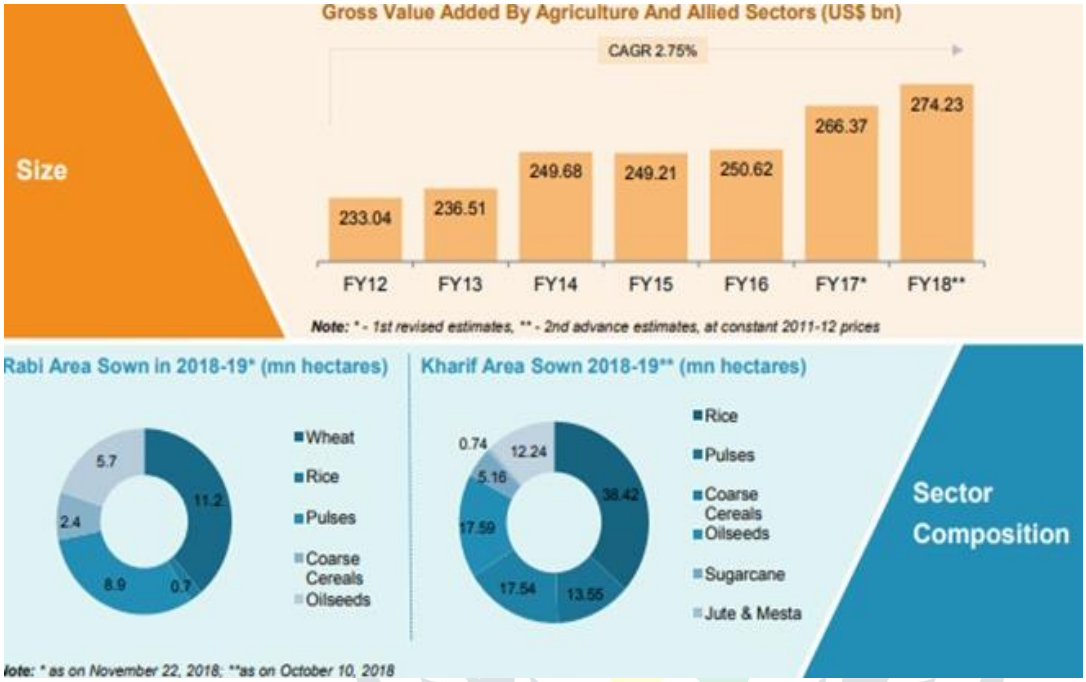
India is projected to grow faster than China for the first time in 25 years. At the end of 2018, India has to reflect on the trends as they have been. In 2019 the agribusiness trends are a mixer of continuation of some on-going ones and other unexpected developments. Technology in agriculture has rapidly changed the industry. The Agriculture industry has to embrace the digital transformation in the agriculture. Growers has been accessing to the right information at the right time, which are gaining to the insight that is helping to improve their production exponentially. Government and the private sector are likely to invest in infrastructure and technology enablement of areas such as quality, traceability, logistics and distribution.

GROWTH OF AGRICULTURE IN INDIAN ECONOMY

India is the largest producer of spices, pulses, milk, tea, cashew and jute. It is the second largest producer of wheat, rice, fruit, vegetables, sugarcane, cotton and oilseeds. India was the ninth largest exporter of agricultural products in 2017.

India is second in global production of fruits, vegetables amongst that India is the largest producer of mango and banana. India is among the 15 leading exporters of agricultural products in the world. The new Agricultural Export policy agreed upon in December 2018 aims to increase India's agricultural exports to US$ 60 billion by 2022.

The Electronic National Agriculture Market (eNAM) was launched in April 2016 to create a unified national market for agricultural commodities by networking existing Agriculture Produce Marketing Committees (APMCs). Up to May 2018, 9.87 million farmers, 109,725 traders were registered on the e- NAM platform. 585 mandis in India have been linked while 415 additional mandis will be linked in 2018- 19 and 2019-20. Cumulative trade on the platform reached Rs 41,855 crore (US$ 6.49 billion) by March 2018. Under Union Budget 2018-19, an Agri-Market Infrastructure Fund was announced to develop and upgrade the infrastructure in 22,000 Grameen Agricultural Markets (GrAMs) and 585 APMCs. 42 mega food parks have been sanctioned as of 2017 out of which eight had been made operational as of July 2018.



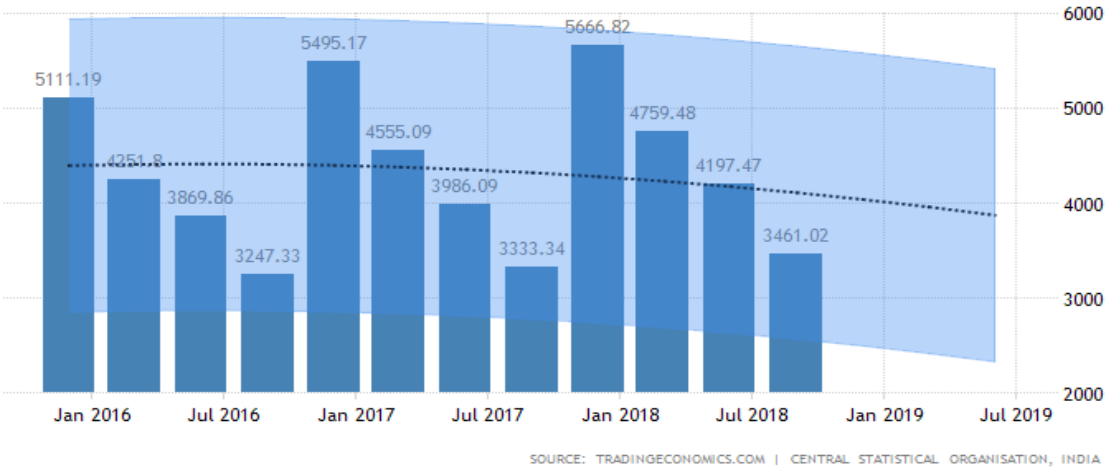
Source : www.ibef.org

IMPORTANCE OF AGRICULTURE IN INDIAN ECONOMY:

Agri-business has been playing an important role in India economy, and has still given the contribution of agriculture in the development of Indian economy, which can be measured and gauged by the following facts and figures.

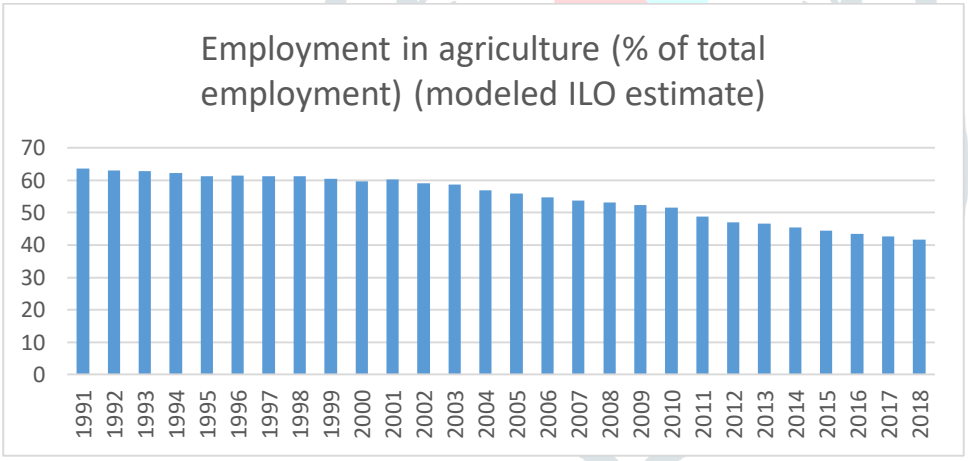
- **Agricultural influences on National Income**

  The contribution of agriculture is at 2.1 % growth rate in 2017-18 and the industry is at 4.4% and its services are 8.3% (Economic survey 2017-18). GDP from agriculture in India decreased to 3461.02 INR billion in the third quarter of 2018 from 4197.47 INR billion in the second quarter of 2018. GDP from agriculture in India has averaged 4037.84 INR billion from 2011-2018. It has been expected to be 6097.00 by the end of the 2019 quarter. It has been projected to around 6968.00 INR Billion in 2020, according to trading economics global macro models and analysts expectations.



- **Agriculture plays vital role in generating employment**

Employment is defined as persons of working age who were engaged in any activity to produce goods or services for pay or profit, whether at work during the reference period or not at work due to temporary absence from a job, or to working – time arrangement. The agriculture sector consists of activities in agriculture, hunting, forestry and fishing, in according with division 1 ((ISIC 2) or categories A-B (ISIC 3) or category A (ISIC 4). The world bank provides data for India from 1991 to 2018, the average value for India was 41.66 per cent in 2018 and 42.74 per cent and where it was 63.59 per cent in 1991, which implies there is a sloping down in growth rate of employment in Agriculture, though its contribution for GDP is marginally significant to the economy.



Source : data.worldbank.org/indicator/SL.AGR.EMPL.ZS,
World Development Indicators, Updated as on 31-01-2019

- **Agriculture makes provision for food for the ever increasing population**

The excessive pressure of population, there is an increase in the demand for food and its production which increases at a fast rate. The existing levels of food consumption is low and with a little increase in the capita income. India, there are inequality of incomes between the rural and urban areas which draws people away from agricultural production and places great stress upon the infrastructure and social services. However the liberalisation as part of economic structural adjustment programmes (ESAPs) and the encouragement of a competitive private sector and the commercialisation and sometimes privatisation have to function smooth. The key players in the chain of activities that connect food and agriculture are the farmer or other producers, intermediaries, the food processors, and the consumer. In practice they see the agricultural or food marketing system from a perspective of self-interest are sometimes in conflicts. The farmers' interest is focussed on getting the best

return from his produce, which usually equates to maximum price for unlimited quantities. Manufacturers want least cost, best quality produce from the farmer so that he can sell it at competitive, but profitable, prices. Traders and retailers want high quality and reliable supplies from the manufacturer or farmer, at the most competitive prices, whereas consumers are interested in obtaining high quality products at low prices. The conflicts are expressed in a tabular form.

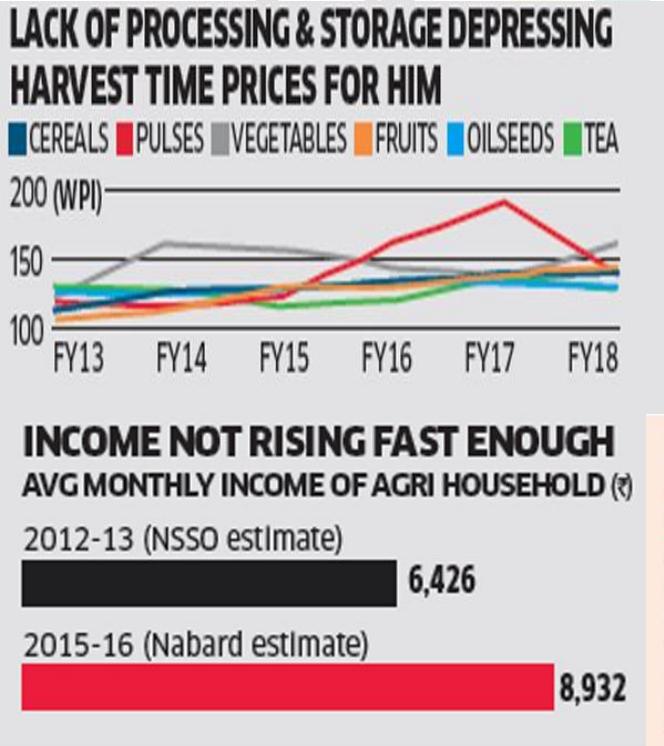
Key Players	Interests
Farmers	Maximum price, unlimited quantities
Manufacturers	Low purchase price, high quality
Traders and retailers	Low purchase price, high quality
Consumers	Low purchase price, high quality

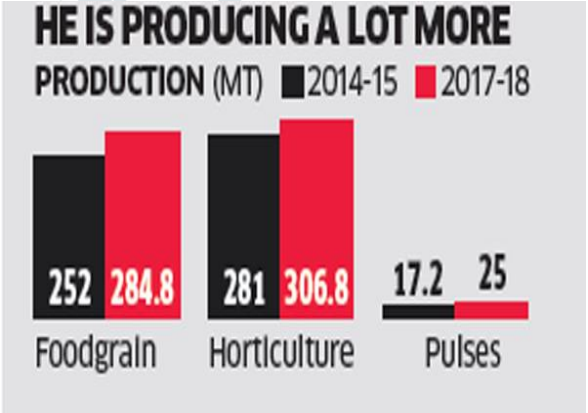
4. Contribution to Capital Formation:

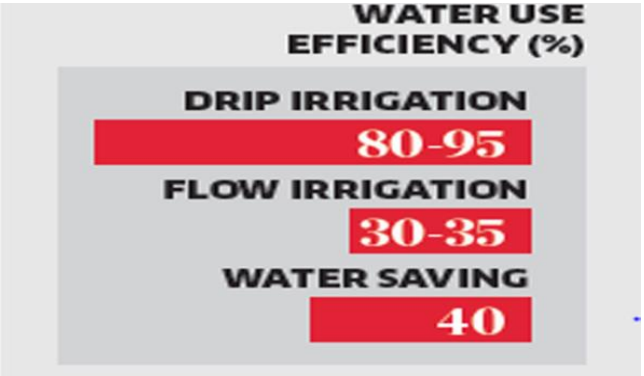
India's primary occupation is on agriculture and agriculture and its business is an indicator in the measurement of economic growth. There is a high need on integration of land reforms, green revolution, size productivity based on the farm size and farm output.

Though government has taken the initiative of e-NAM "one nation one market" and look forward for the capital formation as few states of the country are not ready to take up the initiative as the Government has not made it as mandatory.

The problems of the agri-business are given in the infographics :







Source : Economic Times

SCOPE FOR AGRIBUSINESS IN INDIA

Agriculture in India is dominant with well developed agriculture based industries. Indian food and agri sector is set to triple by 2020 from US $ 328 to US$ 895 Billion (IIFAMA, 2012).

Agribusiness means production, transformation / value adding, distribution and retailing of food, fibre and associated products. Agribusiness are attracting investments in primary production as well as on the output side in food processing and distribution. Growth in agribusiness industry is mainly fuelled by sustained economic growth, rising per capital income, urbanisation and globalisation, integration of the global food value chain, improvement in infrastructure for storage and transportation.

The career in agribusiness can seek into a multitude of industries as well, including farming, real estate, retail marketing, food processing, food production and farming industry. The Government intervention is in the form of taxes, trade barriers, etc., for agribusiness which is different from other business sectors.

THE MAJOR TRENDS IN AGRICULTURE BUSINESS ARE :

In India, where the farmer is not yet equipped with the latest technology nor trained to adopt it fast, digital farming is slowly entering Indian farms to assist farmers in better decision making. More than 60% of the agriculture is on water resources, they are mostly relying on water resources irrespective of the last is irrigable or not. However, in India 47% of agricultural land is irrigated. Farmers are always challenged to grow more while coping with volatile weather to meet the rising demand for more food of higher quality. This demands improving efficiency on inputs and outputs and various technologies have evolved in order to improve the efficiency. The situations like procurement mechanism, post-harvest handling and storage, processing of produce, market development, logistics services and distribution needs an impact in an average farmer. The cold chain network is highly disaggregated and operates on thin margins.

The agricultural sector has witnessed the infusion of digital intervention. It needs transform the entire input supply chain, crop management cycle, storage and market access, where the innovators or start-ups can pop up on the afore mentioned areas. The business has to be concentrated in precision agriculture, traceability, climate smart agriculture, creation of digital platforms and natural resource management. The digitalisation of agribusiness, which involves leveraging the massive amounts of data from agricultural equipment, soil, weather, seeds and chemicals and using modern computer science to automate agriculture, is playing a key role in meeting global food demand. Growers with access to the right information at the right time are gaining access to insight that is helping to improve their production exponentially.

A growing number of technology industry experts, entrepreneurs and investors have taken notice of the digital agriculture opportunity and are investing in agriculture technology. Indian agtech start-ups—nearly 300 of them—in the hunt for a sustainable farming solution to a rapidly rising population are changing the face of agriculture, one step at a time. With the global smart farming market set to grow at a compound annual growth rate of 13.27% to reach $12 billion by 2021, India is at the threshold as it is home to one-fifth of the global smallholder farmers.

There is still a digital divide in agriculture, not only with technological infrastructure and connectivity, but also in terms of an ineffective knowledge exchange, management of information content and the diverse needs of different groups. Amidst this digitalisation, there is still a lag in understanding certain aspects of agriculture operations, such as: How to improve the yield and quality? How to avoid crop diseases? Is the crop in a healthier condition? Will the payment be made on time?
Let us discuss how digitalisation can address the challenges of crop yield and optimising the yield.

RECENT MAJOR GOVERNMENT INITIATIVES IN THE SECTOR ARE AS FOLLOWS:

- The Electronic National Agriculture Market (eNAM) was launched in April 2016 to create a unified national market for agricultural commodities by networking existing Agriculture Produce Marketing Committees (APMCs).
- The Agriculture Export Policy, 2018 was approved by Government of India in December 2018. The new policy aims to increase India's agricultural exports to US$ 60 billion by 2022 and US$ 100 billion in the next few years with a stable trade policy regime.
- In September 2018, the Government of India announced Rs 15,053 crore (US$ 2.25 billion) procurement policy named 'Pradhan Mantri Annadata Aay SanraksHan Abhiyan' (PM-AASHA), under which states can decide the compensation scheme and can also partner with private agencies to ensure fair prices for farmers in the country.
- In September 2018, the Cabinet Committee on Economic Affairs (CCEA) approved a Rs 5,500 crore (US$ 820.41 million) assistance package for the sugar industry in India.
- The Government of India is going to provide Rs 2,000 crore (US$ 306.29 million) for computerisation of Primary Agricultural Credit Society (PACS) to ensure cooperatives are benefitted through digital technology.
- With an aim to boost innovation and entrepreneurship in agriculture, the Government of India is introducing a new AGRI-UDAAN programme to mentor start-ups and to enable them to connect with potential investors.
- The Government of India has launched the Pradhan Mantri Krishi Sinchai Yojana (PMKSY) with an investment of Rs 50,000 crore (US$ 7.7 billion) aimed at development of irrigation sources for providing a permanent solution from drought.
- The Government of India plans to triple the capacity of food processing sector in India from the current 10 per cent of agriculture produce and has also committed Rs 6,000 crore (US$ 936.38 billion) as investments for mega food parks in the country, as a part of the Scheme for Agro-Marine Processing and Development of Agro-Processing Clusters (SAMPADA).
- The Government of India has allowed 100 per cent FDI in marketing of food products and in food product e-commerce under the automatic route.
- Pradhanmantri Gram Sinchai Yojana aims to irrigate the field of every farmer and improving water use efficiency to achieve the motto `Per Drop More Crop'. Overall the scheme ensures improved access to irrigation. Around 285 new irrigation projects will be undertaken in 2018 to provide irrigation for 18.8 million hectares of land. As per Union Budget 2018-19 the scheme has been allocated US$ 401.6 million.
- Paramparagat Krishi Vikas Yojana (PKVY): The scheme aims to motivate groups of farmers to take up organic farming.

EXPECTATIONS IN 2019 IN AGRIBUSINESS IN INDIA :

India is expected to achieve the ambitious goal of doubling farm income by 2022. The growing use of genetically modified crops will likely improve the yield for Indian farmers. India is expected to be self-sufficient in pulses in the coming few years due to concerted efforts of scientists to get early-maturing varieties of pulses and the increase in minimum support price. The government of India targets to increase the average income of a farmer household at current prices to Rs 219,724 (US$ 3,420.21) by 2022-23 from Rs 96,703 (US$ 1,505.27) in 2015-16. Going forward, the adoption of food safety and quality assurance mechanisms such as Total Quality Management (TQM) including ISO 9000, ISO 22000, Hazard Analysis and Critical Control Points (HACCP), Good Manufacturing Practices (GMP) and Good Hygienic Practices (GHP) by the food processing industry will offer several benefits.

- From a digital agriculture perspective, the focus will be on strengthening the supply chain of the sector. Government and private sector is likely to invest in infrastructure and technology enablement of areas such as quality, traceability, logistics and distribution.
- Climate risk mitigation strategy needs to be evolved i.e., effective water management or adopting to rising temperatures of facing drought situations, where the private sector needs to move from an existing mandatory CSR perspective.
- The start-ups can focus on developing the ecosystem and creating of digital agriculture.
- Farmers producing organisations (FPOs) need to be a streamlined process and market like insurance terms, transit insurance for farm produce, quality assessment, infrastructure, precision agriculture solutions for better crop management, etc.
- Improvisation of transparent way of loan waivers aimed at incentivising water conservation.
- Entrepreneurial opportunities in Modern Agriculture are tabulated below :

Farming(on farm)	Product Marketing	Inputs Marketing	Processing	Facilitative
Crop	Wholesale	Ferilizer	Milk	Research & Developement
Dairy/Poultry/ Goat	Retail	Agrl. Chemicals	Fruits	Marketing Information
Fish	Commission Agent	Seeds	Vegetables	Quality control
Rabbit	Transport	Machineries	Paddy	Insurance
Vegetables	Export	Animal feed	Sugarcane	Energy
Flowers	Finance	Poultry hatchery	Cashew	
Ornamental plants	Storage	Vetmedicines	Coir	
Palmrosa	Consultancy	Landscaping	Poutry	
Fodder		Agrl.credit	Cattle	
Sericultue		Custom service	Tannery	
Agro-forestry		Bio-control units	Brewery	
Beekeeping		Bio-tech units	P. board	
Mushroom				

CONCLUSION

Indian agtech start-ups—nearly 300 of them—in the hunt for a sustainable farming solution to a rapidly rising population are changing the face of agriculture, one step at a time. With the global smart farming market set to grow at a compound annual growth rate of 13.27% to reach $12 billion by 2021, India is at the threshold as it is home to one-fifth of the global smallholder farmers. Challenges for the economy include addressing infrastructural bottlenecks in the agricultural sector, investment in human resources to leverage the demographic dividend, increasing expenditure on education and healthcare sectors, and social security provision for the unorganized sector.

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