Agriculture and Food Management

07
CHAPTER

Agriculture and its allied sectors still remain an important sector because of its continued role in employment, income and most importantly in national food security. Its contribution to national income has gradually declined from 18.2 per cent in 2014-15 to 16.5 in 2019-20, reflecting the development process and the structural transformation taking place in the economy. The realisation of the objective of doubling farmer's income requires that the challenges of the sector such as access to credit, insurance coverage, irrigation facilities, etc. are addressed. There is also a need to address the issue of lower farm mechanisation in India which is only about 40 per cent as compared to about 60 per cent in China and around 75 per cent in Brazil. Given the fact that the livestock sector has grown at a compound annual growth rate of nearly 8 per cent over the last five years, it assumes an important role in income, employment and nutritional security. Though, the food processing sector is growing at an average annual growth rate of more than 5 per cent over the last six years ending 2017-18, more focussed attention to the sector is required due to its significant role in reducing post-harvest losses and creation of additional market for farm outputs. With the implementation of the National Food Security Act from July 2013, the food subsidy bill has increased from ₹ 113171.2 crore in 2014-15 to ₹ 171127.5 crore in 2018-19. India's food management should focus on rationalisation of food subsidy while addressing the challenges of food security, especially of the most vulnerable sections.

INTRODUCTION

7.1 Economic transformation of a developing country like India crucially depends on the performance of its agriculture and allied sector. This sector plays a significant role in rural livelihood, employment and national food security. It happens to be the largest source of livelihoods in India. Proportion of Indian population depending directly or indirectly on agriculture for employment opportunities is more than that of any other sector in India. As high as 70 percent of its rural households still depend primarily on agriculture for their livelihood, with 82 percent of farmers being small and marginal[1]. The objective of inclusiveness in development has to be realised through a focus on rural development where agriculture can deliver significantly. For Government's focus on doubling farmers' income, a number of measures are being undertaken ranging from income support schemes, crop insurance, water conservation, waste management techniques to agriculture marketing reforms.

1. FAO, India at a glance, http://www.fao.org/india/fao-in-india/india-at-a-glance/en/.

OVERVIEW OF AGRICULTURE

Share in Gross Value Added in Agriculture

7.2 The share of agriculture and allied sectors in the Gross Value Added (GVA) of the country at current prices has declined from 18.2 per cent in 2014-15 to 16.5 per cent in 2019-20 (Table 1). The share of agriculture and allied sectors in the total GVA of the country has been declining on account of relatively higher growth performance of non-agricultural sectors. This is a natural outcome of development process that leads to faster growth of non-agricultural sectors owing to structural changes taking place in the economy.

Table 1: Share of Agriculture and Allied Sectors in total GVA of the Country at Current Prices

Items	Year					
	2014-15	2015-16*	2016-17#	2017-18@	2018-19**	2019-20$
GVA of agriculture and allied sectors (₹ in Crore)	2093612	2227533	2496358	2670147	2775852	3,047,187
Share of GVA of agriculture & allied sectors in GVA of total economy (per cent)	18.2	17.7	17.9	17.2	16.1	16.5
Share of crops	11.2	10.6	10.6	10.0	-	-
Share of livestock	4.4	4.6	4.8	4.9	-	-
Share of forestry & logging	1.5	1.5	1.4	1.2	-	-
Share of fishing	1.0	1.1	1.1	1.1	-	-

Source: Central Statistics Office (CSO), Ministry of Statistics and Programme Implementation (MoSPI)
Note: **As per the press note on Provisional Estimates of Annual National Income 2018-19 and Quarterly Estimates of Gross Domestic Product for the Fourth Quarter (Q4) of 2018-19 released by CSO on 31st May 2019.
@ As per the First Revised Estimates of National Income, Consumption Expenditure, Saving and Capital Formation for 2017-18 released on 31st January, 2019. # Second Revised Estimate. * Third Revised Estimate
$ First Advance Estimate 2019-20.

Growth in Agriculture & Allied Sectors

7.3 The growth of GVA of agriculture and allied sectors has witnessed a fluctuating trend. GVA at constant (2011-12) prices for 2019-20 from 'Agriculture, Forestry and Fishing' sector is estimated to grow by 2.8 per cent as compared to growth of 2.9 per cent in 2018-19 (Table 2).

Table 2: Agriculture sector – Key indicators of Growth at constant (2011-12) prices (in per cent)

Year	Growth of GVA of total economy	Growth of GVA of agriculture & allied sectors
2013-14	6.1	5.6
2014-15	7.2	-0.2
2015-16*	8.0	0.6
2016-17#	7.9	6.3
2017-18@	6.9	5.0

2018-19**	6.6	2.9
2019-20$	4.9	2.8

Source: CSO, MoSPI

Note: **As per the press note on Provisional Estimates of Annual National Income 2018-19 and Quarterly Estimates of GDP for Q4 of 2018-19 released by CSO on 31st May 2019.

@ As per the First Revised Estimates of National Income, Consumption Expenditure, Saving and Capital Formation for 2017-18 released on 31st January, 2019. # Second Revised Estimate. * Third Revised Estimate.

$ First Advance Estimate 2019-20.

Gross Capital Formation (GCF) in Agriculture

7.4 The GCF in agriculture and allied sectors relative to GVA in this sector has been showing a fluctuating trend from 16.5 per cent in 2012-13 to 15.2 per cent in 2017-18 (Table 3).

Table 3: Gross Capital Formation (GCF) in Agriculture and Allied Sectors relative to Gross Value Added (GVA) at constant (2011-12) prices

Year	GCF of agriculture & allied sector (₹ in Crore)	GVA of agriculture & allied sector (₹ in Crore)	GCF of agriculture & allied sector as percentage of GVA (in percentage)
2012-13	2,51,094	15,24,288	16.5
2013-14	2,84,424	16,09,198	17.7
2014-15	2,72,663	16,05,715	17.0
2015-16*	2,37,648	16,16,146	14.7
2016-17#	2,67,836	17,17,467	15.6
2017-18@	2,73,755	18,03,039	15.2

Source: CSO, MoSPI

Note: @As per the First Revised Estimates of National Income, Consumption Expenditure, Saving and Capital Formation for 2017-18 released on 31st January, 2019.

Second Revised Estimate * Third Revised Estimate

MINIMUM SUPPORT PRICES

7.5 With a view to encourage higher investment and production, the Government announces Minimum Support Prices (MSPs) for twenty-two mandated crops; and Fair and Remunerative Price for Sugarcane. The Union Budget, 2018-19 had announced pre-determined principle to keep MSPs at levels of one and half times of the cost of production. Accordingly, Government had increased MSPs for all mandated kharif, rabi and other commercial crops with a return of 1.5 times over all India weighted average cost of production for the season 2018-19. Government has recently increased the MSPs for all mandated kharif and rabi crops for 2019-20 season in line with this principle. Further, direct income/investment support schemes have been introduced (Box 1).

Box 1: Income/Investment Support Schemes

Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)

PM-KISAN is a Central Sector scheme with 100 per cent funding from Government of India. The Scheme is effective from 1.12.2018 and covers all the farmers (subject to certain exclusion criteria). Under the Scheme an income support of ₹ 6000 per year is provided to all farmer families across the country in three equal installments of ₹ 2000 at an interval of every four months.

Krushak Assistance for Livelihood and Income Augmentation (KALIA) Scheme of Odisha
This scheme was launched by Government of Odisha in 2018-19 Rabi season onwards, to accelerate agricultural prosperity and elimination of poverty in the State. Benefits provisioned under different components are: financial support of ₹ 25,000 per farm family over five seasons will be provided to small and marginal farmers so that farmers can purchase inputs like seeds, fertilizers, pesticides, labour & other investments. For landless agriculture households, financial assistance of ₹ 12500 will be provided to each landless agricultural household for agricultural allied activities such as small goat rearing unit, mini-layer unit, duckery units, fishery kits for fisherman, mushroom cultivation and bee-keeping, etc. Vulnerable cultivators/landless agricultural labourers will get financial assistance of ₹10,000 per family per year to enable them to take care of their sustenance. The scheme also has life and accident insurance covers for the farmers at very nominal premiums.

Mukhya Mantri Krishi Ashirwad Yojana of Jharkhand
Under the scheme, all the small and marginal farmers of the State, who have arable land up to a maximum of 5 acres, will be given a grant-in-aid at the rate of ₹ 5000 / - per acre per year, which will help them reduce their dependence on loans. This amount would be given in two installments through Direct Benefit Transfer to the beneficiary's bank account. This is in addition to PM Kisan Nidhi Yojana under which each small & marginal farmer's family having combined landholding/ ownership of up to two hectares is paid ₹ 6,000 per year.

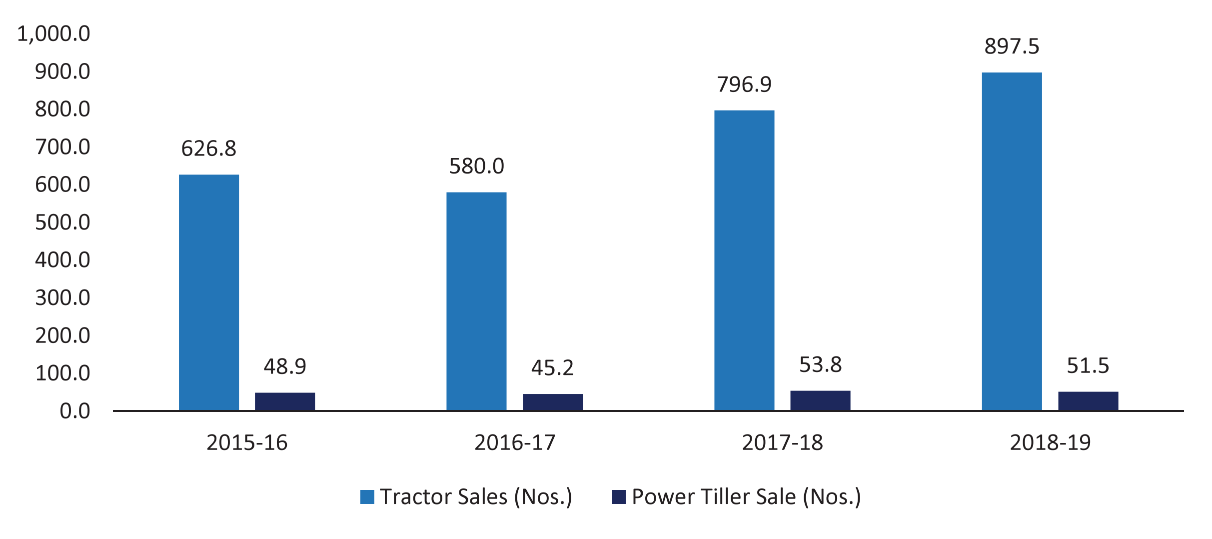
Rythu Bandhu of Telangana
Government of Telangana has come up with a new concept of providing Investment Support at the rate of ₹ 4,000 per acre per season to all the farmers (Pattadars) in the State towards purchase of various inputs like seeds, fertilizers etc., as initial investment before the crop season. The scheme is being implemented from Kharif 2018 onwards. A financial outlay of ₹ 12,000 crore has been allocated during 2018-19. During Kharif 2018-19, 51.50 lakh farmers were benefitted to the tune of ₹ 5,260.94 crore and it was disbursed by way of cheques. During Rabi 2018-19, the Government has taken a decision to transfer the amount through treasury e-Kuber to deposit money into the accounts of the farmers. An amount of ₹ 5,244.26 crore was transferred into the accounts of 49.03 Lakh farmers. During 2019-20, Government of Telangana has enhanced the amount under Investment Support Scheme from ₹ 4,000 to ₹ 5,000 per acre per season.

MECHANIZATION IN AGRICULTURE

7.6 Agriculture mechanization is an essential input to modern agriculture to increase the productivity by making judicious use of other inputs and natural resources etc., besides reducing the human drudgery and cost of cultivation. With the shrinking land and water resources and labour force, the onus rests on mechanization of production and post harvesting operations. There is a linear relationship between availability of farm power and farm yield and Government has decided to enhance farm power availability from 2.02 kW per ha (2016-17) to 4.0 kW per ha by the end of 2030 to cope up with increasing demand for food grains.

7.7 Indian tractor industry is the largest in the world, accounting for one-third of the total global production. During the past four decades, the tractor industry grew at a compounded annual growth rate (CAGR) of 10 per cent. Farm mechanization market in India has been growing at a CAGR of 7.53 per cent during 2016-2018 due to thrust given by various government policies (Figure 1).

Figure 1: Year Wise Sale of Tractors and Power Tillers (in '000).



Source: Department of Agriculture, Cooperation & Farmers Welfare (DAC & FW).

7.8 Recognizing the need for inclusive growth of farm mechanization sector in the country, a Sub Mission on Agricultural Mechanization was launched in 2014-15. Under the scheme, assistance is provided to State governments to impart training and demonstration of agricultural machinery, provides assistance to farmers for procurement of various agricultural machineries and equipment and for setting up of Custom Hiring Centre. Under the scheme, total funds allocated during 2014-15 to 2018-19 was ₹ 3377.07 crore and during 2018-19 it was ₹ 1027.46 crore. During the last four years, Government has given massive thrust to promoting latest agricultural machineries, like laser leveller, happy seeder technology, combine harvesters and small equipment like power weeders. Under new Central Sector Scheme on 'Promotion of Agricultural Mechanization for In-Situ Management of Crop Residue in the States of Punjab, Haryana, Uttar Pradesh and NCT of Delhi' (2018-19 to 2019-20), the agricultural machines and equipment for in-situ crop residue management are provided with 50 per cent subsidy to the individual farmers and 80 per cent subsidy for establishment of Custom Hiring Centres.

Crop-wise Mechanisation Level in Agriculture

7.9 Effective use of agricultural machinery helps to increase productivity and production of farm output along with timely farm operations for quick rotation of crops on the same land. By raising a second crop or multi-crops from the same land, there is improvement in the cropping intensity and making agricultural land commercially more viable (NABARD, 2018). However, overall farm mechanization in India has rather been lower (40-45 per cent) compared to other countries such as USA (95 per cent), Brazil (75 per cent) and China (57 per cent). A significant share of India's tractor production is also exported. India, on average, exports 79,000 tractors annually; the primary markets being the African countries and ASEAN countries, having similar soil and agro climatic conditions. There are disparities visible in intra-national levels of mechanization as well where northern India has higher levels of mechanization compared to other regions. A study by NABARD in 2018 on farm mechanization has identified that economies of operation due to small holdings, access to power, credit cost and procedures, uninsured markets and low awareness being some of the important reasons for lower rate of agricultural mechanization in India. The mechanization levels for major crops in India in 2018-19 is presented in Table 4.

MICRO IRRIGATION

7.10 Focus on water use efficiency at farm level through precision or micro Irrigation (drip and sprinkler irrigation) has become a farm imperative to ensure a sustainable agricultural practice. Considering this, the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) was launched on 1st July, 2015 with the motto of 'Har Khet Ko Paani' for providing end-to end solutions in irrigation supply chain, viz. water sources, distribution network and farm level applications. Per Drop More Crop component of PMKSY (PMKSY-PDMC) is operational from 2015-16 in the country focussing on water use efficiency at farm level. Performance of micro irrigation component in terms of area is presented in Figure 2.

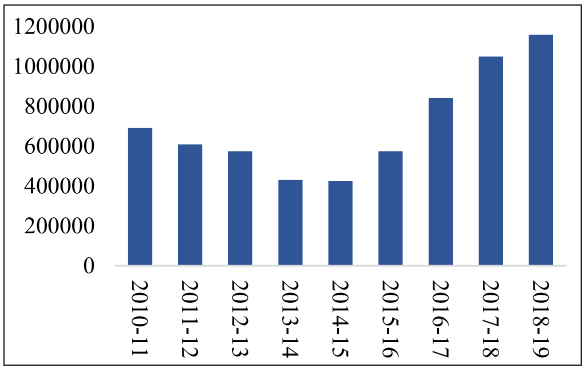
Table 4: Mechanization Levels for Major Crops in India in 2018-19

Major crops	Mechanization Levels for Field Operations (in per cent)			
	Seed bed preparation	Sowing/ planting/ transplanting	Weeding and interculture and plant protection	Harvesting and threshing
Rice	70	20	30	60
Wheat	70	60	50	70
Maize	60	40	30	30
Sorghum and millets	50	30	15	10
Pulses	50	40	20	25
Oilseed	50	40	20	25
Cotton	50	30	25	0
Sugarcane	55	10	20	10

Source: Department of Agricultural Research & Education (DARE).

7.11 Micro Irrigation, which includes drip and sprinkler irrigation, is a proven technology which has gained immense popularity amongst the farmers. Strengths of this technology include - efficient deployment of inputs such as water, electricity, fertilizers, labour, increase in crop productivity, better quality of produce leading to higher realization of sale price resulting in increased income of farmer. With this technology, additional area can be irrigated with the same amount

Figure 2: Year-wise Area Covered under Micro Irrigation through Centrally Sponsored Scheme (in Ha)



Source: DAC&FW

of water compared to conventional method of irrigation. In addition, water deficient, cultivable waste land and undulating land areas can be brought under cultivation due to ease of irrigation. There is also good scope for using this technology in closely spaced crops like rice, wheat, onion, potato etc. In a nutshell, following benefits have accrued to the farmers:

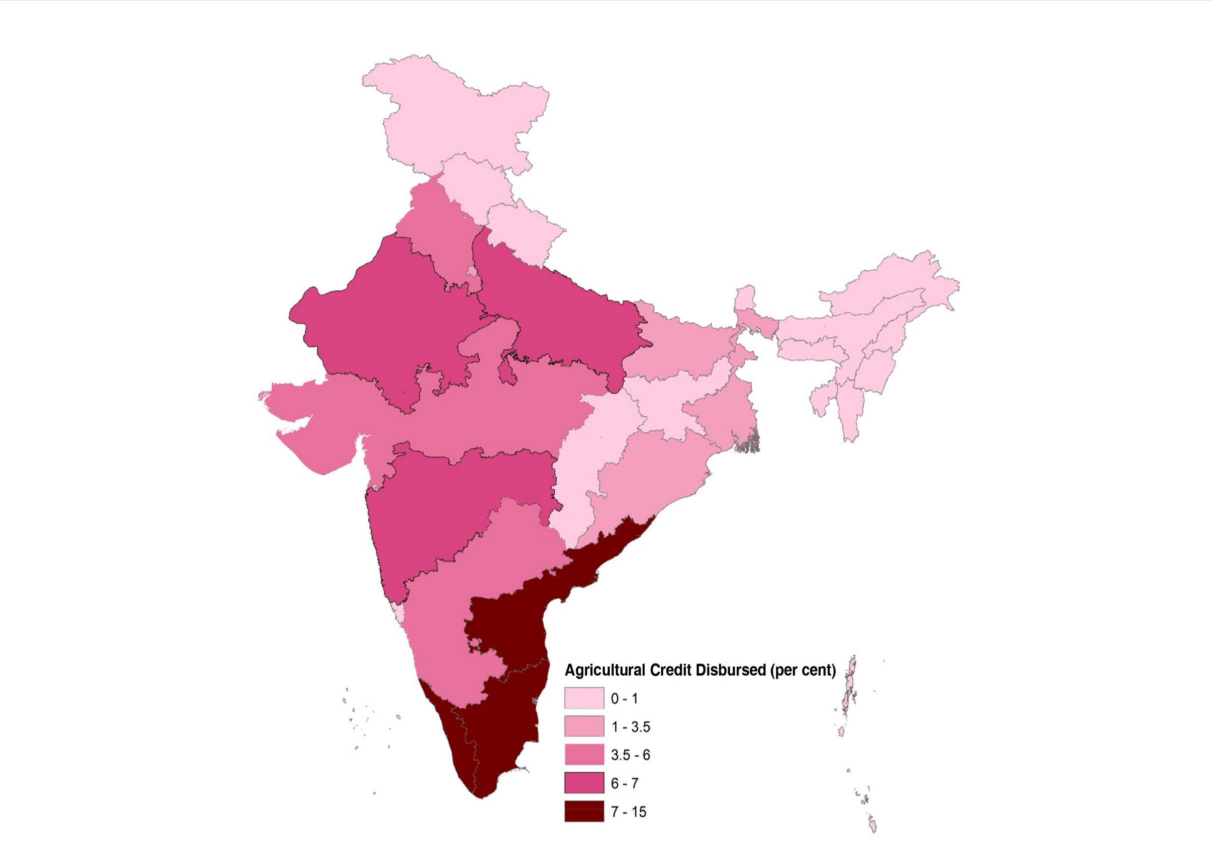
- Saving of irrigation water from 20 to 48 per cent;
- Energy saving from 10 to 17 per cent;
- Saving of labour cost from 30 to 40 per cent;
- Saving of fertilizers from 11 to 19 per cent;
- Increase in crop production from 20 to 38 per cent;
- Increase in net annual income of the farmer beneficiaries.

7.12 A dedicated Micro Irrigation Fund (MIF) created with NABARD has been approved with an initial corpus of ₹ 5000 crore facilitating the States in mobilizing the resources for expanding coverage of Micro Irrigation envisaged under PMKSY-PDMC and also in bringing additional coverage through special and innovative initiatives by State Governments.

AGRICULTURAL CREDIT

7.13 The agricultural credit flow target for 2019-20 has been fixed at ₹ 13,50,000 crore, and till 30th November, 2019, a sum of ₹ 9,07,843.37 crore has been disbursed. The regional distribution of agricultural credit in India is highly skewed (Figure 3). It is observed that credit is low in North Eastern, Hilly and Eastern States. The share of North Eastern States has been less than one percent in total agricultural credit disbursement.

Figure 3: Distribution of Agricultural Credit in India in 2018-19



Source: Based on the data from DAC&FW

MITIGATING RISKS IN AGRICULTURE: CROP INSURANCE

7.14 Pradhan Mantri Fasal Bima Yojana (PMFBY) has been under implementation since kharif 2016 season in the country. It provides comprehensive coverage of risks from pre-sowing to post harvest against natural non-preventable risks. The insurance premium is paid to insurance companies on actuarial/on bidding basis, with very low share contributed by the farmers across the country (2 per cent and 1.5 per cent of the sum insured for food and oilseed crops for kharif and rabi seasons, respectively) and 5 per cent for commercial/horticultural crops and balance premium to be paid upfront and shared equally between Central and State Governments. It also provides better protection for the farmers in terms of sum insured which has been made equal to the scale of finance.

7.15 PMFBY envisages increase in coverage from the existing 23 per cent to 50 per cent of Gross Cropped Area (GCA) in the country. Target for 2016-17 was 30 per cent of GCA. The targets could not be covered due to the announcement of Debt Waiver Scheme in two big States namely, Maharashtra and Uttar Pradesh during 2017-18 and in Madhya Pradesh and Rajasthan in 2018-19. Direct Benefit Transfer (DBT) was introduced by the Government in April 2017 to help farmers receive claims directly in their bank accounts, which made registration through Aadhar number mandatory. This was a deliberate step by the Government to weed out ghost/duplicate beneficiaries and help genuine farmers through Aadhar based verification. Substantial progress with more ground coverage compared to erstwhile crop insurance schemes has been made under PMFBY. The Government has also created a National Crop Insurance Portal that provides interface among all stakeholders (Box 2).

Box 2: National Crop Insurance Portal (NCIP)

National Crop Insurance Portal:(https://pmfby.gov.in) is a web-based integrated IT platform that provides interface among all stakeholders to access/enter data relating to insured farmers under PMFBY and Restructured Weather Based Crop Insurance Scheme (RWBCIS). For this purpose, all stakeholders, viz., States, banks, insurance companies (ICs), farmers (for direct online enrollment) and the Common Service Centre (CSC) involved in the enrolment process have been provided an interface on the NCIP through which the enrolment process is executed. In this manner the data on enrolment for non-loanee farmers through different sources is completely available on the NCIP.

Crop insurance portal envisages creation of demand for Government share of premium subsidy from the portal itself, on the basis of which funds would be released to concerned ICs and as a next step the portal would facilitate that the admissible claims could be settled directly to farmers bank accounts by respective ICs through portal to avoid delay in credit of claim amount to farmers account and for proper monitoring.

7.16 During 2018-19 season, 564.50 lakh farmer applications (tentatively) covering an area of 517.70 lakh ha have been insured for a sum of about ₹ 2,35,642 crore. By October 2019, under PMFBY, total claims of ₹ 17,756 crore have been approved and ₹ 16,763 crore have been paid. Loanee and non-loanee coverage stood at 354 lakh and 210.40 lakh respectively. Substantial progress with more ground coverage compared to erstwhile crop insurance schemes has been made under PMFBY. Though the scheme is voluntary for the States, 26 States/UTs implemented the scheme in 2017-18. In 2018-19, 23 States/ UTs implemented the scheme.

7.17 On the basis of the experience of implementation of PMFBY and with a view to ensuring better transparency, accountability and timely payment of claims to the farmers, Government has comprehensively revised the operational guidelines of the scheme which have become effective from 01.10.2018 and, inter-alia, include the following:

i) Provision of 12 per cent interest rate per annum to be paid by the Insurance Company to farmers for delay in settlement of claims beyond 10 days of prescribed cut-off date for payment of claims;

ii) State Governments have to pay 12 per cent interest rate for delay in release of State share of subsidy beyond three months of prescribed cut-off date/ submission of requisition by Insurance Companies;

iii) Increased time for change of crop name for insurance - upto 2 working days prior to cut-off date for enrolment instead of earlier provision of one month before cut-off date;

iv) Time for intimation of loss due to localized calamities and post-harvest losses has been increased from 48 hours to 72 hours;

v) Detailed Standard Operating Procedures (SOPs) for settlement of claims under localized calamities, post-harvest losses, mid-season adversity and prevented sowing and redressal of disputes regarding yield data including add on features;

vi) Inclusion of perennial crops and add on coverage for damage by wild animals on pilot basis.

AGRICULTURAL TRADE

7.18 India occupies a leading position in global trade of agricultural products. However, its total agricultural export basket accounts for a little over 2.15 per cent of the world agricultural trade. The major export destinations are USA, Saudi Arabia, Iran, Nepal and Bangladesh. What is noteworthy is that since the economic reforms began in 1991, India has remained consistently a net exporter of agri-products, touching ₹ 2.7 lakh crore exports and imports at ₹ 1.37 lakh crore in 2018-19. The export of major agri-allied items for the last 3 years are given in Table 5.

Table 5: India's Export of Principal Agri and allied Commodities (Value in ₹ '000' Crore & Quantity in Lakh Metric Tonnes)

Commodities	2016-17		2017-18		2018-19	
	Value	Qty	Value	Qty	Value	Qty
Rice -Basmati	21.51	39.85	26.87	40.57	32.80	44.15
Spices	19.11	10.14	20.08	10.96	23.22	10.92
Rice (Other than Basmati)	16.93	67.71	23.44	88.19	21.19	76.00
Cotton Raw Including Waste	10.91	9.96	12.20	11.01	14.63	11.43
Oil Meals	5.41	26.32	7.04	35.71	10.58	44.86
Sugar	8.66	25.44	5.23	17.58	9.52	39.88
Castor Oil	4.52	5.99	6.73	6.97	6.17	6.19
Tea	4.91	2.43	5.40	2.73	5.83	2.70
Coffee	5.65	2.89	6.25	3.18	5.72	2.83
Fresh Vegetables	5.79	34.04	5.30	24.48	5.67	29.33
Total Agri and allied exports	227.6		251.56		274.57	

Source: DAC&FW

7.19 A number of trade policy measures have been undertaken by the Government over the past few years to protect the domestic farmers in the country, which include:

i) Import duty has been raised from 0 to 10 per cent on tur, 0 per cent to 50 per cent on peas, 0 per cent to 60 per cent on gram (chana) and 0 per cent to 30 per cent on lentils.

ii) Quantitative restrictions of 4 lakh tonnes per year has also been imposed on import of tur and 1.5 lakh tonnes on import of peas, urad & moong per year.

iii) Export of all varieties of pulses have been allowed with effect from 22.11.2017 to ensure the greater choice in marketing as well as the better remuneration for farmers' produces.

iv) Restriction on export of all types of edible oils (except mustard oil) has been lifted on 06.04.2018 to encourage export of indigenous edible oils and their industries.

v) Government has imposed Minimum Import Price (MIP) on pepper and arecanut. MIP of ₹ 500/kg was fixed on pepper imports on 6th Dec, 2017 and MIP of ₹ 251/kg was fixed on arecanut on 17th Jan, 2017 to protect the domestic growers and their livelihood from cheap import of the commodity as well as to save the domestic industries of pepper and arecanut.

vi) Under Foreign Trade Policy 2015-20, rates of reward under merchandise exports from India (MEIS) were enhanced on export of various agriculture items on 1st November, 2017 to offset high transit cost.

vii) Government has recently initiated a comprehensive "Agriculture Export Policy" aimed at doubling the agricultural exports and integrating Indian farmers and agricultural products with the global value chains.

viii) Created agri cells in many Indian embassies abroad to take care of agricultural trade related issues.

AGRICULTURAL RESEARCH AND EDUCATION

7.20 The Department of Agricultural Research & Education (DARE) provides the necessary government linkages for the Indian Council of Agricultural Research (ICAR), the premier research organisation for co-ordinating, guiding and managing research and education in agriculture, including horticulture, fisheries and animal sciences.

High Yielding Varieties and Breeder Seeds

7.21 The hallmark of ICAR is new crop varieties having specific traits that improve yield and nutritional quality along with tolerance/resistance to various biotic and abiotic stresses besides matching crop production and protection technologies for target agro-ecologies. A total of 220 new varieties/hybrids of field crops and 93 horticultural crops were notified/released during 2019-20. These are tolerant to various biotic and abiotic stresses with enhanced quality and quantity. The Council developed 18 biofortified varieties of crops that are rich in iron, zinc, protein and glucoisnolates and Kunitz Trypsin Inhibitor (KTI) free to ensure nutritional security through the natural food system. During 2018-19, a total of 117772 quintals of breeder seeds of various field crops were produced. Besides, 239 lakh planting material and 1.9 lakh tissue culture plantlets were also produced for vegetative propagated field crops, fruits, vegetables and plantation crops. During 2018-19, six varieties of tolerant to biotic and abiotic stresses and of improved quality have been developed through marker assisted selection.

Research & Education in Livestock and Fisheries Development

7.22 The ICAR also works for the integrated development of all the subsectors as all these are integrated at the farmers' farm. The first gazette notification of 184 registered indigenous breeds was done in 2019. This will provide legal support for Intellectual Property Rights (IPRs) of the registered breed/new varieties released and conservation of threatened breed and indigenous breeds. It will enable placing the genetic information with legal tag in the public domain and help in protection of these bioresources from bio-piracy and other IPR issues. During 2018-19, to increase higher availability of animal and fish products, 15 new indigenous populations of livestock and poultry as breeds were registered. The country possesses 535.78 million livestock population, which includes 192.49 million cattle, 109.85 million buffalo, 74.26 million sheep, 148.88 million goat and 9.06 million pig; and 851.81 million poultry population (Livestock Census, 2019). This vast and varied population of animals is mainly indigenous, while a sizeable population is crossbreds between exotic germplasm and native stock. A very few animals belonging to exotic breeds are maintained mostly in organized farms. In order to make the country animal disease free, the diagnostic kits against Japanese Encephalitis (JE) and Bluetongue (BT) diseases and Subviral Particle based Infectious Bursal Disease Vaccine were developed.

Transferring Technologies from Lab to Farmer's Field

7.23 The 716 Krishi Vigyan Kendras (KVKs) of the country have been linked with 3.37 lakh common service centers to enhance the reach of the KVKs amongst the farmers and provide the demand driven services and information. To take the technologies of the labs to farmers' fields, KVKs conducted 42361 on-farm trials and 2.71 lakh Frontline Demonstrations. These outreach programmes were further strengthened with the production of 1.77 lakh quintals quality seeds of field crops, 365.53 lakh planting materials of horticultural crops and 154.91 lakh livestock strains and finger lings which were made available to farmers on a nominal cost. About 139.67 lakh farmers participated in various extension activities and 15.91 lakh farmers and 1.21 lakh extension personnel were trained to work as peers for further propagation the promising technologies. To harness the benefits of digital development a digital platform has been created (Box 3).

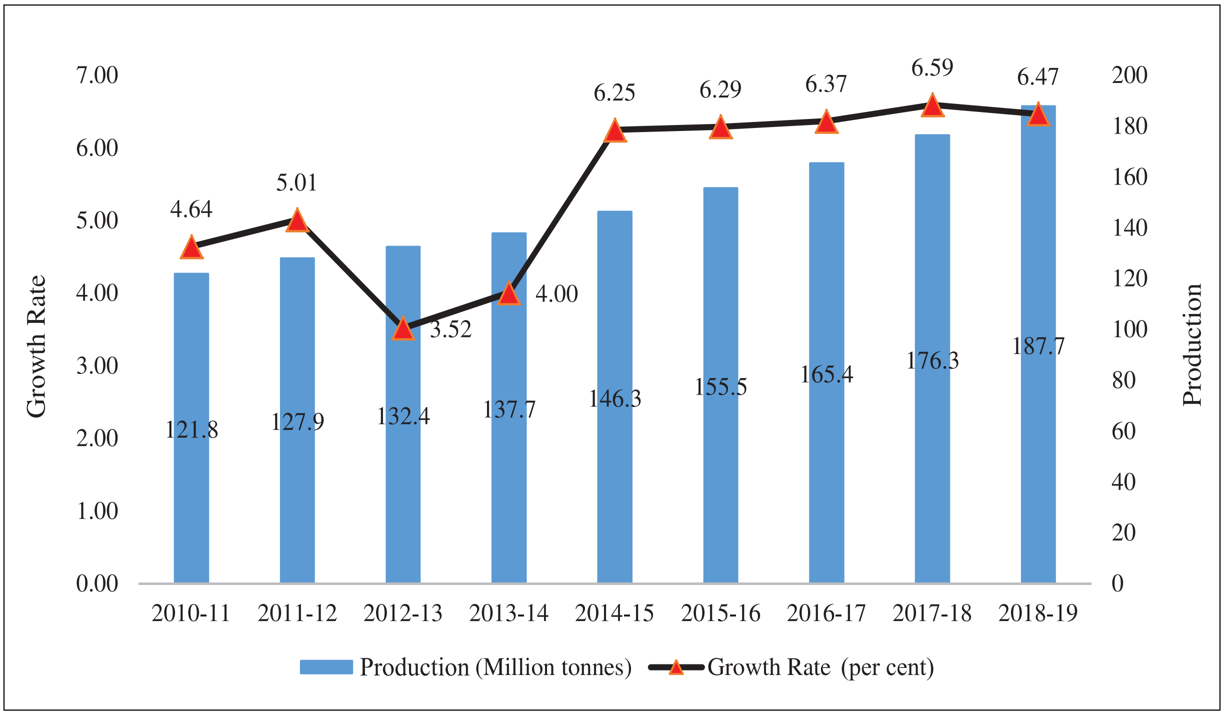
Box 3: Digital Platform in Agriculture

The ICAR with its 113 research institutes and 716 KVKs is geared up to enhance the competitiveness of Indian farming to make farming a viable, self-sustaining and internationally competitive enterprise through digital agricultural platform- Cyber Agro-Physical Systems (CAPS). The CAPS while integrating the use of sensors with computers, satellite imagery, supercomputing facility for research will also help reducing uncertainty and risk in agriculture operations through Artificial Intelligence enabled farmers' advisories for critical agricultural operations and climatic events. Also, New Digital Apps have been developed for making Indian agriculture in line with Digital India theme. The DARE launched the Agricultural Education Portal EKTA (Ekikrit Krishi Shiksha Takniki Ayaam) for integrated online management information system, developed 9 mobile apps such as mango cultivation, e-kalpa, oil palm (English, Hindi and Telugu); pomegranate, onion and garlic, black pepper, mushrooms and 02 mobile Apps for farming community (Kisan Suvidha and Pusa Krishi). KVKs through mKisan portal provided SMS service to 612.95 lakh farmers on improved package of practices of various crops and allied enterprises, weather-based advisories and information on various Government schemes.

ALLIED SECTORS: ANIMAL HUSBANDRY, DAIRYING AND FISHERIES

7.24 Animal Husbandry, Dairying and Fisheries activities, along with agriculture, continue to be an integral part of human life. These activities have contributed to the food basket and draught animal power and maintain ecological balance along with generating gainful employment, particularly among the landless, small and marginal farmers and women, besides providing nutritious food to millions of people. Livestock income has become an important secondary source of income for millions of rural families and has assumed an important role in achieving the goal of doubling farmers' income. Livestock sector has grown at a compound annual growth rate of 7.9 per cent during last five years. Government has launched a new Central Sector Scheme "National Animal Disease Control Programme (NADCP) for control of Foot & Mouth Disease (FMD) and Brucellosis" with a financial outlay of ₹13,343 Crore for five years from 2019 to 2024. This scheme envisages complete control of FMD by 2025 with vaccination and its eventual eradication by 2030. This will result in increased domestic production and increased exports of milk and livestock products.

Figure 4: Milk Production and its Growth Rate



Source: Department of Animal Husbandry & Dairying (DAHD)

7.25 India continues to be the largest producer of milk in the world. Milk production in the country was 187.7 million tonnes in 2018-19 and registered a growth rate of 6.5 per cent over the previous year (Figure 4). The per capita availability of milk has reached a level of 394 grams per day during 2018-19. Egg production in the country, which was 95217 million numbers in 2017-18, increased to 103318 million numbers in 2018-19. Production of major livestock products is given in Table 6.

Table 6: Production of Major Livestock Products

Year	Milk (Million tonnes)	Per Capita availability of Milk(gram/day)	Eggs (Millions Nos.)	Per Capita availability of Egg (number/annum)
2008-09	112.2	266	55562	48
2009-10	116.4	273	60267	51
2010-11	121.8	281	63024	53
2011-12	127.9	290	66450	55
2012-13	132.4	299	69731	58
2013-14	137.7	307	74752	61
2014-15	146.3	322	78484	63
2015-16	155.5	337	82929	66
2016-17	165.4	355	88137	69
2017-18	176.3	375	95217	74
2018-19	187.7	394	103318	79

Source: DAHD

7.26 According to NSSO 66th Round Survey (July 2009-June 2010) on Employment and Unemployment, 15.60 million workers as per usual status (Principal status plus subsidiaries status) were engaged in farming of animals, mixed farming and fishing. As per estimate of 68th Round (July 2011-June 2012), 16.44 million workers were engaged in the activities of farming of animals, mixed farming, fishing and aquaculture.

Fisheries Sector

7.27 Fisheries remain an important source of food, nutrition, employment and income in India. The sector provides livelihood to about 16 million fishers and fish farmers at the primary level and almost twice the number along the value chain. Recognising the importance of the sector, an independent Department of Fisheries has been created in 2019 to provide sustained and focused attention towards the development of fisheries sector.

7.28 The sector has been showing a steady growth in the total GVA and accounts for 6.58 per cent of GDP from agriculture, forestry and fishing. The fish production in India has registered an average annual growth rate of more than 7 per cent in the recent years. The sector has been one of the major contributors of foreign exchange earnings with India being one of the leading seafood exporting nations in the world. During 2018-19, export of marine products stood at 13, 92,559 metric tonnes and valued at ₹ 46,589 crore. USA and South East Asia are the major export markets for Indian seafood with a share of 34.81 per cent and 22.67 per cent respectively. India has rich and diverse fisheries resources. The marine fisheries resources are spread along the country's vast coastline and 2.02 million square km Exclusive Economic Zone (EEZ) and 0.53 million sq.km continental shelf area. The inland resources are in the form of rivers and canals (1.95 lakh km), floodplain lakes (8.12 lakh hectares), ponds and tanks (24.1 lakh hectares), reservoirs (31.5 lakh hectares), brackish water (12.4 lakh hectares), saline/ alkaline affected areas (12 lakh hectares) etc.

7.29 The total fish production in the country stood at 13.42 million metric tonnes (provisional) during 2018-19. Of this, the marine fisheries contributed 3.71 million metric tonnes and the inland fisheries

Table 7: State Wise Inland & Marine Fish Production in 2017-18 (in '000 Tonnes)

States	Inland	Marine	Total
Andhra Pradesh	2844.61	604.95	3449.56
Arunachal Pradesh	4.25	0.00	4.25
Assam	327.26	0.00	327.26
Bihar	587.85	0.00	587.85
Chhattisgarh	457.17	0.00	457.17
Goa	5.54	118.47	124.01
Gujarat	133.79	700.74	834.53
Haryana	190.00	0.00	190.00
Himachal Pradesh	12.77	0.00	12.77
Jammu & Kashmir	20.70	0.00	20.70
Jharkhand	190.00	0.00	190.00
Karnataka	188.17	414.35	602.52
Kerala	148.28	414.34	562.62
Madhya Pradesh	143.42	0.00	143.42
Maharashtra	131.02	474.99	606.01
Manipur	33.00	0.00	33.00
Meghalaya	11.96	0.00	11.96
Mizoram	7.64	0.00	7.64
Nagaland	8.99	0.00	8.99
Odisha	534.12	150.84	684.96
Punjab	136.64	0.00	136.64
Rajasthan	54.04	0.00	54.04
Sikkim	0.38	0.00	0.38
Tamil Nadu	185.05	496.89	681.94
Telengana	270.04	0.00	270.04
Tripura	76.80	0.00	76.80
Uttarakhand	4.58	0.00	4.58
Uttar Pradesh	628.75	0.00	628.75
West Bengal	1556.61	185.48	1742.09
India	**8902.42**	**3687.86**	**12590.28**

Source: Department of Fisheries (DoF)

contributed 9.71 million metric tonnes. During 2018-19, 71 per cent of marine fisheries potential and 58 per cent of the inland fisheries potential have been harnessed. State-wise fish production for 2017-18 is presented in Table 7. A trend in total fish production over the last five years for major producing states may be seen in Figure 5.

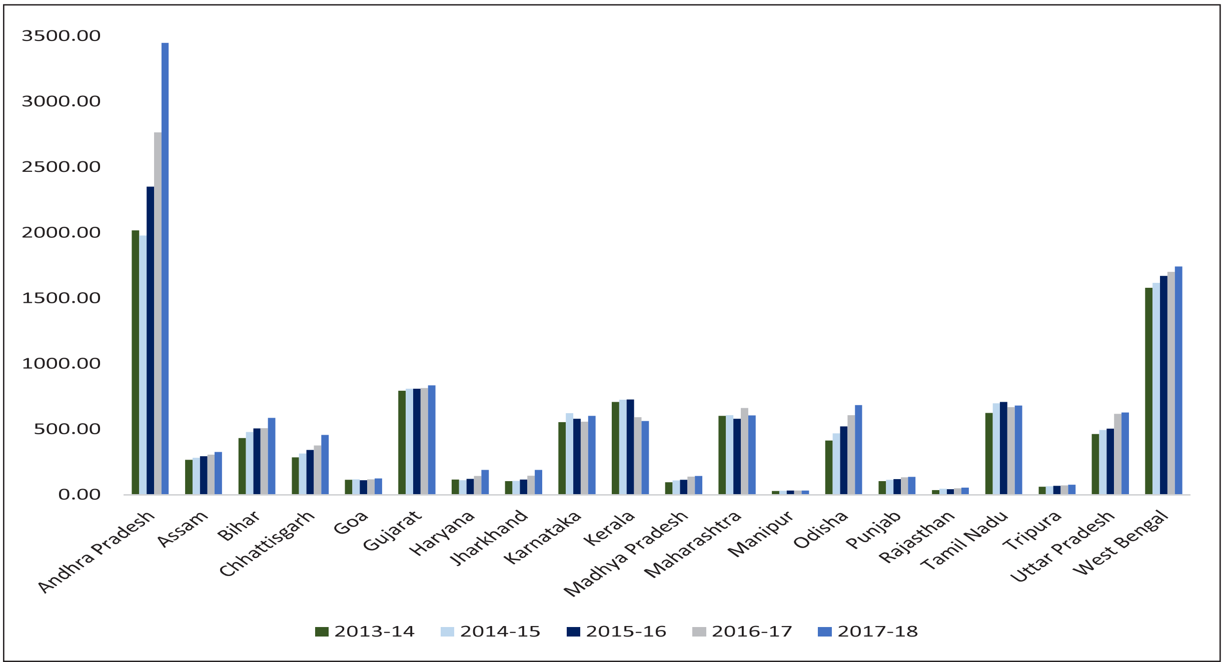
Fisheries and Aquaculture Infrastructure Development Fund

7.30 To address the gaps in fisheries infrastructure, the government has created the Fisheries and Aquaculture Infrastructure Development Fund (FIDF) during 2018-19 with a total fund size of ₹ 7,522.48 crore. The FIDF provides concessional finance/ loan to the Eligible Entities (EEs), including State Governments/Union Territories (UTs) and State entities for development of identified fisheries infrastructure facilities. The concessional finance under the FIDF is provided by the Nodal Loaning Entities (NLEs) namely (i) NABARD, (ii) National Cooperatives Development Corporation (NCDC) and (iii) All scheduled Banks. Till date, proposals to the tune of ₹ 2751.33 crore have been received from the various States and other Eligible Entities. Out of which proposals to the tune of ₹ 1715.04 crores have been recommended and rest are under process.

FOOD PROCESSING SECTOR

7.31 A well-developed food processing sector with higher level of processing helps in the reduction of wastage, improves value addition, promotes crop diversification, ensures better return to the farmers, promotes employment as well as increases export earnings. Growth in the food processing sector is also expected to open up opportunities for players having strong linkages in the agri-value chain. During the last 6 years ending 2017-18, Food Processing Industries sector has been growing at an average annual growth rate of around 5.06 per cent. The sector constituted

Figure 5: Fish Production over the last five years for Major Producing States (in '000 Tonnes)



Source: DoF

as much as 8.83 per cent and 10.66 per cent of GVA in Manufacturing and Agriculture sector respectively in 2017-18 at 2011-12 prices.

7.32 According to the Annual Survey of Industries for 2016-17, the total number of persons engaged in registered food processing sector was 18.54 lakhs.

7.33 Unregistered food processing sector supports employment to 51.11 lakh workers as per the NSSO 73rd Round, 2015-16 and constitutes 14.18 per cent of employment in the unregistered manufacturing sector. The value of processed food exports during 2018-19 was of the order of US $ 35.30 billion accounting for about 10.70 per cent of India's total exports (total exports US $ 330.08 billion). The value of import of processed food during 2018-19 was US $ 19.32 billion which is 3.76 per cent of India's total imports.

Pradhan Mantri Kisan Sampada Yojana

7.34 Government has restructured its schemes under a new central sector scheme of Pradhan Mantri Kisan Sampada Yojana (PMKSY). With a financial allocation of ₹ 6,000/- crore for the period 2016-20, PMKSY provides subsidy-based support to create robust modern infrastructure for agriculture and agro-based industries along the entire value/supply chain. It is expected to reduce wastage of agriculture produce, increase the processing level, enhance the export of the processed foods, enable availability of hygienic and nutritious food to consumers at affordable prices. The scheme components are: Mega Food Parks, Integrated Cold Chain and Value Addition Infrastructure, Creation/Expansion of Food Processing & Preservation Capacities, Infrastructure for Agro-processing Clusters, Creation of Backward and Forward Linkages, Food Safety and Quality Assurance Infrastructure, Human Resources and Institutions, and Operation Greens. The PMKSY envisages to leverage investment of ₹ 31,400 crore, handling of 334 Lakh Metric Tonnes (LMT) agro-produce, valuing ₹ 1,04,125 crore, which will benefit 20 lakh farmers and generate 5,30,500 direct/ indirect employment in the country on completion of sanctioned projects. So far, 701 projects have been sanctioned under different component schemes, which are expected to leverage investment of about ₹12,455 crores, handle about 259 LMT agro-produce valuing about ₹ 67,054 crores, benefit about 46.37 lakh farmers and generate about 5.6 lakh direct/ indirect employment in the country on completion of the projects.

FERTILIZERS

7.35 The New Urea Policy-2015 (NUP-2015) had been notified by Department of Fertilizers on 25th May, 2015 with the objectives of maximizing indigenous urea production; promoting energy efficiency in urea production; and rationalizing subsidy burden on the government. The production of urea during the year 2015-16 was 244.75 LMT, which happens to be the highest ever urea production in the country (Table 8). The imports of fertilizers show fluctuating trend (Figure 6).

Direct Benefit Transfer (DBT) System in Fertilizers

7.36 The Government of India has introduced Direct Benefit Transfer (DBT) system in Fertilizers w.e.f. October, 2016. Under the fertilizer DBT system, 100 per cent subsidy on various fertilizer grades is released to the fertilizer companies on the basis of actual sales made by the retailers to the beneficiaries. Sale of all subsidized fertilizers to farmers/buyers is being made through Point of Sale (PoS) devices installed at each retailer shop and the beneficiaries will be identified through Aadhaar Card, KCC,

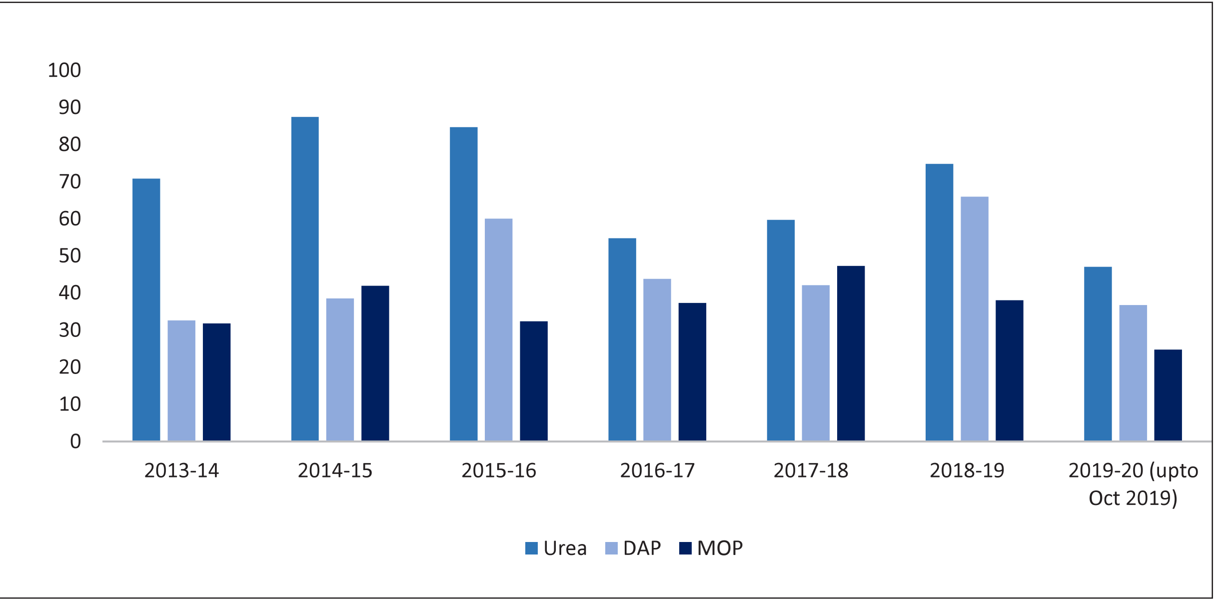
Table 8: Production of Urea, DAP and Complex Fertilizers (in LMT)

Year	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20*
Urea	227.15	225.85	244.75	242.01	240.23	240.00	138.28
DAP	36.11	34.44	37.87	43.65	46.50	38.99	25.52
Complex Fertilizers	69.13	78.32	83.01	79.66	82.57	89.98	51.42

Source: Department of Fertilizers

*Upto October, 2019

Figure 6: Import of Urea, DAP and Muriate of Potash (MOP) (in LMT)



Source: Department of Fertilizers

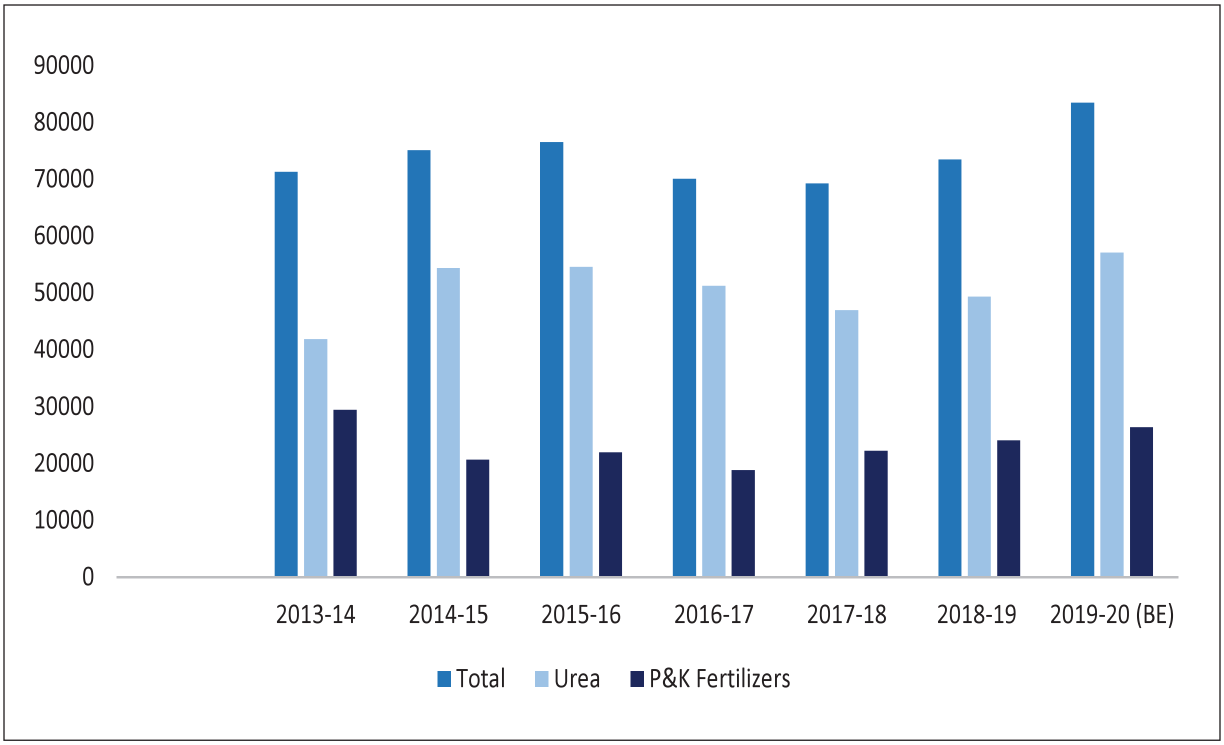
Voter Identity card etc. Trend in fertilizer subsidy may be seen in Figure 7.

FOOD MANAGEMENT

7.37 The main objectives of food management are procurement of foodgrains from farmers at remunerative prices, distribution of foodgrains to consumers, particularly the vulnerable sections of society at affordable prices and maintenance of food buffers for food security and price stability. The nodal agency which undertakes procurement and storage of foodgrain is the Food Corporation of India (FCI). The distribution of foodgrains is primarily under the National Food Security Act, 2013 (NFSA) and other welfare schemes of the Government and is governed by the scale of allocation and its offtake by the beneficiaries.

7.38 The NFSA which came into force in July, 2013, provides for coverage of upto 75 per cent of the rural population and upto 50 per cent of the urban population for receiving foodgrains under Targeted Public Distribution System (TPDS), thus covering about two-thirds of the population of the country for receiving foodgrains at the rate of ₹ 1/2/3 per kg for nutri-cereals/wheat/rice respectively. Identification of beneficiaries under the Act is under two categories- households covered under Antyodaya Anna Yojana (AAY) and Priority Households, within the coverage determined for the State/UT.

Figure 7: Fertilizer Subsidy during 2013-14 to 2019-20 (₹ crores)



Source: Department of Fertilizers.

Priority Households are entitled to receive 5 kg per person per month, AAY households, which constitute the poorest of the poor, continue to receive 35 Kg of foodgrains per household per month. At present, the Act is being implemented in all the States/UTs covering about 80 crore persons to get highly subsidized foodgrains.

7.39 To ensure adequate availability of wheat and rice in central pool, to keep a check on the open market prices and to ensure food security, the Central Government has undertaken a number of measures, which include: -

(a) State Governments, particularly those undertaking Decentralized Procurement (DCP), are encouraged to maximize procurement of wheat and rice.

(b) Strategic reserves of 5 million tonnes of food grains over the operational stocks are maintained to be used in extreme situations.

(c) Sale of wheat and rice is undertaken through Open Market Sale Scheme (OMSS) (Domestic) so as to check inflationary trend in prices of foodgrains.

(d) There are good examples of PDS reforms such as One Nation - One Ration Card, Aadhaar authenticated distribution through e-POS machines (Box 4).

Foodgrains Stocking Norms for the Central Pool

7.40 The Government of India has revised the Buffer Norms w.e.f. January, 2015 and the nomenclature of Buffer Norms has been changed to Foodgrain Stocking Norms to meet the prescribed minimum stocking norms for food security, to ensure monthly releases of foodgrains for supply through the TPDS/ Other Welfare Schemes, to meet emergency situations arising out of unexpected crop failure, natural disasters etc. and to use the foodgrain stock in the Central Pool for

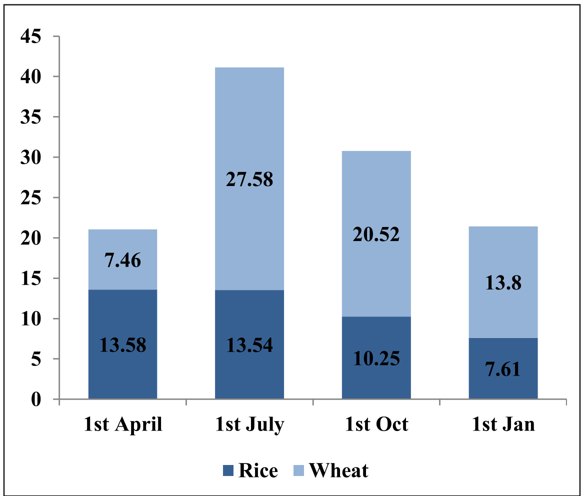
Box 4: One Nation - One Ration Card

The Department of Food & Public Distribution in collaboration with all States/UTs is implementing a Scheme namely "Integrated Management of Public Distribution System (IM-PDS)" during 2018-19 and 2019-20. The main objective of the scheme is to introduce nation-wide portability of ration card holders under NFSA through 'One Nation One Ration Card' System, to lift their entitled foodgrains from any Fair Price Shop (FPS) in the country without the need to obtain a new ration card. This system would largely benefit numerous migratory beneficiaries who frequently change their place of dwelling in search of work/employment or for other reasons across the country and eventually get deprived of their quota of subsidised foodgrains under NFSA due to migration from their native place. Through this system migatory beneficiaries shall be able to access their food security entitlements from any FPS of their choice/convenience by using their same/existing ration cards after biometric/ Aadhaar authentication on electronic Point of Sale (ePoS) devices at the FPS in another State/UT.

At present the facility of inter-State portability is enabled in 8 States i.e. in four clusters of 2-adjoining States of Andhra Pradesh & Telangana, Gujarat & Maharashtra, Haryana & Rajasthan, and Karnataka & Kerala. It is further envisaged that all four clusters, as above, and a few other States having already implemented intra-State portability shall be integrated together into single national platform. Thereafter, rollout of National Portability in other States/UTs shall be done as and when the national de-duplication of all ration cards,beneficiaries under NFSA is completed and biometric/Aadhaar authentication based distribution is enabled in the State/UT.

market intervention to augment supply so as to help moderate the open market prices. The stocking norms of foodgrains in the central Pool, with effect from January, 2015, are given in Figure 8 which also include the strategic reserve of 50 LMT.

Figure 8: Stocking norms of foodgrains in the central pool with effect from January, 2015 (million tonnes)



Source: Department of Food & Public Distribution.

Allocation of Foodgrains Under NFSA/ Targeted Public Distribution System (TPDS)

7.41 NFSA has been implemented in all States/UTs. In Chandigarh, Puducherry and urban areas of Dadra & Nagar Haveli, the NFSA is being implemented in cash transfer mode, under which food subsidy is being transferred into the bank accounts of beneficiaries who then have a choice to buy foodgrains from open market. During the year 2019-20, Government of India has allocated 603.88 lakh tonnes of foodgrains to States/ UTs under NFSA and other Welfare Schemes as on 31st December 2019 (Table 9).

7.42 Government of India also provides assistance to States/UTs to meet the expenditure incurred on intra-State movement of foodgrains and fair price shop dealers' margins. During 2019-20 (up to 31.12.2019), ₹ 1433.25 crore has been released to State Governments/UTs for this purpose.

(i) During Kharif Marketing Season (KMS) 2018-19, 443.99 LMT of paddy in terms of

Table 9: Allocation of Foodgrains to States/UTs under NFSA and Other Welfare Schemes

Category	Quantity (in lakh tonnes)
NFSA (including ICDS & MDM)	596.63
Festival, Natural calamity etc.	2.14
Other Welfare schemes	5.11
Total	603.88

Source: DFPD

rice was procured against an estimated target of 448.00 LMT. In the ongoing KMS 2019-20, a total of 256.10 LMT of paddy in terms of rice has been procured as on 31/12/2019.

(ii) During Rabi Marketing Season (RMS) 2019-2020, 341.33 LMT wheat was procured against 357.95 LMT procured during RMS 2018-19.

(iii) During the KMS 2019-20, procurement of 3,49,250 Metric Tonnes (MT) of coarse grains was approved.

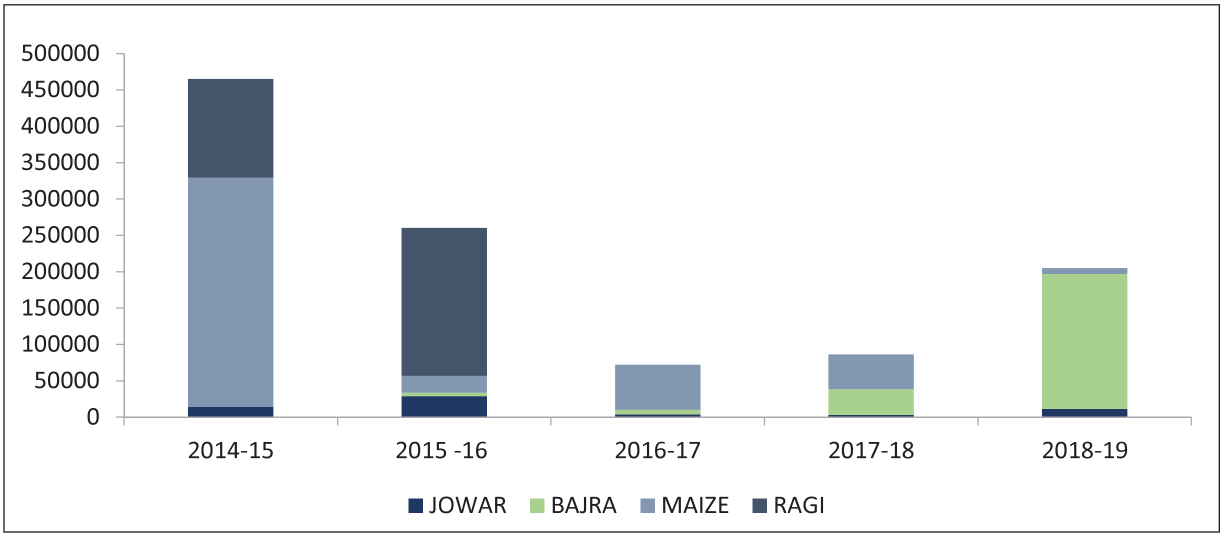
7.43 Procurement of coarse grains during last five years is given in Figure 9. Foodgrains Production, Procurement, Offtake and Stocks is presented in Table 10.

Economic Cost of Food Grains to FCI

7.44 The Economic Cost of foodgrains consists of three components, namely, pooled cost of grains, procurement incidentals and the cost of distribution. The pooled cost of food grains is the weighted MSP of the stock of foodgrains available with FCI at the time of calculating the economic cost. The economic cost for both wheat and rice witnessed significant increase during the last few years due to increase in MSPs and proportionate increase in the incidentals (Figure 10).

7.45 An examination of the determinants of the real economic cost of wheat suggests that MSP,

Figure 9: Procurement of coarse grains (grain-wise) during last five years (metric tonnes)



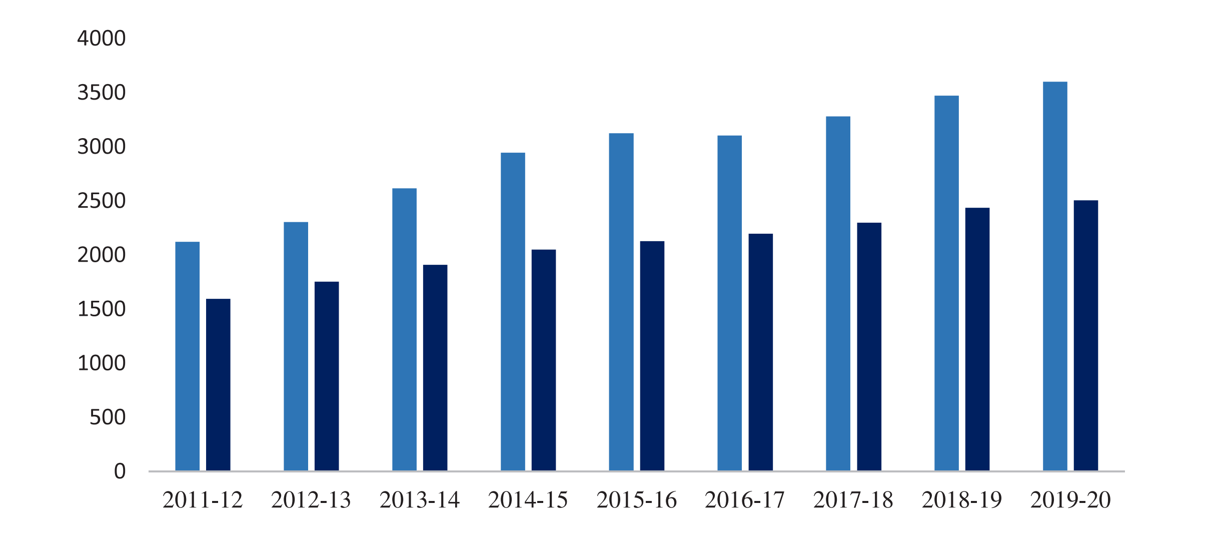
Source: DFPD

Table 10: Foodgrains Production, Procurement, Offtake and Stocks (in million tonnes)

Year	Production of foodgrains minus pulses	Foodgrain Procurement	Procurement as percentage of production	Offtake (TPDS/ NFSA + Welfare schemes)	Stocks as of 1st July
2015-16	235.22	64.91	27.6	53.73	54.72
2016-17	251.98	61.14	24.3	56.58	49.85
2017-18	259.60	69.10	26.6	57.85	53.48
2018-19	261.55*	80.40	30.7	56.40	65.14
2019-20	132.35**	60.06@	45.38@	42.82#	74.40

Source: Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare. Foodgrain bulletin, DFPD.
*As per 4th Advance estimates. ** As per 1st Advance estimates Kharif only.
@ as on 31st December, 2019. # offtake upto December, 2019

Figure 10: Economic Cost of Food Grains to FCI (₹ /quintals)@



Source: FCI Annual Plan, 2019-20.
* Weighted average of common and Grade-A Rice taken together. @ Data from 2014-15 to 2017-18 indicates cost under National Food Security Act (NFSA).

stocks handling charges and average stock of the grain are the significant factors. Increase of one unit in real MSP leads to 0.48 unit increase in real economic cost and the impact is significant.

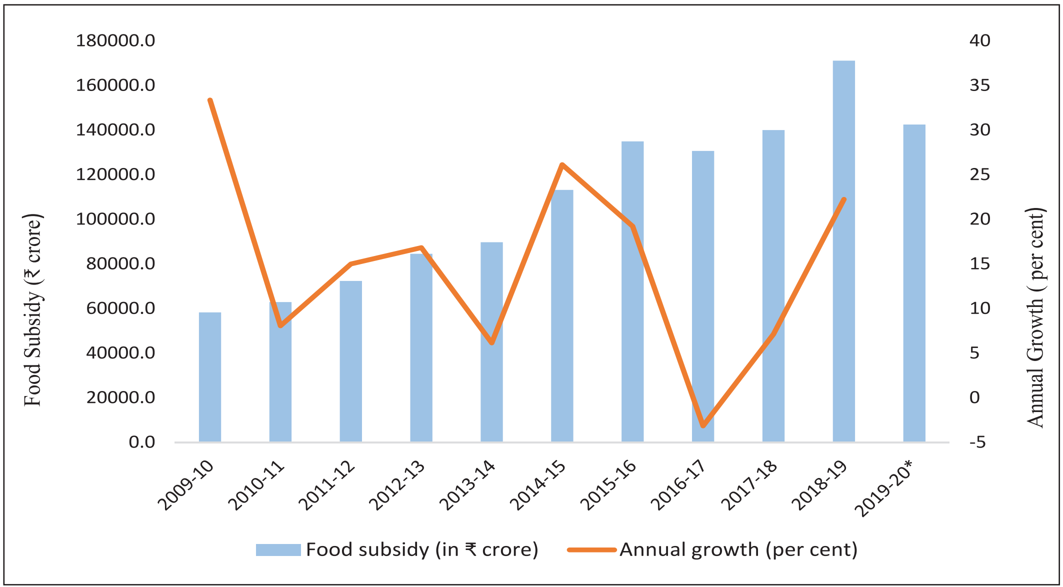
Food Subsidy

7.46 Food subsidy comprises of (i) subsidy provided to FCI for procurement and distribution of wheat and rice under NFSA and other welfare schemes and for maintaining the strategic reserve of foodgrains and (ii) subsidy provided to States for undertaking decentralized procurement. The acquisition and distribution costs of foodgrains for the central pool together constitute the economic cost. The difference between the per quintal economic cost and the per quintal Central Issue Price (CIP) gives the quantum of food subsidy. While the economic cost has increased, the CIP for NFSA beneficiaries has not been revised from ₹ 200/quintal in case of wheat and ₹ 300/quintal in case of rice. These rates were fixed under the Act initially for a period of three years from the date of commencement of the Act (July 13, 2013) and thereafter were to be fixed by the Central Government from time to time, while not exceeding the minimum support price. However, it has not been revised since 2013. This has resulted in widening of the gap between the economic cost and CIP and the food subsidy incurred by the Government has risen substantially over the years (Figure 11).

7.47 The reasons for widenning of the food subsidy have been many. The NFSA while on one hand providing a wider coverage than the erstwhile TPDS, also made the Antyodaya CIPs uniformly applicable to all NFSA beneficiaries. Further, APL/BPL categorization were done away with under NFSA. Coverage under the Act was also delinked from the poverty estimates as it was substantially high to ensure that all the vulnerable and needy sections of the society get its benefit. While retaining the AAY category, the Act covers the rest of the beneficiaries as Priority Households. Moreover, build up of the foodgrain stocks much higher than their norms, increase in economic cost and real MSP and decline in sale realization due to decline in average Central Issue Price for APL households have contributed to the rise in food subsidy.

7.48 While the interests of the vulnerable sections of the population need to be safeguarded, the economic rationale of increasing the CIPs under NFSA also cannot be undermined. For sustainability of food security operations, the issue of burgeoning food subsidy bill needs to be addressed.

Figure 11: Food Subsidy Released and its Annual Growth



Source: Department of Food & Public Distribution

* as on 31.12.2019

Note-I: In Financial Year 2016-17, the total food subsidy released was ₹ 130672.96 crore which included NSSF loan of ₹ 25000 crore to FCI.

Note-II: In Financial Year 2017-18, the total food subsidy released was ₹ 139981.69 crore which included NSSF loan of ₹ 40000 crore to FCI.

Note-III: In Financial Year 2018-19, the total food subsidy released was ₹ 171127.49 crore which included NSSF loan of ₹ 70000 crore to FCI.

Storage

7.49 The storage capacity available with the FCI, a part of warehousing capacity available with the Central Warehousing Corporation (CWC) and State Warehousing Corporations (SWCs) and capacity hired from private sector are used for storage of foodgrains procured for central pool. The total capacity available with FCI and State Agencies for storage of foodgrains as on 30.11.2019 was 750.00 LMT, comprising covered godowns of 617.60 LMT and Cover and Plinth (CAP) facilities of 132.40 LMT. Out of the total available storage capacity of 750.00 LMT the capacity of 401.87 LMT was with FCI and 348.13 LMT with State Agencies. The stock of rice and wheat in the Central Pool on 01.12.2019 was 564.54 LMT.

7.50 Private Entrepreneurs Guarantee Scheme (PEG): To augment the existing storage capacity, construction of godowns has been undertaken in PPP mode in 22 States under Private Entrepreneurs Guarantee (PEG) Scheme through private sector as well as CWC and SWCs. As on 30.11.2019, a capacity of 143.53 LMT has been created under this scheme.

7.51 Central Sector Scheme (erstwhile Plan Scheme): This scheme is implemented in the North Eastern States along with a few other States. Funds from annual budgetary allocation are released by the Government of India to FCI and also to the State Governments for construction of godowns. A total capacity of 1,84,175 MT has been completed by FCI and State Governments during the 12th Five Year Plan (2012-17). This scheme has been extended from 01.04.2017 to 31.03.2022. A capacity of 49,425 MT has been created by FCI & State Governments from 01.04.2017 to 30.11.2019.

7.52 Construction of Steel Silos: Government of India has also approved an action plan for construction of steel silos in the country for a capacity of 100 LMT in Public Private Partnership (PPP) mode for modernizing storage infrastructure and improving shelf life of stored foodgrains. Against this, as on 31.12.2019, a total capacity of 7.25 LMT of silos has been completed.

7.53 Online Depot Management System (ODMS): FCI is implementing an Online Depot Management System (ODMS), also known as Depot Online System (DOS), to automate the entire process of depot operations including receipt of foodgrains at the depot, storage, maintenance activities and issue of foodgrains. It has inbuilt modules for inventory management, quality control, weighbridge integration, storage and transit losses management, gunny inventory etc. This helps in optimizing costs and improving functional efficiency of FCI at the depot level and preventing/ easily detecting any malpractices/lapses. As on 31.12.2019, Depot Online System (DOS) is operational at 533 depots of FCI. While in case of Central Warehousing Corporation (CWC), DOS was installed in 156 depots hired by FCI but 12 depots have since been de-hired. Presently, DOS is installed in all 144 depots of CWC hired by FCI. CWC has also completed roll out of its own Warehouse Management System (WMS) at all 380 warehouses which is proposed to be integrated with DOS.

WAY FORWARD

7.54 The realisation of the objective of doubling farmers' income necessitate addressal of some of the basic challenges of agriculture and allied sector. The issues such as investment in agriculture, water conservation, improved yields through better farming practices, access to market, availability of institutional credit, increasing the linkages between agricultural and non-agricultural sectors, etc. need urgent attention. Allied sectors such as animal husbandry, dairying and fisheries sectors need to be given a boost to provide an assured secondary source of employment and income especially for the small and marginal farmers. Coverage of food processing sector needs to be scaled up to create an additional source of market for agricultural commodities.

7.55 As the proportion of small and marginal holdings is significantly large, land reform measures like freeing up land markets can help farmers in improving their income. Small holdings of India can be better harnessed through appropriate use of farm mechanisation as the degree of farm mechanisation is low as compared to the other major developing countries like Brazil and China. The coverage of irrigation facilities needs to be extended while ensuring an effective water conservation mechanism. An inclusive approach to provision for agricultural credit has to be undertaken to address the issue of skewness in its regional distribution.

7.56 While Government measures are in operation aimed at improving productivity and its marketing, efforts of farmers need to be supplemented with better coverage of direct income/investment support. There is a need to give increased focus on exploring global markets for agricultural commodities to give an additional source of market for the surplus of agricultural produce India currently has.

7.57 There is also a need to reallocate labour resources to other sectors. Though, the structural transformations involved a falling share of agriculture sector and rising share of services sector jobs, more needs to be done to create manufacturing jobs to absorb the large pool of workers.

7.58 Often, FCI stocks are way above buffer norms, which needs to be addressed in time. With a large share of poor people, maintaining food security is still a challenge. The rates fixed under the NFSA initially for a period of three years have not been revised since 2013, resulting in burgeoning food subsidy. The rates under NFSA and the coverage need to be revisited.

CHAPTER AT A GLANCE

- Proportion of Indian population depending directly or indirectly on agriculture for employment opportunities is more than that of any other sectors in India.
- The share of agriculture and allied sectors in the total GVA of the country has been continuously declining on account of relatively higher growth performance of non-agricultural sectors, a natural outcome of development process.
- GVA at constant (2011-12) prices for 2019-20 from 'Agriculture, Forestry and Fishing' sector is estimated to grow by 2.8 per cent.
- Agriculture Mechanization helps the Indian farming transform into commercial from the subsistence farming. The overall farm mechanization in India is about 40 per cent, which is lower compared to China (59.5 per cent) and Brazil (75 per cent).
- The regional distribution of agricultural credit in India shows a highly skewed pattern. It is seen that credit is low in North Eastern, Hilly and Eastern States. The share of North Eastern States has been less than one percent in total agricultural credit disbursement.
- Livestock income has become an important secondary source of income for millions of rural families and has assumed an important role in achieving the goal of doubling farmers' income. Livestock sector has been growing at a CAGR of 7.9 per cent during last five years.
- During the last 6 years ending 2017-18, Food Processing Industries sector has been growing at an Average Annual Growth Rate (AAGR) of around 5.06 per cent. The sector constituted as much as 8.83 per cent and 10.66 per cent of GVA in Manufacturing and Agriculture sector respectively in 2017-18 at 2011-12 prices.
- With the implementation of the National Food Security Act from July 2013, the food subsidy bill has increased from ₹ 113171.2 crore in 2014-15 to ₹ 171127.5 crore in 2018-19. While the interests of the vulnerable sections of the population need to be safeguarded, for sustainability of food security operations, the issue of burgeoning food subsidy bill needs to be addressed