

# Agriculture & Food Management

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*The agriculture sector has experienced buoyant growth in the past two years. The sector, which is the largest employer of workforce, accounted for a sizeable 18.8 per cent (2021-22) in Gross Value Added (GVA) of the country registering a growth of 3.6 per cent in 2020-21 and 3.9 per cent in 2021-22. Growth in allied sectors including livestock, dairying and fisheries has been the major drivers of overall growth in the sector.*

*The measures taken by the Government to augment production and domestic supply of oilseeds and edible oils, interventions made in the sugar sector and promotion of crop diversification are examined. The need for sustainable agriculture through water conservation in irrigation and natural farming and need to promote research and development to improve crop productivity, mechanization, etc. is highlighted. It also discusses how Minimum Support Price (MSP) policy is being used to promote crop diversification. In addition to this, some important findings of the latest Situation Assessment Survey (SAS) have also been discussed. The net receipts from crop production alone have increased by 22.6 per cent as compared to the previous SAS Report of 2014 although there is a visible diversification in the sources of income of the farmers.*

*Allied sectors including animal husbandry, dairying and fishing are steadily emerging to be high growth sectors. The livestock sector has grown at a CAGR of 8.15 per cent over the last five years ending 2019-20. As revealed by the latest SAS, the sector has been a stable source of income across groups of agricultural households accounting for about 15 per cent of their average monthly income. This improvement in the contribution of allied sectors is in line with the recommendations of the Committee on Doubling Farmers' Income which has suggested a greater focus on allied sectors to improve farmers' income. A review of the allied sectors along with the recent programmes and initiatives to harness its potential has also been presented.*

*The Government has placed focus on the food processing sector, which is not only a major market of agriculture produce but is also a significant employer of the surplus workforce engaged in agriculture. Government therefore facilitates food processing through various measures of infrastructure development, subsidised transportation and support for formalization of micro food enterprises.*

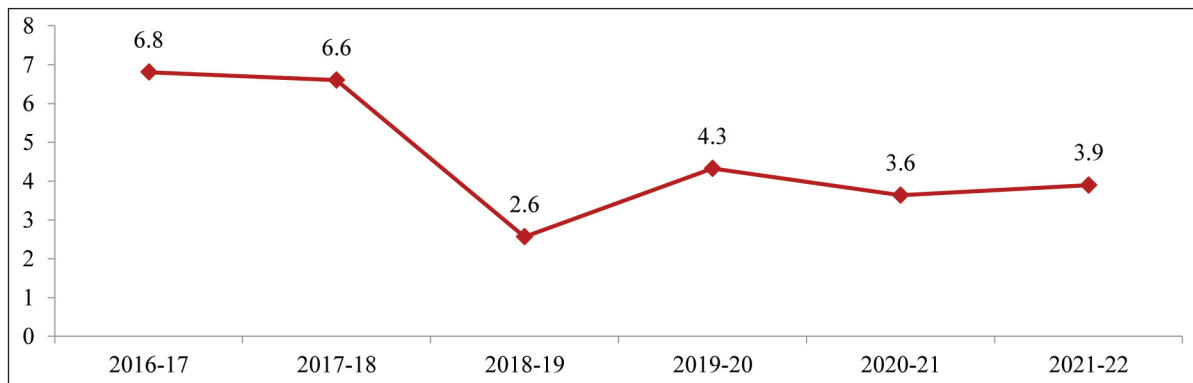
*India runs one of the largest food management programmes in the world. The Government has further extended the coverage of food security network through additional provisions*

of foodgrains through the schemes like PM Gareeb Kalyan Yojana (PMGKY). A review of India's food management programme including food procurement, allocation, storage and the issue of food subsidy along with various Government measures for effective food and nutritional security is also presented at length in the chapter. The chapter ends with a review of the performance of fertilizer sector.

## INTRODUCTION

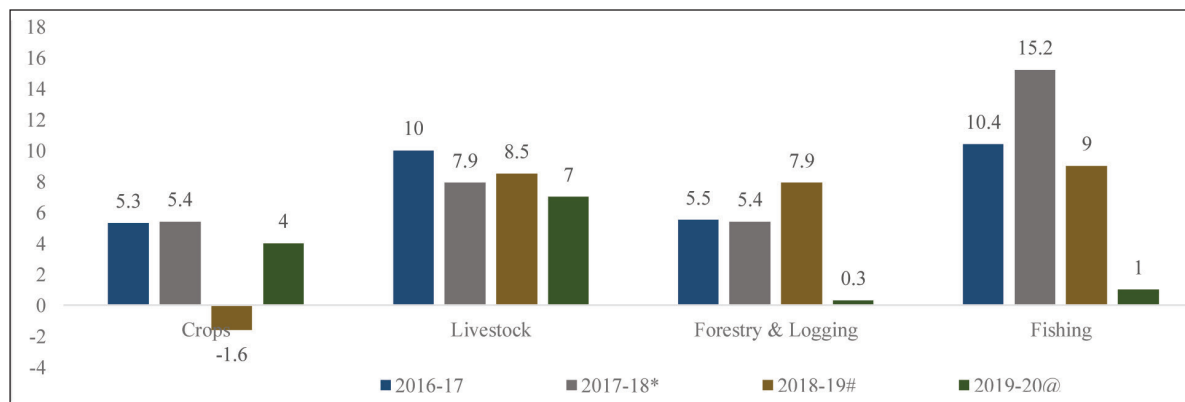
7.1 The agriculture and allied sectors grew at a positive growth rate of 3.6 per cent during 2020-21. This became possible due to good monsoon and various government measures to enhance credit availability, improve investments, create market facilities, promote infrastructure development in the agriculture sector and increase provision of quality inputs to the sector. The timely intervention in the form of Atma Nirbhar Bharat (ANB) Abhiyan coupled with other growth promoting schemes (ANB and other schemes are discussed under respective sections) have further helped agriculture to achieve an improved growth of 3.9 per cent in 2021-22. Figure 1 presents the performance of the agriculture and allied sectors for the last five and half years.

**Figure 1: Growth of Agriculture and Allied Sectors (per cent)**



Source: First Advance Estimates of National Income, 2021-22

7.2 The growth of agriculture & allied sectors as shown in the Figure 1 should be read with Figure 2 depicting the growth in the four constituents of agriculture & allied sectors namely crops, livestock, forestry & logging and fishing & aquaculture. It is observed that livestock and fisheries have been experiencing buoyant growth and has helped the sector perform well. For instance in 2018-19 the growth in the agriculture was buoyed by the performance of livestock and fisheries even though the growth of GVA for crops was -1.6 per cent.

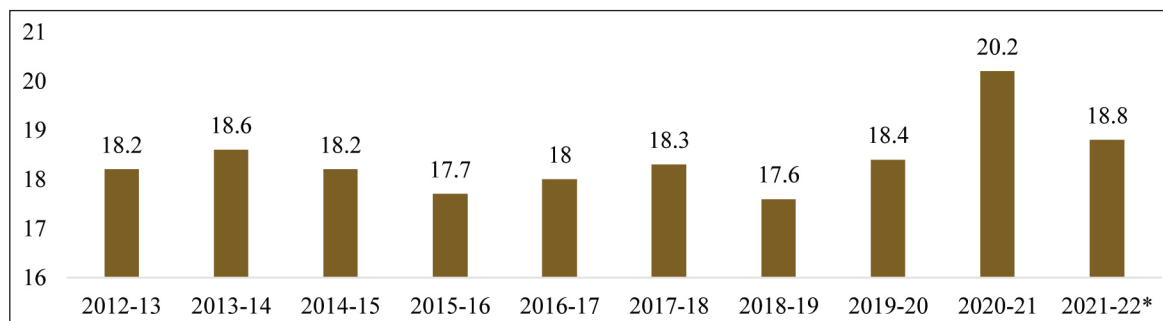
**Figure 2: Growth of GVA of Agriculture & Allied Sector (at 2011-12 prices)**

Source: Based on data received from Department of Agriculture & Farmers Welfare (DAFW).

\*Third revised estimate, #second revised estimate, @ First Revised Estimates released on 29th January, 2021.

## GROSS VALUE ADDED (GVA) IN AGRICULTURE

7.3 A trend in the percentage share of agriculture and allied sectors to total GVA of the economy at current prices for the last ten years is presented in Figure 3. The share of the sector in total GVA of the economy has a long-term trend of around 18 per cent. The share of the agriculture & allied sector in total GVA, however, improved to 20.2 per cent in the year 2020-21 and 18.8 per cent in 2021-22.

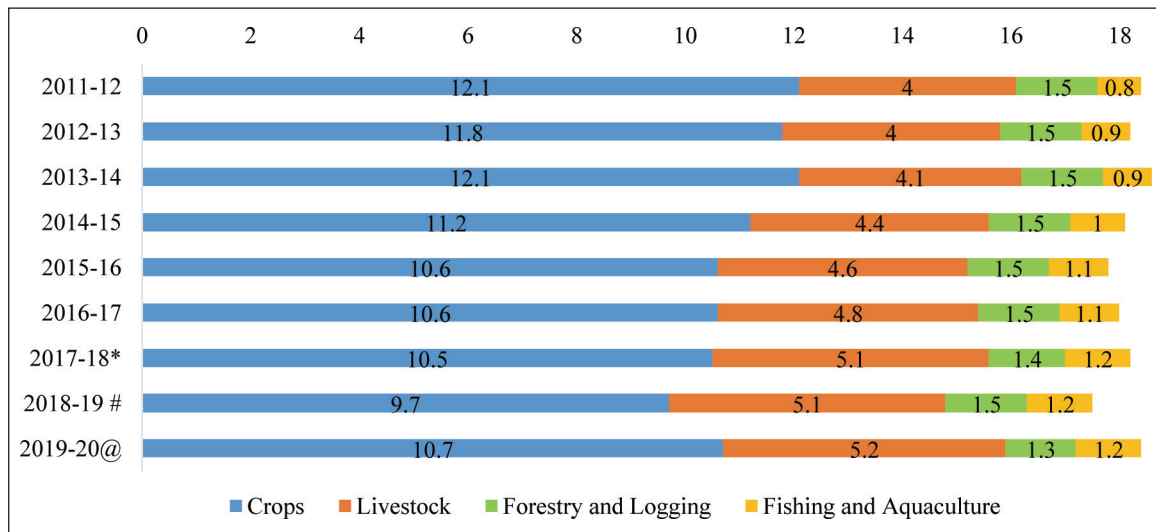
**Figure 3: Percentage Share of GVA of Agriculture & Allied Sector to Total GVA (at current prices)**

Source: Based on data of DAFW.

\*As per 1st Advance Estimates of National Income, 2021-22.

7.4 A trend in the distribution of share of GVA of agriculture among its constituents is presented in Figure 4. Higher growth in allied sectors as compared to crop sector has obvious implications in terms of increasing importance of the former in total agricultural GVA vis-a-vis the later. It may be observed that the share of the livestock and fishing & aquaculture in total agricultural GVA has been improving during the period. Recognising the increasing importance of allied sectors, the Committee on Doubling Farmers' Income (DFI, 2018) considers dairying, livestock, poultry, fisheries and horticulture as engines of high growth and has recommended a focussed policy with a concomitant support system.

**Figure 4: Percentage Share of GVA of Crop & Allied Sectors in Total Agriculture GVA (at current prices)**



Source: Based on data of DAFW.

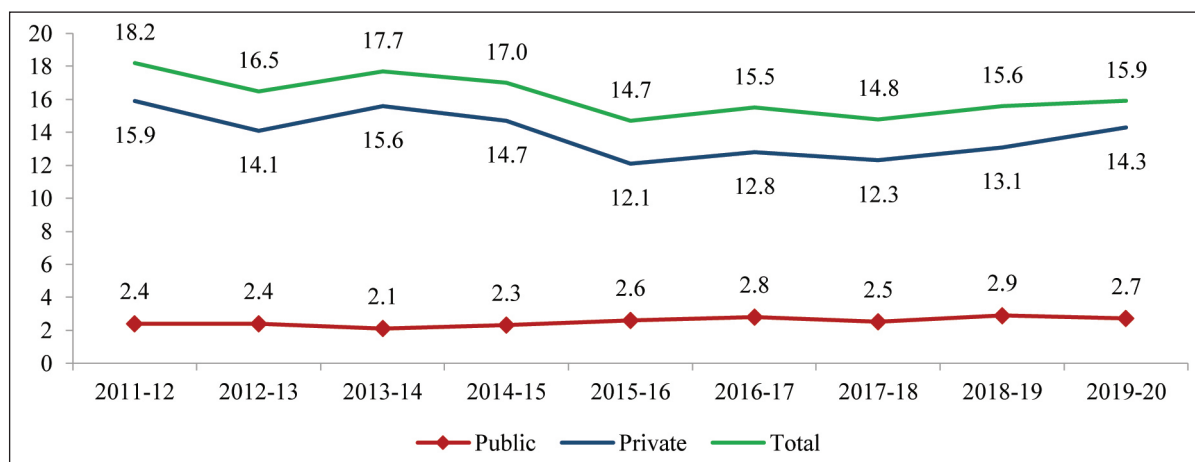
## Investment in Agriculture and Allied Sectors

7.5 Investment is critical to the growth of a sector. The Gross Capital Formation (GCF) in agriculture and allied sectors relative to GVA in the sector has been showing a fluctuating trend as shown in Figure 5. Fluctuation in the GCF in the sector arises mainly because of wide fluctuations in private investment in agriculture and allied sectors. As may be observed in the Figure 5, while public investment has remained stable between 2-3 per cent over the years, the private investment has fluctuated and the total agricultural GCF has moved in sync with variation in private investment.

7.6 Recognising that there exists a direct correlation between capital investments in agriculture and its growth rate, there should be a focused and targeted approach to ensure higher public and private investment in the sector. Higher access to concessional institutional credit to farmers and greater participation of private corporate sector, whose investment rates are currently as low as 2 to 3 per cent in agriculture<sup>1</sup>, may help in improving private investment in agriculture. Private corporate investments need to be crowded in by offering an appropriate policy framework and increase in public investment along the entire agricultural value system.

1. Report of the Doubling Farmers' Income, 2018.

**Figure 5: Percentage Share of GCF in Agriculture and Allied Sectors Relative to Its GVA (at 2011-12 basic prices)**

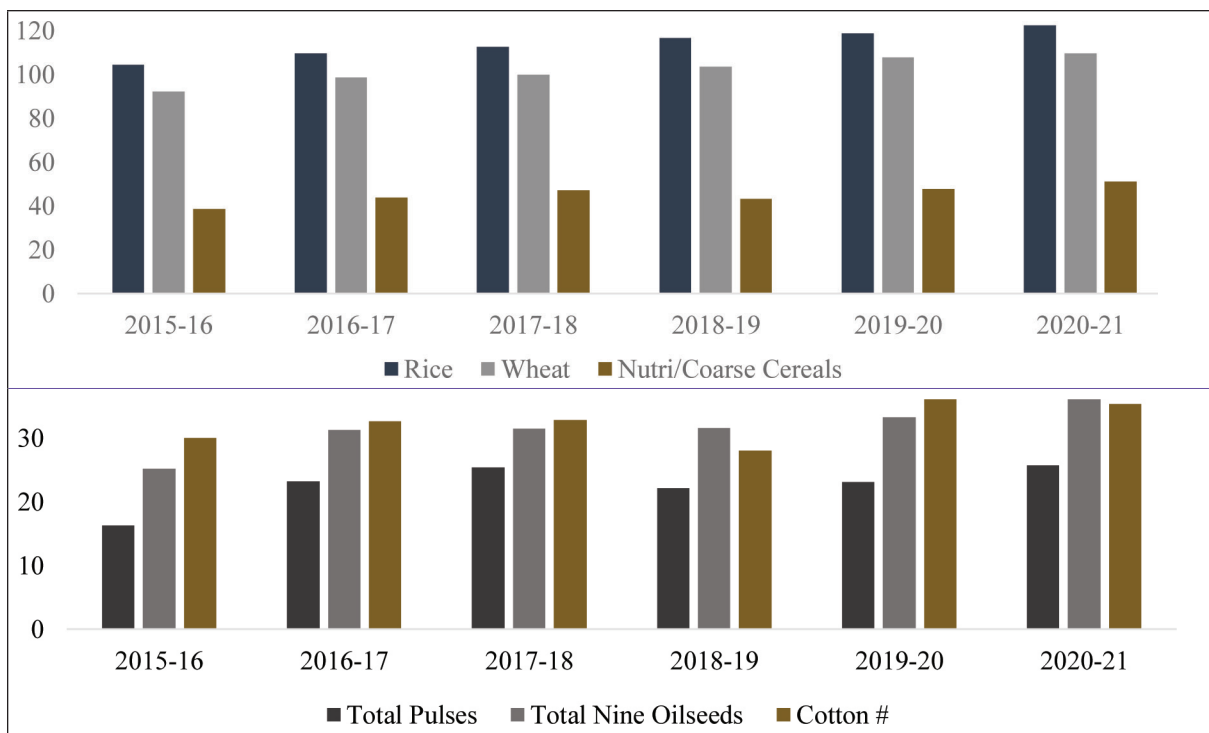


Source: Based on data of DAFW and Agricultural Statistics at a Glance, 2020.

### Agricultural Production

7.7 As per Fourth Advance Estimates for 2020-21, total foodgrain production in the country is estimated at a record 308.65 million tonnes which is 11.15 million tonnes higher than that during 2019-20. The production of rice, wheat and coarse cereals has increased at compound annual growth rates (CAGR) of 2.7, 2.9 and 4.8 per cent respectively during last six years i.e. 2015-16 to 2020-21. The CAGR for pulses, oilseeds and cotton has been 7.9, 6.1 and 2.8 per cent, respectively during the same period. Figure 6 depicts the trend in agricultural production over the past six years.

**Figure 6: Trend in Agricultural Production (Million Tonnes)**



Source: Based on data received from DAFW.

# Million bales of 170 kg each.

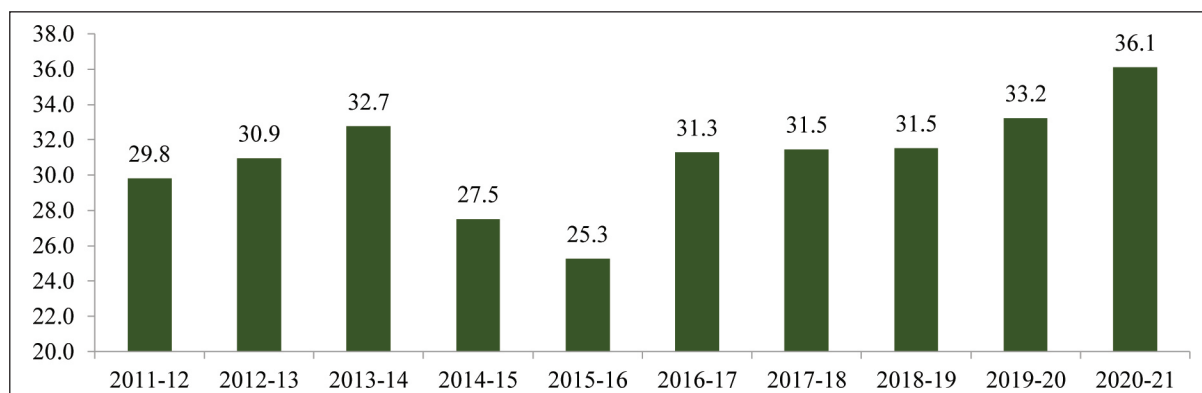
7.8 As per the First Advance Estimates for 2021-22 (kharif only), total foodgrain production in the country is estimated at a record level of 150.50 million tonnes which is higher by 0.94 million tonnes than kharif foodgrain production of 2020-21.

### Edible Oils

7.9 India is one of the major oilseeds growing country. As may be seen from the Figure 7, the oilseed production in India has steadily increased since 2016-17 onward after showing a fluctuating trend prior to that. The oilseed production in India has grown by almost 43 per cent from 2015-16 to 2020-21. The oil production in India has however lagged behind its consumption necessitating import of edible oils (Figure 8).

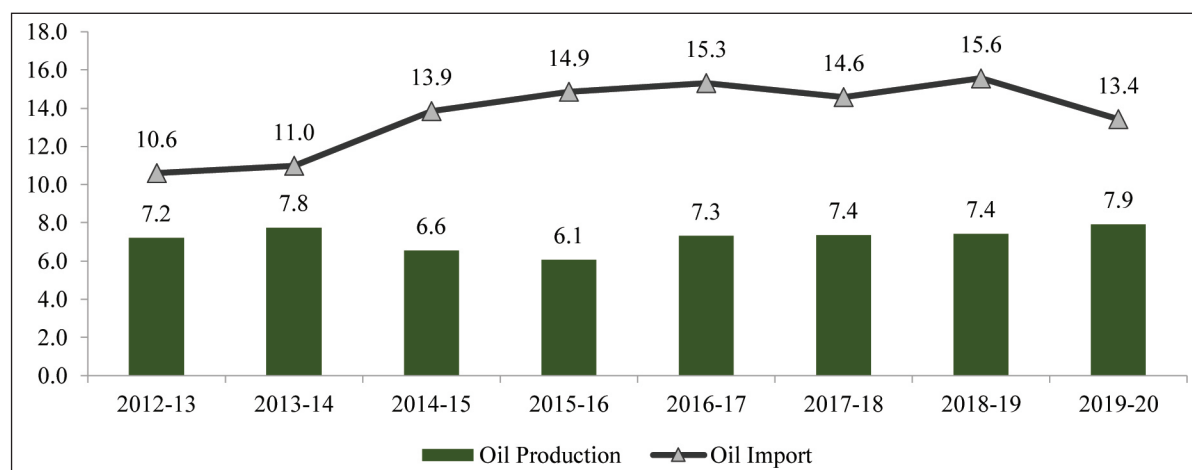
7.10 India is the world's second largest consumer and number one importer of vegetable oil. As urbanisation increases in developing countries, dietary habits and traditional meal patterns are expected to shift towards processed foods that have a high content of vegetable oil. Vegetable oil consumption in India is, therefore, expected to remain high due to high population growth and consequent urbanisation. As per the OECD-FAO Agricultural Outlook 2021-2030, India is projected to maintain a high per capita vegetable oil consumption growth of 2.6 per cent per annum reaching 14 kg/capita by 2030 necessitating a high import growth of 3.4 per cent per annum.

**Figure 7: Trend in Production of Oilseeds (Million Tonnes)**



Source: Based on data of 4th Advanced Estimates as on Directorate of Economics & Statistics Website.

**Figure 8: Production & Import of Oil (Million Tonnes).**



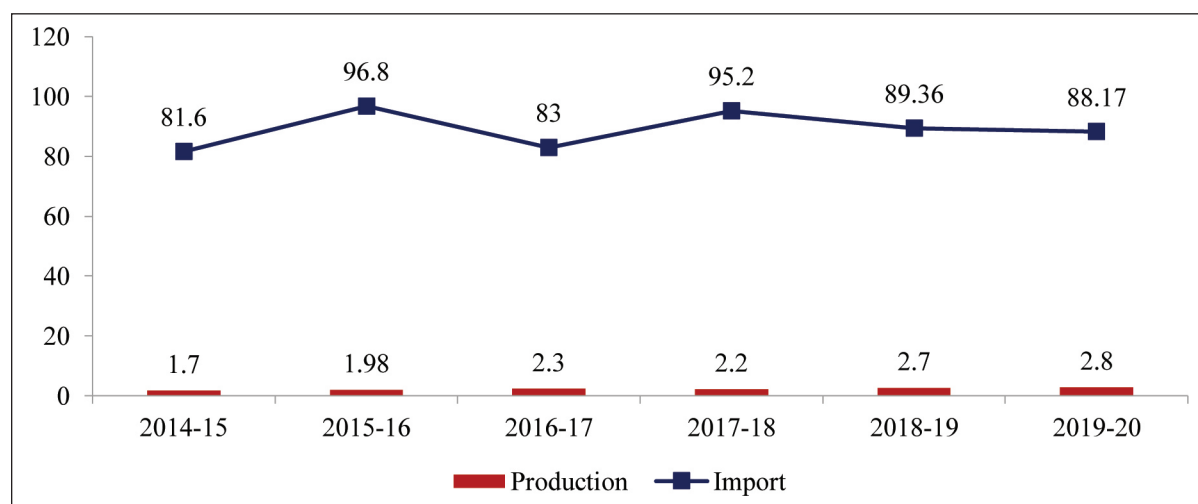
Source: Based on data of Agricultural Statistics at Glance, 2020.

7.11 In view of the persistently high import of edible oil, increase in oil production has been a priority for the Government. The Government is promoting the production and productivity of oilseeds through the centrally sponsored scheme of National Food Security Mission: Oilseeds (NFSM-Oilseeds) from 2018-19 onwards in all districts of India. Under this scheme, interventions such as production of foundation and certified seed and distribution of certified seeds and seed minikits of latest high yielding varieties are undertaken. Under the NFSM (Oilseeds), Government of India has set up 36 oilseeds seed hubs during 2018-19 and 2019-20 with an objective to increase the availability of high yielding quality seed. For Kharif 2021, a total of 9.25 lakh number of oilseed mini kits of high yielding varieties have been allocated for distribution in all the major oilseed growing states. Also, Government has through MSP regime been providing price signal for crop diversification towards production of oil seed (discussed later in the chapter).

7.12 Further, in August, 2021, National Mission on Edible Oils - Oil Palm (NMEO-OP) has been launched to augment the availability of edible oil in the country by harnessing area expansion and through price incentives. Under the scheme, for the first time, Government will give a price assurance to the oil palm farmers for the Fresh Fruit Bunches (FFBs). This will be known as the Viability Price (VP) which will protect the farmers from the fluctuations of the international crude palm oil (CPO) prices.

7.13 India has enormous potential for cultivation of oil palm and production of CPO. At present only 3.70 lakh hectares is under oil palm cultivation. Oil palm produces 10 to 46 times more oil per hectare compared to other oilseed crops and has yield of around 4 tons oil per ha. Given the fact that that even today around 98 per cent of CPO is being imported (production and import of palm oil are shown in Figure 9); the NMEO-OP may be considered a major initiative of the Government. The scheme aims to cover an additional area of 6.5 lakh hectares for oil palm till 2025-26 and thereby reach the target of 10 lakh hectares ultimately. Also, the scheme targets the production of CPO to go up to 11.20 lakh tonnes by 2025-26 and up to 28 lakh tonnes by 2029-30.

**Figure 9: Production and Import of Palm Oil (Lakh Ton)**



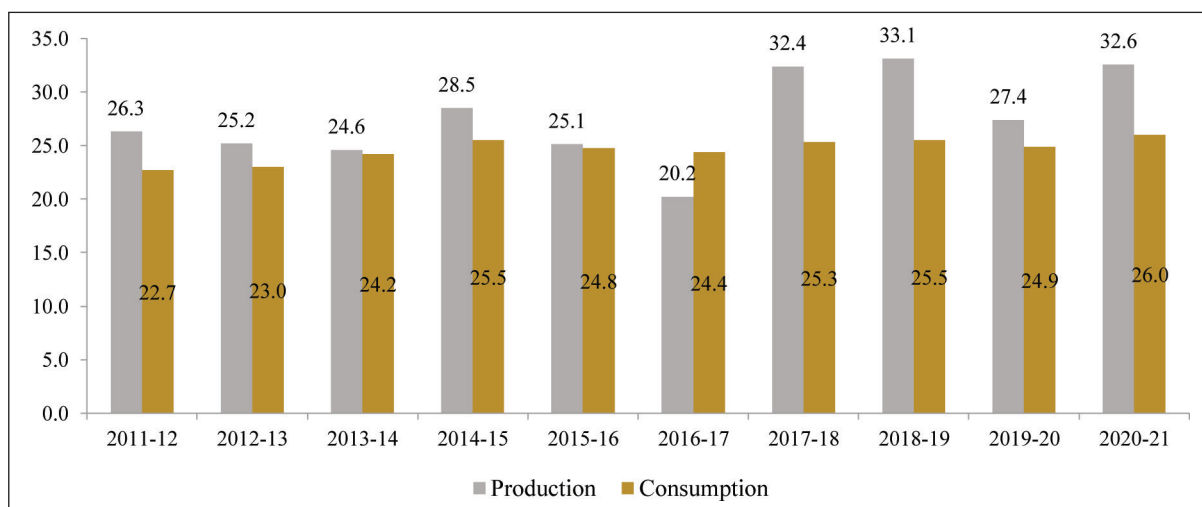
Source: Based on data of Agriculture Statistics at Glance, 2020 and DAFW.

## Sugar Sector

7.14 Significance of sugarcane and sugar industry for India's economy can be gauged from the fact that it is the country's second largest agro-based industry, next to cotton. It impacts the livelihood of over 5 crore farmers and their dependents. India is the largest consumer and the second-largest producer of sugar in the world. Average annual production of sugarcane is around 35.5 crore tonnes which is used to produce around 3 crore tonnes of sugar. The domestic consumption is estimated to be around 2.6 crore tonnes in 2020-21. Over the years, India has become a sugar surplus nation as reflected from the trend of sugar production and consumption in Figure 10. Since 2010-11, production has outstripped consumption except in 2016-17.

7.15 This has been possible because of various measures undertaken by Government. For example, the interest of the farmers is protected by Fair and Remunerative Price (FRP)<sup>2</sup> which has doubled in a span of ten years (Figure 11). In addition, some state governments announce State Advised Price (SAP) at levels higher than FRP. Additionally, sugar mills that buy sugarcane are mandated to purchase crops from farmers within a specified radius known as the Cane Reservation Area. In this way, sugarcane farmers are insured and protected against price risk.

**Figure 10: Production and Consumption Levels of Sugar (Million Tonnes)**

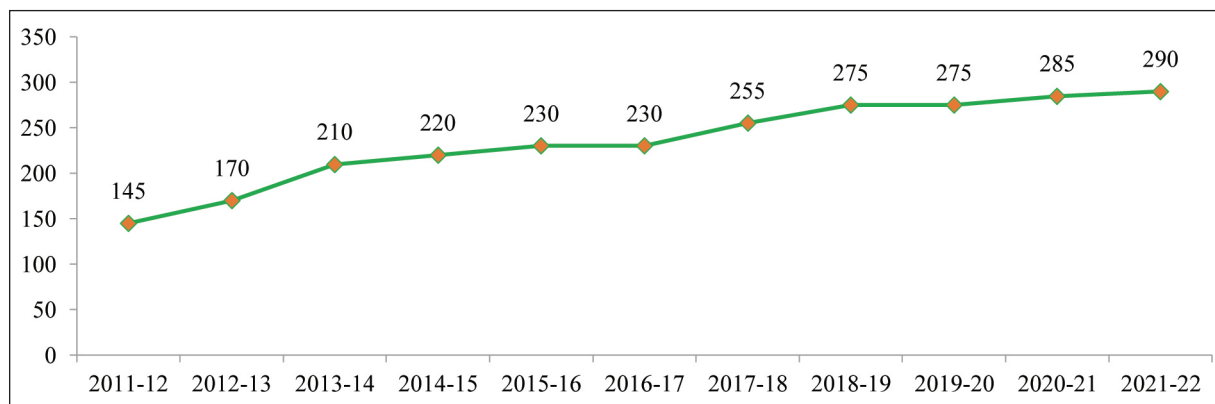


Source: Based on data of CACP Report on Sugarcane.

7.16 Moreover, in order to handle the surplus production and enhance liquidity of mills, the Government has taken various steps such as incentivising sugar mills to divert excess sugar cane/sugar to ethanol production, providing financial assistance for transport to sugar mills to facilitate export of sugar, etc. About 70 LMT of sugar has been exported in sugar season 2020-21 in comparison to 59.60 LMT of sugar export in sugar season 2019-20. Further, contracts of about 30 LMT for export of sugar have already been signed in the sugar season 2021-22. Moreover, in the past four sugar seasons ending 2020-21, revenue of about ₹ 35000 crore has been generated by sugar mills/distilleries from sale of ethanol to Oil Marketing Companies which has helped in clearing cane price arrears of farmers..

2. FRP is the minimum price at which sugarcane is to be purchased by sugar mills from farmers.



**Figure 11: Trend in Fair & Remunerative Price (₹ /quintal)**

Source: Based on data of CACP website.

### Price Policy: Minimum Support Price (MSP)

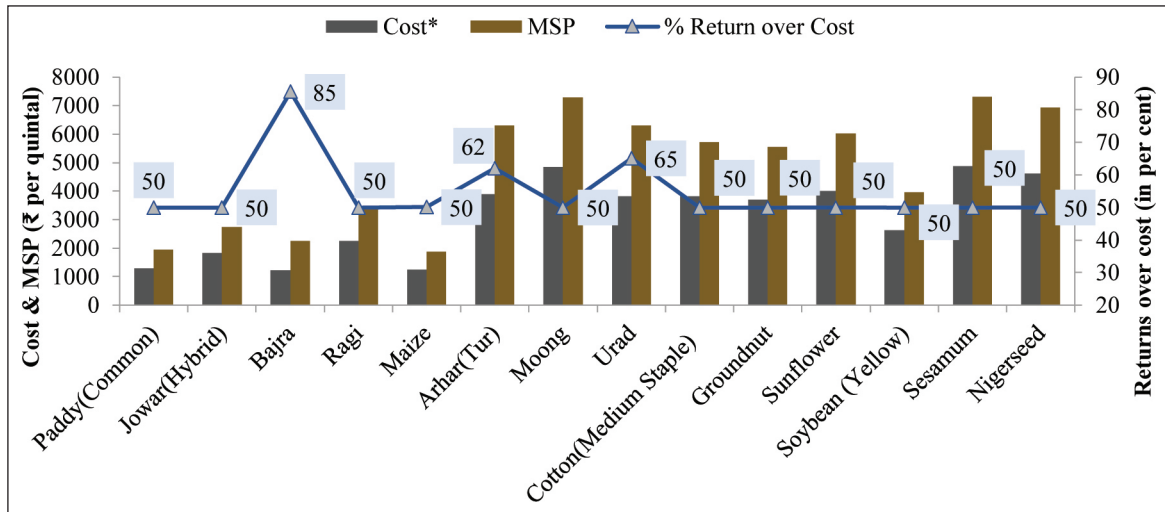
7.17 The Government's price policy for major agricultural commodities seeks to ensure remunerative prices to the growers for their produce with a view to encourage higher investment and production and thereby to safeguard the interest of consumers by making available supplies at reasonable prices. The Government fixes MSP of 22 mandated agricultural crops on the basis of the recommendations of Commission for Agricultural Costs & Prices (CACP) and after due consideration of the views of State Governments and the concerned Central Ministries/ Departments. The 22 mandated crops include 14 Kharif crops viz. paddy, jowar, bajra, maize, ragi, tur (arhar), moong, urad, groundnut, soybean (yellow), sunflower seed, sesamum, nigerseed, cotton and 6 Rabi crops viz. wheat, barley, gram, masur (lentil), rapeseed and mustard, safflower and 2 commercial crops viz. jute and copra. In addition to that, MSP for toria and de-husked coconut are also fixed on the basis of MSPs of rapeseed & mustard and copra respectively.

7.18 While recommending MSPs, CACP considers important factors like cost of production, overall demand-supply conditions, domestic and international prices, inter-crop price parity, terms of trade between agricultural and non-agricultural sectors, the likely effect on the rest of the economy, besides ensuring rational utilization of land, water and other production resources and a minimum of 50 per cent as the margin over cost of production.

7.19 The Union Budget for 2018-19 had announced the pre-determined principle to keep MSP at the level of one and half times of the cost of production. Accordingly, Government had increased the MSP for all mandated Kharif, Rabi and other commercial crops with a return of at least 50 per cent over all India weighted average cost of production from the agricultural year 2018-19 onwards.

7.20 In line with the same principle, Government has announced the increase in MSP for all mandated kharif crops of year 2021-22. The highest absolute increase in MSP over the previous year has been recommended for sesamum (₹ 452 per quintal) followed by tur and urad (₹ 300 per quintal each). In case of groundnut and nigerseed, there has been an increase of ₹ 275 per quintal and ₹ 235 per quintal respectively in comparison to last year. The expected returns to farmers over cost of production is estimated to be highest in case of bajra (85 per cent). For urad and tur, return to farmers over cost of production is estimated at 65 per cent and 62 per cent respectively. For the rest of the crops, return to farmers is estimated to be at least 50 per cent (Figure 12).

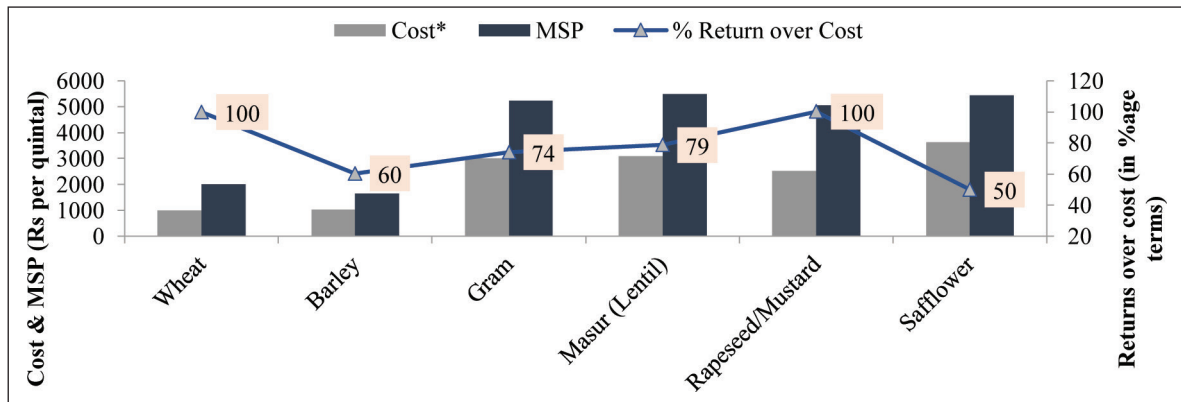
**Figure 12: Cost, MSP & Returns of Kharif Crops for the year 2021-22.**



Source: DAFW

7.21 Government also announced the MSPs for all mandated Rabi crops for Rabi Marketing Season 2021-22. In view of nutritional requirements, changing dietary pattern and to achieve self-sufficiency in pulses and oilseeds production, the Government has fixed relatively higher MSP for these crops (Figure 13). The highest increase in MSP has been recommended for lentil (masur) and rapeseed & mustard at ₹ 400 per quintal each followed by gram at ₹ 130 per quintal and safflower at ₹ 114 per quintal. The expected returns to farmers over their cost of production are estimated to be highest in case of wheat and rapeseed & mustard at 100 per cent each. For masur (lentil) and gram, return to farmers over cost of production is estimated at 79 per cent and 74 per cent respectively and for barley and safflower, it is 60 per cent and 50 per cent respectively. The differential remuneration is aimed at encouraging crop diversification.

**Figure 13: Cost, MSP & Returns of Rabi Crops of year 2021-22**



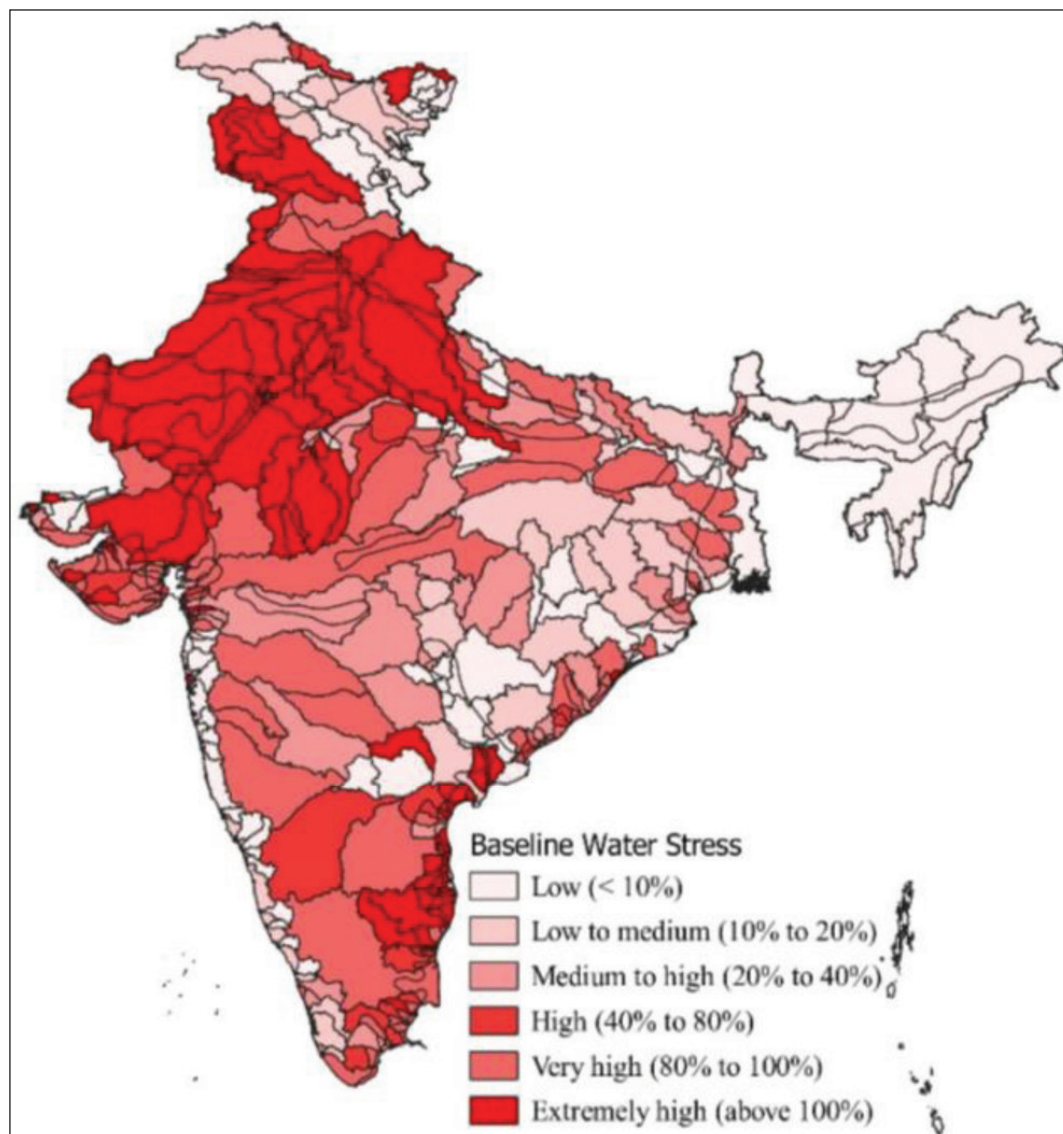
Source: DAFW

### Crop Diversification

7.22 Crop diversification can be used as a tool to promote sustainable agriculture, reduction in import dependence and higher incomes for the farmers. The report of the DFI Committee suggests that shifting some area from staple cereals to high value produce can lead to a sizable increase in the returns for farmers. The Report further states that this would also bring in water

use efficiency and sustainability of soil health. The existing cropping pattern is skewed towards cultivation of sugarcane, paddy and wheat which has led to depletion of fresh ground water resources at an alarming rate in many parts of our country. Map 1 shows baseline water stress<sup>3</sup> for different regions of India. It shows that the regions where the crops like paddy, wheat and sugarcane are grown have high to extremely high stress levels.

**Map 1: Baseline Water Stress in Various Parts of India in 2015**



Source: World Resources Institute

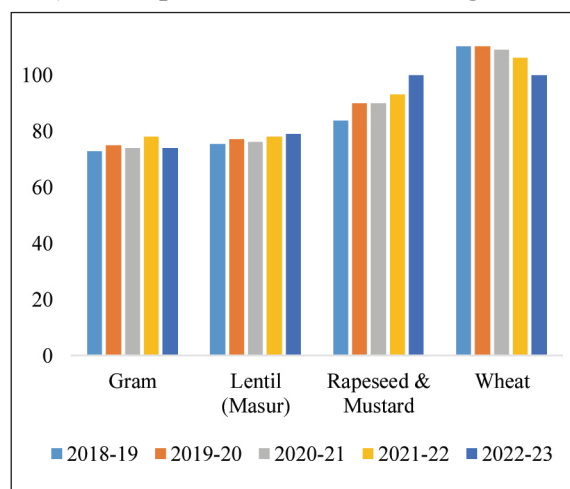
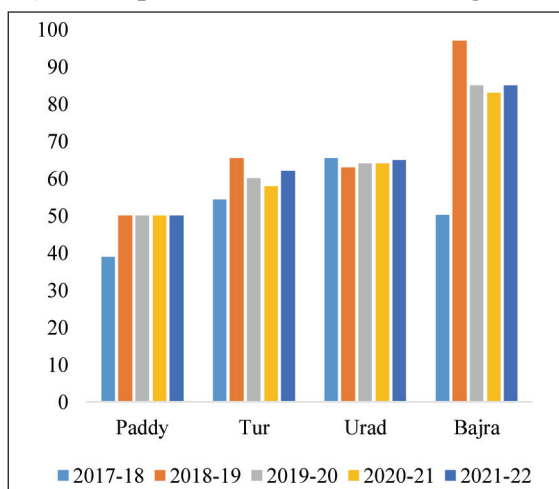
7.23 In view of the above, Crops Diversification Programme (CDP) is being implemented in the original green revolution states viz. Punjab, Haryana and Western UP as a sub scheme of Rashtriya Krishi Vikas Yojana (RKVY) since 2013-14 to shift area under paddy cultivation towards less water requiring crops such as oilseeds, pulses, coarse cereals, nutri cereals, cotton, etc. The CDP also focuses on shifting of areas under tobacco farming to alternative crops/cropping system in tobacco growing States, namely, Andhra Pradesh, Bihar, Gujarat, Karnataka,

3. Baseline water stress implies the ratio of total annual water withdrawals to total available annual renewable supply

Maharashtra, Odisha, Tamil Nadu, Telangana, Uttar Pradesh and West Bengal with effect from 2015-16. An amount of ₹ 120 crore as Central Share (₹ 110 crore to CDP in Original Green Revolution States and ₹ 10 crore to CDP for replacing tobacco farming) have been earmarked for implementation of the programme during 2021-22.

7.24 Crop diversification in India has been targeted through price policy also. Incentive structure provided under MSP regime leading to variation in return over cost across crops has bearing on crop diversification as well. Figures 14 and 15 show an inter-temporal variation in return in selected crops for both Kharif and Rabi seasons.

**Figure 14: Variation in Return over Cost (per cent) for crops across Kharif Marketing Seasons**      **Figure 15: Variation in Return over Cost (per cent) for crops across Rabi Marketing Seasons**



Source: Based on data from CACP.

## Agricultural Credit

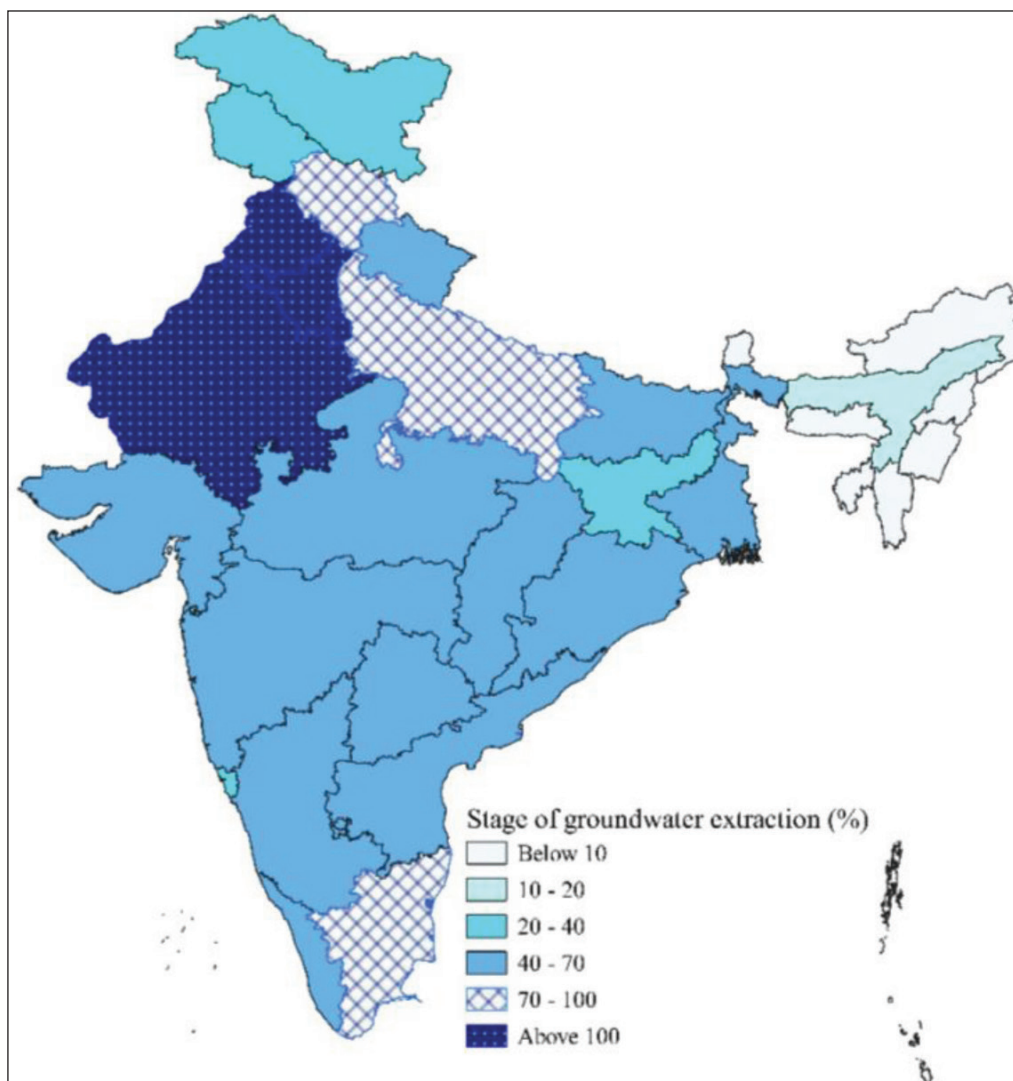
7.25 The agriculture credit flow for the year 2020-21 was ₹ 15,75,398 crore against the target of ₹ 15,00,000 crore for the year. The agriculture credit flow target for 2021-22 has been fixed at ₹ 16,50,000 crore and till 30th September, 2021 against this target a sum of ₹ 7,36,589.05 crore has been disbursed. Moreover, as a part of the ANB announcement, Government announced ₹ 2 lakh crore concessional credit boost to 2.5 crore farmers through Kisan Credit Cards (KCCs). In pursuance of this, as on 17th January 2022, banks have issued KCC to 2.70 crore eligible farmers. Apart from this, to address the credit needs of animal husbandry and fish farmers, the Government of India in 2018-19 extended the facility of KCC to fisheries and animal husbandry farmers to help them meet their working capital needs. In pursuance to this, a total of 67,581 KCCs have been issued to fishers and fish farmers by 17th December, 2021 and over 14 lakh fresh KCCs were sanctioned for animal husbandry and dairying farmers by 10th of December, 2021.

## Water and Irrigation

7.26 Water is a critical input for agriculture which accounts for about 80 per cent of the current water use in the country. The share of net irrigated area accounts for about 49 per cent of the total net sown area in the country and out of the net irrigated area, about 40 per cent is irrigated through canal systems and 60 per cent through groundwater.

7.27 The overall stage of ground water development (ratio of annual ground water draft and net annual ground water availability) in the country is 63 per cent<sup>4</sup>. This ratio which signifies the rate of extraction of ground water, is very high (more than 100 per cent) in the states of Delhi, Haryana, Punjab and Rajasthan. Himachal Pradesh, Tamil Nadu, Uttar Pradesh and UTs of Chandigarh and Puducherry falls in the medium category with the ratio ranging between 70-100 per cent (Map 2). These States may need to focus on both medium and long term ground water recharge and conservation plans.

**Map 2: State of groundwater extraction in 2020 (in per cent)\***



Source: Ground water yearbook, 2019-20

\* Assessment as on 2013 has been considered for the state of West Bengal and data for erstwhile state of J&K is used for UTs of J&K and Ladakh.

7.28 Increased coverage under micro irrigation can be the most effective mode of water conservation. With the objective of facilitating the States in mobilising resources for expanding coverage of micro irrigation, a Micro Irrigation Fund (MIF) with corpus of ₹ 5000 crore was created with National Bank for Agriculture and Rural Development (NABARD) during 2018-

4. Ground water yearbook, 2019-20

19. As on 01.12.2021, projects with loans under MIF amounting to ₹ 3970.17 crore have been approved for 12.81 lakh ha of Micro Irrigation area. Moreover, the Government of India is promoting micro irrigation viz. Drip and Sprinkler Systems in the Country for enhancing water use efficiency at farm level under the Per Drop More Crop component of Pradhan Mantri Krishi Sinchayee Yojana (PMKSY-PDMC) from 2015-16. Under PMKSY-PDMC, as on 14.12.2021, total area of 59.37 lakh ha has been covered under micro irrigation in the country from 2015-16.

## Agricultural Marketing

7.29 Wholesale agricultural marketing is undertaken by the network of 6946 regulated wholesale markets, set up under the provision of respective State Agricultural Produce Market Committee (APMC) Act. The Government of India has been working continuously and has taken several concrete steps to link the farmers with markets in order to help the farmers in trading and realising competitive and remunerative prices for their produce. For example, APMCs, have been recognized as one of the eligible entities under Agriculture Infrastructure Fund (AIF) to further strengthen the infrastructure in APMC mandis. All loans under the AIF have interest subvention of 3 per cent per annum up to a limit of ₹ 2 crores. This subvention is available for a maximum period of 7 years. APMCs are eligible for multiple projects (of different infrastructure types) within their designated market area. In such cases, interest subvention for a loan up to ₹ 2 crores will be provided for each project of different infrastructure types e.g. cold storage, sorting, grading and assaying units, silos, etc. within the designated market area of the APMC.

7.30 Further, Government of India launched National Agriculture Market (e-NAM) Scheme in 2016 with the objective of creating online transparent competitive bidding system to facilitate farmers with remunerative prices for their produce. Under the e-NAM Scheme, Government is providing free software and assistance of ₹ 75 Lakh per APMC mandi for related hardware including quality assaying equipment and creation of infrastructure like cleaning, grading, sorting, packaging and compost unit etc. As on 1st of December, 2021, 1000 mandis of 18 States and 3 UTs have been integrated with e-NAM platform.

7.31 The Government of India has launched a Central Sector Scheme of “Formation and Promotion of 10,000 Farmer Producer Organizations (FPOs)” to form and promote 10,000 new FPOs till 2027-28. Under the scheme, the formation and promotion of FPO is based on Produce Cluster Area approach and specialized commodity-based approach. While adopting cluster-based approach, formation of FPOs focuses on “One District One Product” to enable product specialization. One of the objectives of the Scheme is to enhance productivity through efficient, cost-effective and sustainable resource use and realize higher returns through better liquidity and market linkages for their produce and to become sustainable through collective action. As of January 2022, a total of 1963 FPOs have been registered under the scheme. The Government has established a full-fledged Ministry of Cooperation in July, 2021 with a view to provide greater focus to the cooperative sector.

### Box 1: Sweet Revolution

Keeping in view the importance of beekeeping as part of the Integrated Farming System (IFS) in the country, government approved the allocation of ₹ 500 crore for National Beekeeping & Honey Mission (NBHM) for three years (2020-21 to 2022-23). The mission was announced as a part of the

ANB scheme. NBHM aims for the overall promotion & development of scientific beekeeping in the country to achieve the goal of ‘Sweet Revolution’ which is being implemented through National Bee Board (NBB). Total 45 projects for assistance of ₹ 88.87 crores have been approved/sanctioned for funding under NBHM as on 17.12.2021.

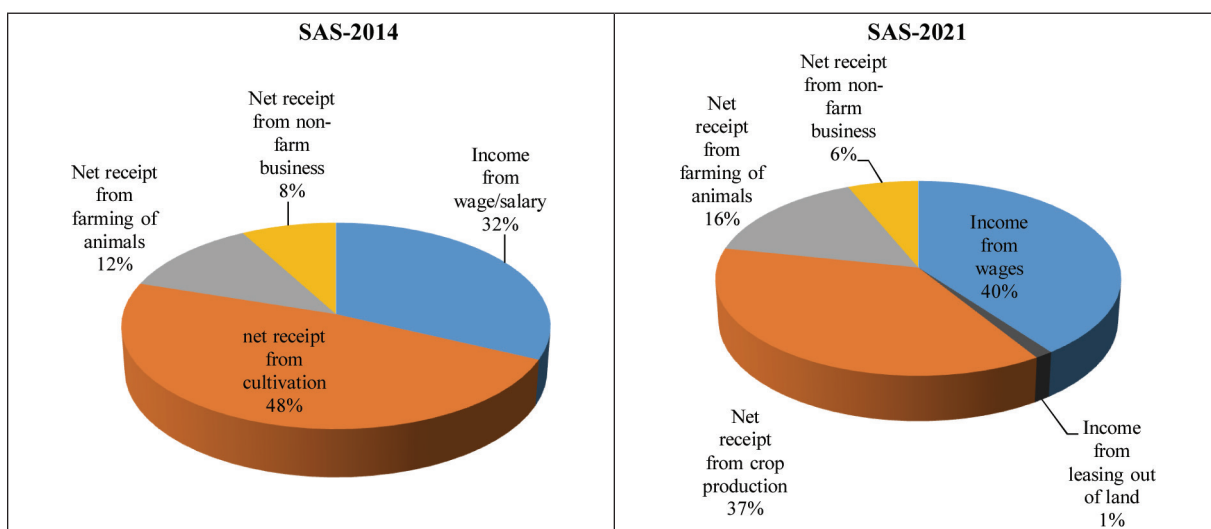
Beekeeping is an agro-based activity which is being undertaken by farmers/ landless labourers in rural area as a part of the IFS. Beekeeping has been useful in pollination of crops, thereby, increasing income of the farmers/beekeepers by way of increasing crop yield and providing honey and other high value beehive products, viz.; bee wax, bee pollen, propolis, royal jelly, bee venom, etc. Diversified agro climatic conditions of India provide great potential and opportunities for beekeeping/honey production and export of honey. India’s export of honey has increased by about 110 per cent between 2013-14 to 2019-20.

## SITUATION ASSESSMENT SURVEY

7.32 National Statistical Office (NSO) in its 77th round of survey, conducted during the period 1st January 2019 to 31st December 2019, carried out a survey on “Land and Livestock Holdings of Households and Situation Assessment of Agricultural Households” (henceforth referred as SAS in this Chapter) in the rural areas of India. The Report was released in September, 2021. The last SAS was published in 2014.

7.33 The SAS reports, apart from various other socio-economic aspects of agricultural households, they also reveal insights on their income and its sources. The SAS, 2021 reveals that the average monthly income per agricultural household, as per paid out expenses approach, works out to be ₹ 10218. The average monthly income per agricultural household was ₹ 6426 as per the last SAS Report of 2014 estimated by the same approach. The sources of the incomes as per the two SAS Reports are presented in Figure 16.

**Figure 16: Composition of Average Monthly Income of Agricultural Households**

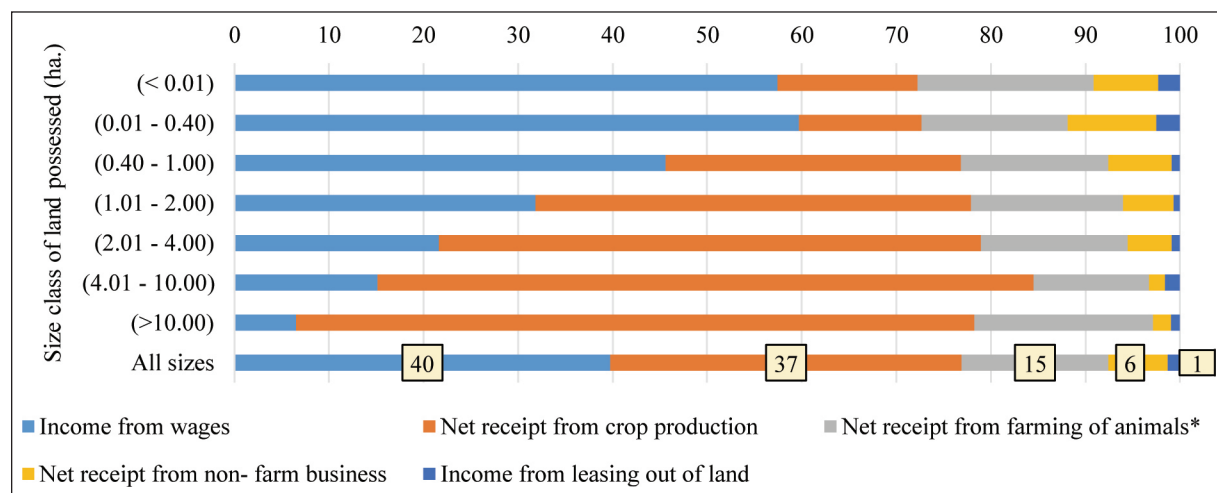


Source: Based on data of SAS, 2014 and SAS, 2021.

7.34 The SAS Report, 2021 also shows class-wise distribution of sources of incomes (Figure 17) among the agricultural households. The net receipts from the crop production alone has

increased by 22.6 per cent as compared to the previous SAS Report of 2014. The net receipts from other sources increased by 92.6 per cent with increase in overall net receipts at 59 per cent. The crop income with a share of 37 per cent continues to be an important source of farmer’s income although there is a visible diversification in the sources of income of the farmers.

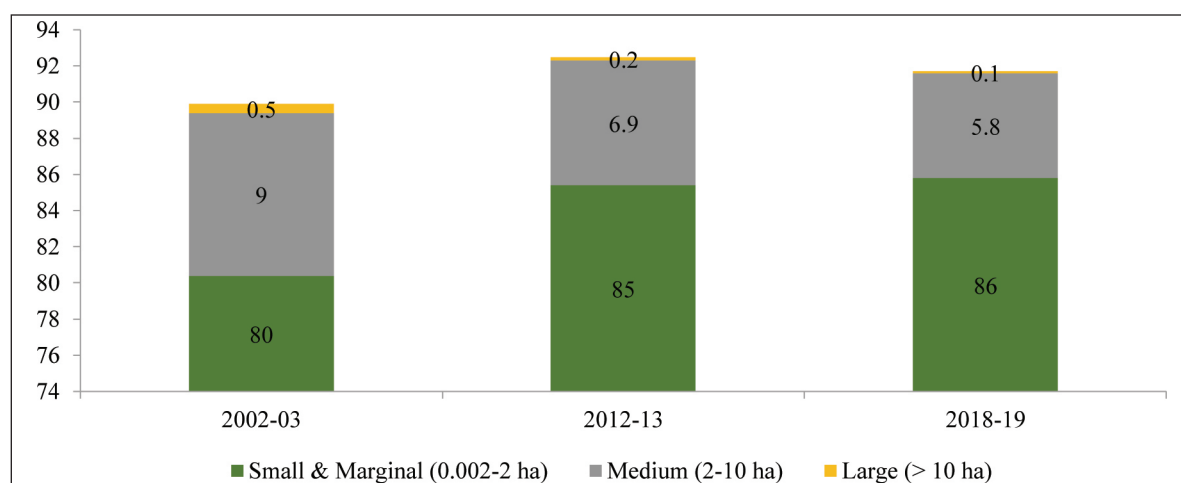
**Figure 17: Sources of Average Monthly Income Class-wise (per cent)**



Source: Based on data of SAS, 2021.

7.35 The SAS Report, 2021 also shows increasing fragmentation of holdings as is evident from the increasing share of small farmers in Figure 18. The average size of household ownership holdings has declined from 0.725 hectare in 2003 to 0.592 hectare in 2013 and further to 0.512 hectare in 2019. Increasing number of small farmers and increasing importance of livestock sector requires increased focus on the measures like development of small farm technology, boosting non-farm businesses and development of allied activities including animal husbandry, dairying and fisheries.

**Figure 18: Distribution of Households by Size Category of Ownership Holdings (per cent)**



Source: Based on data of SAS, 2021.

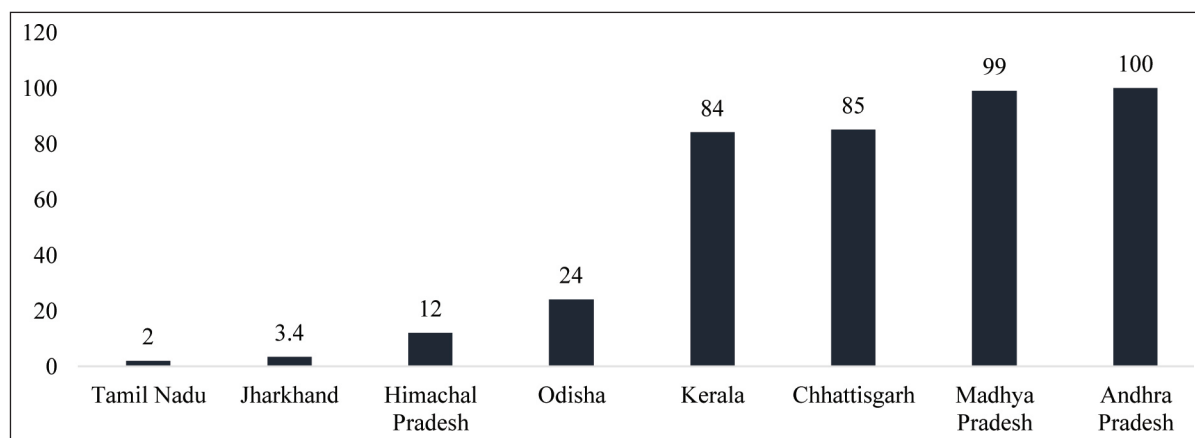


## Natural Farming

7.36 The main aim for promotion of Natural Farming is elimination of chemical fertilisers and pesticides usage and promotion of good agronomic practices. Natural Farming also aims to sustain agriculture production with eco-friendly processes in tune with nature to produce agricultural produce free of chemicals. Soil fertility & soil organic matter is restored by natural farming practices. Natural farming systems require less water and are climate friendly.

7.37 Natural farming in India is being promoted through a dedicated scheme of Bharatiya Prakritik Krishi Paddhati Programme (BPKP). The scheme promotes on-farm biomass recycling with major stress on biomass mulching, use of on-farm cow dung-urine formulations, periodic soil aeration and exclusion of all synthetic chemical inputs. Under BPKP, financial assistance of Rs 12200/ha for 3 years is provided for cluster formation, capacity building and continuous handholding by trained personnel, certification and residue analysis. State-wise area covered under the scheme is shown in Figure 19.

**Figure 19: Area Covered under BPKP as on 07.12.2021 (in '000 ha).**

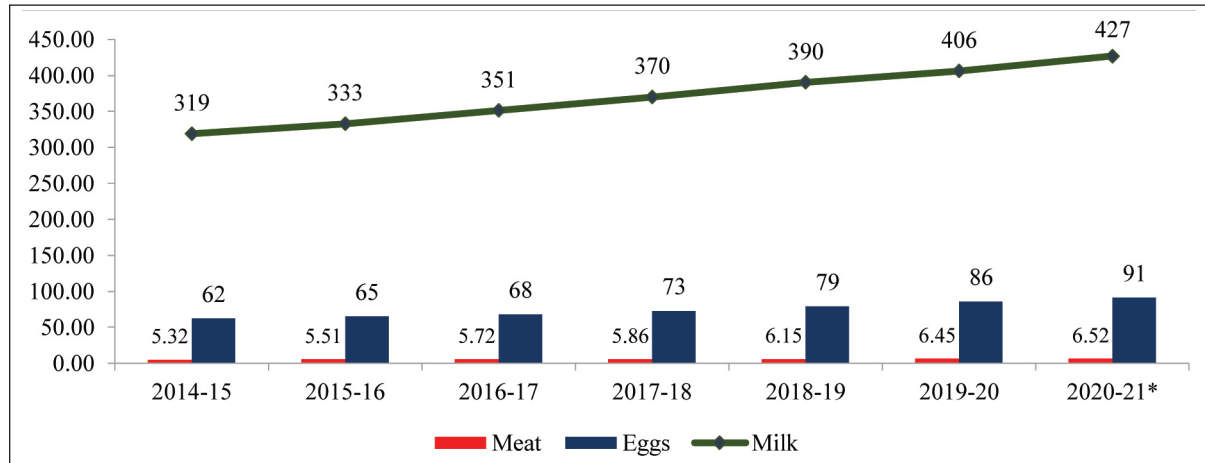


Source: Based on data of the Ministry of Agriculture and Farmers Welfare

## ALLIED SECTORS: ANIMAL HUSBANDRY & DAIRYING

7.38 Livestock Sector is an important subsector of agriculture in the Indian economy. It grew at a CAGR of 8.15 per cent during 2014-15 to 2019-20 (at constant prices). As per the estimates of National Accounts Statistics (NAS) 2020 for sector wise GVA of agriculture and allied sectors, the contribution of livestock in total agriculture and allied sector GVA (at constant prices) has increased from 24.32 per cent (2014-15) to 29.35 per cent (2019-20). Livestock sector contributed 4.35 per cent of total GVA in 2019-20. Development of livestock sector has led to improvement in per capita availability of milk, eggs and meat (Figure 20).

**Figure 20: Per Capita Availability of Milk (gram per day), Meat (kg per year) and Eggs (number per annum)**

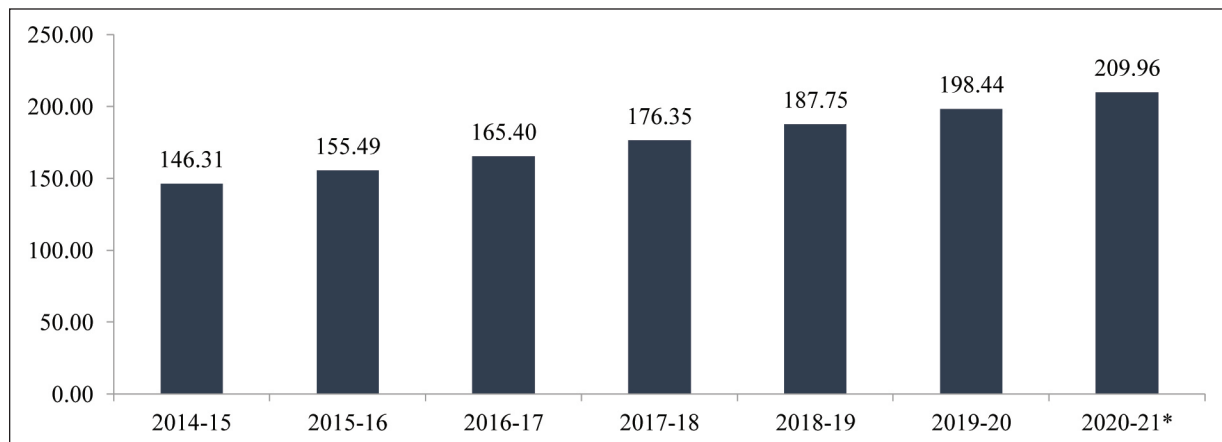


Source: Based on data received from Department of Animal Husbandry & Dairying

## Dairy Sector

7.39 Dairy is the single largest agricultural commodity contributing 5 per cent of the national economy and employing more than 8 crore farmers directly. India is ranked 1st in milk production contributing 23 per cent of global milk production. Milk production in the country has grown at a compound annual growth rate of about 6.2 per cent to reach 209.96 million tonnes in 2020-21 from 146.31 million tonnes in 2014-15 (Figure 21).

**Figure 21: Trend of Milk Production in India (Million Tonnes)**

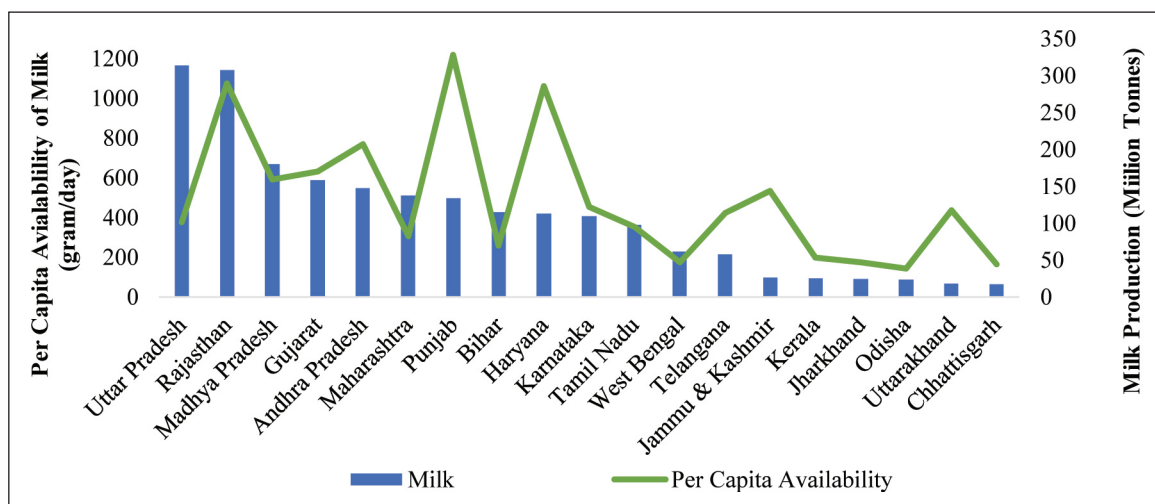


Source: Based on data taken from the National Dairy Development Board and DAHD.

\*Data is provisional

7.40 The all India per capita availability of milk is 427 grams per day in 2020-21 (provisional). Inter-state variability in milk production and per capita availability of milk during the year 2020-21 is shown in Figure 22.

**Figure 22: Inter-State Variability in Milk Production (in million tonnes) & Per Capita Availability of Milk (gram per day) during the Year (2020-21\*).**



Source: DAHD.

\*Data is provisional

## Egg and Meat Production

7.41 According to FAOSTAT production data (2020), India ranks 3rd in Egg Production and 8th in meat production in the world. Egg production in the country has increased from 78.48 billion in 2014-15 to 122.11 billion Nos. in 2020-21 (Provisional). The per capita availability of egg is at 91 eggs per annum in 2020-21 (Provisional). Meat production in the country has increased from 6.69 million tonnes in 2014-15 to 8.80 million tonnes in 2020-21 (Provisional).

## Recent Initiatives in Animal Husbandry and Dairy Sector

### National Animal Disease Control Programme

7.42 National Animal Disease Control Programme (NADCP), which is the largest ever vaccination programme carried out either for human or animal vaccination in the world, is being implemented with the aim to control and eventually eradicate the Foot & Mouth Disease (FMD) and Brucellosis by 2030.

7.43 The vaccination under the NADCP was started from 31st January, 2020 onwards and got disrupted due to lockdown in the country. FMD vaccination was restarted in May 2020 and the first round of FMD vaccination has been completed in 11 States. During 2021-22, the second phase of the vaccination commenced from July, 2021 and so far 5 crore animals have been vaccinated against FMD and 27.8 lakh animals vaccinated against brucellosis till December, 2021. Further, advisories and guidelines on management of disease outbreak were sent to States/UTs.

### Animal Husbandry Infrastructure Development Fund (AHIDF)

7.44 As part of the ANB stimulus package, the Animal Husbandry Infrastructure Development Fund (AHIDF) worth Rs 15,000 crore was launched in 2020. AHIDF facilitates investments in the establishment of infrastructure for dairy and meat processing and establishment of animal feed plants by the FPOs, individual entrepreneur, MSME, Section 8 companies and private

companies. Under this scheme the Central Government provides 3 per cent interest subvention to the borrower and credit guarantee up to 25 per cent of total borrowing. As on 17.12.2021, a total of 76 projects have been approved under the scheme involving a project cost of ₹ 1802.28 crore. The amount of interest subvention released under the scheme was ₹ 12.74 crore during 2020-21 and ₹ 6.40 crore (as on 17.1.2022) during 2021-22.

## FISHERIES

7.45 India is the second largest fish producing country in the world accounting for 7.56 per cent of global production. It contributes about 1.24 per cent to the country's GVA and over 7.28 per cent to the agricultural GVA. Fisheries sector has demonstrated an outstanding double-digit average annual growth of 10.87 per cent since 2014-15 with record fish production of 145 lakh tons in FY 2020-21 (provisional). In terms of employment, the sector supports the livelihood of over 28 million people in India especially the marginalized and vulnerable communities. Export earnings from the fisheries sector was ₹ 46,662.85 crore during 2019-20.

7.46 Recognizing the significance of the fisheries sector, the Government has taken several initiatives over the years to unlock its full potential. To address the credit needs of fish farmers, the Government of India in 2018-19 extended the facility of KCC also to fisheries in addition to animal husbandry farmers to help them meet their working capital needs. For fishers and fish farmers, the working capital includes the cost of fuel, ice, labour charges, mooring/landing charges, etc. The credit limit for the existing KCC holders is ₹ 3 lakhs, whereas the limit for new KCC holders for fisheries is only ₹ 2 lakhs. As on 31st December 2021, a total of 1,04,157 KCCs have been issued to fishers and fish farmers and an additional 5.04 lakh applications from fishers and fish farmers are with the banks at various stages of issuance.

7.47 Further, the Government launched a new flagship scheme of ₹ 20,050 crores called Pradhan Mantri Matsya Sampada Yojana (PMMSY) in May 2020 as a part of the ANB Package. Under PMMSY, key interventions include enhancing fish production and productivity, modernizing and strengthening the value chain, creating fisheries and post-harvest infrastructure and developing robust fisheries management and regulatory frameworks. Moreover, emphasis is laid on addressing critical gaps in the value chain through technology infusion, optimal water management to achieve 'more crop per drop', improved quality and hygiene of fish and fish products, insurance, value addition, demand-based branding and marketing and promotion of initiatives bringing economic returns for stakeholders. Additionally, the scheme prioritizes sustainability and traceability from 'catch to consumer' for augmenting fisheries exports and maintaining competitiveness in the global markets. The scheme aims to create a conducive environment for private sector participation and promotes the dynamic development of innovative entrepreneurial ventures and viable business models in the fisheries sector. By December, 2021, under PMMSY, proposals with an outlay of ₹ 11295.12 crores have been received from various States/UTs against which the project proposals with total outlay of ₹ 5584.74 crores have already been approved with ₹ 1975.63 crore as the share of the Centre.

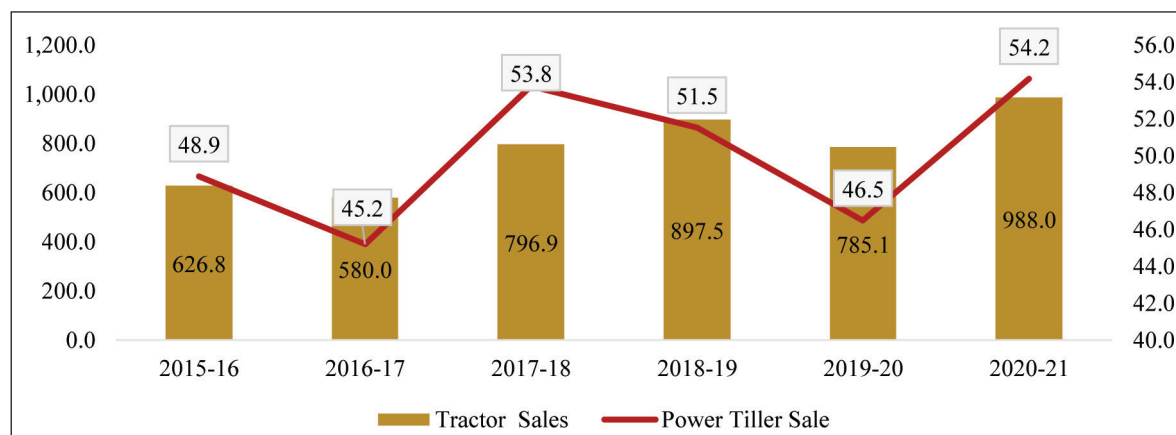
## AGRICULTURAL RESEARCH AND EDUCATION

7.48 Agricultural research and education has a key role in the development of an environmentally sustainable global food system, ensuring food and nutritional security and increasing farm income by cost minimization and yield maximization. Recognising these objectives, the National Agricultural Research System of India has produced significant results in terms of mechanisation of agriculture and development of climate resilient technologies and high yielding varieties (HYVs) of seeds, etc. For example, the Indian Council of Agricultural Research (ICAR) during 2020 and 2021 notified/released a total of 731 new varieties/ hybrids of field crops and 98 of horticultural crops. To ensure nutritional security through the natural food system and facing the climate change, the Department of Agricultural Research & Education (DARE) has developed 35 special trait varieties including biofortified and stress tolerant varieties of field and horticulture crops during 2021-22, taking the tally of biofortified varieties to 87. ICAR has also designed and developed an Agri-voltaic system of 105 kW for crop production and electricity generation from a single land use system with an average photovoltaic (PV) generation of 1,29,266 kWh annual power output and a total revenue of about ₹ 6 lakh. Agri-voltaic system also reduces Green House Gas (GHG) emission (598 tons of CO<sub>2</sub> savings/year/ha).

### Mechanization

7.49 Farm mechanization reduces the cost of cultivation and increases productivity through efficient use of other inputs and natural resources. The penetration of powered machines in various farm activities is assessed in the range of 40 to 45 per cent (NABARD, 2018). Mechanization in farm operations for major crops in India in 2019-20 has been 70, 38, 31 and 32 percent in seed bed preparation, sowing/planting/transplanting, weeding- interculture & plant protection and harvesting & threshing, respectively. To promote an inclusive growth of farm mechanization in the country, a Sub Mission on Agricultural Mechanization (SMAM) was launched in the year 2014-15. Under the scheme, assistance is given to State Governments for providing training and demonstration of agricultural machinery and assist farmers in procurement of various agricultural machinery and equipments as also for setting up of Custom Hiring Centre (CHC). During 2014-15 to 2020-21, a total of 27828 CHC and during 2020-21 alone, 9432 CHC were established under the SMAM scheme. The Government has also developed and launched Multi lingual Mobile App called Farm Machinery Solutions (FARMS) which helps the farmers in getting rented farm machinery and implements through CHC in their area.

7.50 Sale of tractors and power tillers may be used as an indicator of farm mechanisation (Figure 23). Indian tractor industry is the largest in the world accounting for one-third of the total global production. The farm equipment market in India is estimated at USD 8.8 billion in 2017 and it is expected to reach USD 12.5 billion by 2022. The tractor market is expected to grow at a CAGR of 7 per cent by 2022.

**Figure 23: Sale of Tractors and Power Tillers in India (in thousand number)**

Source: Based on data received from DAFW.

## Crop Residue Management

7.51 Air pollution due to stubble burning in the states of Haryana, Punjab, Uttar Pradesh and the NCT of Delhi has been a major concern. Hence, to support the efforts of the Governments to address air pollution and to subsidize machinery for the farmers for in-situ management of crop residue, a 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’ (CRM) for the period from 2018-19 to 2020-21 had been launched with a total outlay of ₹ 1791.80 crore. Under this scheme, during 2020-21, 51988 numbers of various agricultural machinery were distributed and 15106 numbers of Custom Hiring Centres were established.

## Role of R&D in Agriculture

7.52 Research and development and its application in agriculture & allied sectors can play a major role in realisation of sustainable agriculture practice that efficiently meets the objectives of nutritional security and improvement in farm income. World’s food system contributes to about one-fifth of global greenhouse gas (GHG) emissions. According to a report of the International Food Policy Research Institute, agriculture is key to meeting half of the 17 Sustainable Development Goal (SDG) targets which, inter alia, include the targets of eliminating poverty and hunger and reducing inequalities. Climate-resilient varieties with resistant to multiple pests and diseases and abiotic stress is a significant area of work in the context of climate change and food security.

7.53 Research<sup>5</sup> shows that every rupee spent on agricultural research and development, yields much better returns (11.2), compared to returns on every rupee spent on fertiliser subsidy (0.88), power subsidy (0.79), education (0.97) or on roads (1.10). Increasing R&D spending on agriculture is, therefore, not only a vital necessity for ensuring food security, but also important from the socio-economic point of view.

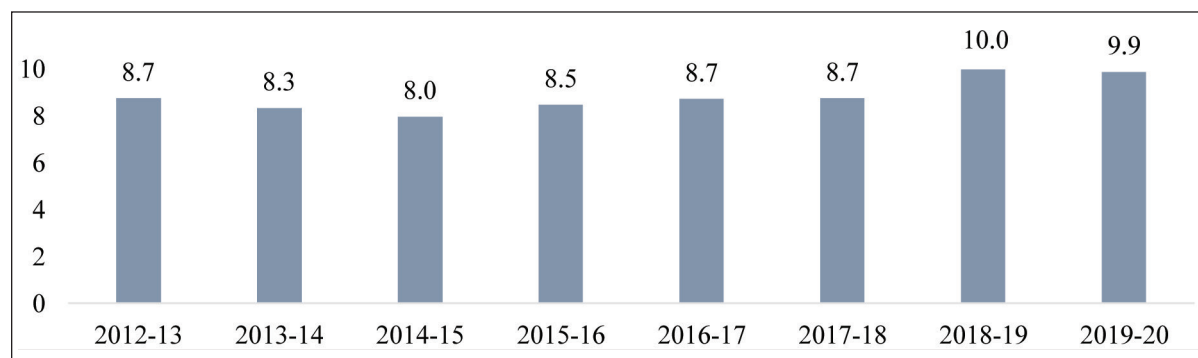
## FOOD PROCESSING SECTOR

7.54 During the last five years ending 2019-20, Food Processing Industries (FPI) sector has been

<sup>5</sup> Gulati, A., Zhou, Y. and Ferroni M. (2018), “Supporting Indian Farms: The Smart Way”, Academic Foundation in association with ICRIER.

growing at an average annual growth rate of around 11.18 per cent. The sector constituted as much as 9.87 per cent of GVA in manufacturing in 2019-20 at 2011-12 prices. Food Processing Industry is one of the major employment intensive segments having a share of 12.38 per cent (at 3-digit of NIC classification) in the employment generated in all Registered Factory sector in 2017-18. According to the latest Annual Survey of Industries (ASI) for 2017-18, the total number of persons engaged in registered food processing sector was 19.33 lakh. Unregistered food processing sector supports employment to 51.11 lakh worker as per the NSSO 73rd Round, 2015-16 and thus 14.18 per cent of employment in the unregistered manufacturing sector. The share of FPI in manufacturing and the growth in the GVA of FPI (GVA-FPI) may be seen in Figure 24.

**Figure 24: Share of FPI in Manufacturing GVA (in per cent)**

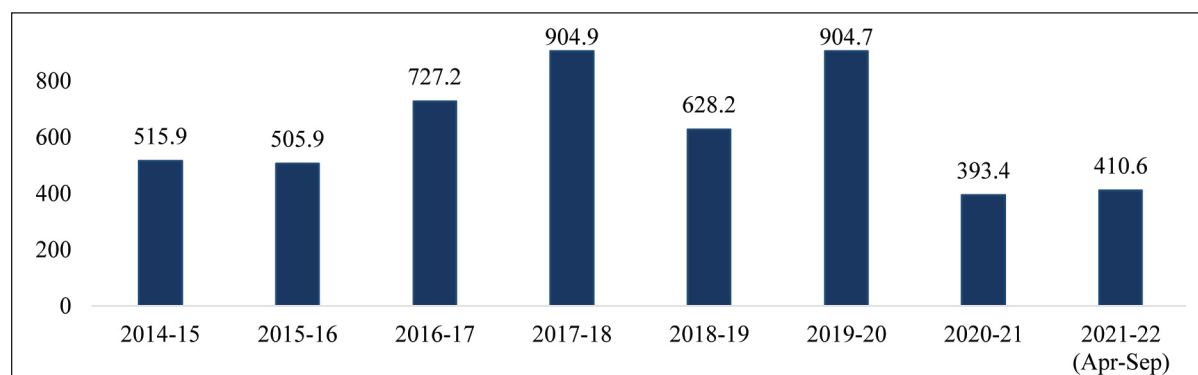


Source: Based on data received from Ministry of Food Processing Industries (MoFPI).

### FDI in Food Processing Sector

7.55 In FPI, 100 per cent FDI is permitted under the automatic route. However, in case of trading in respect of food products manufactured and/or produced in India including through e-commerce, 100 per cent FDI is allowed under the Government approval route. The sector has witnessed FDI equity inflow of US\$ 4.99 billion during the period April 2014 to September 2021. The FDI equity inflow in FPI sector during April to September 2021 was US\$ 410.62 million in comparison to US\$ 220.42 million in the corresponding period last year. Year-wise FDI inflows in FPI may be seen in Figure 25.

**Figure 25: FDI Inflows in Food Processing Sector (in US \$ million)**



Source: Based on data received from Ministry of Food Processing Industries (MoFPI).

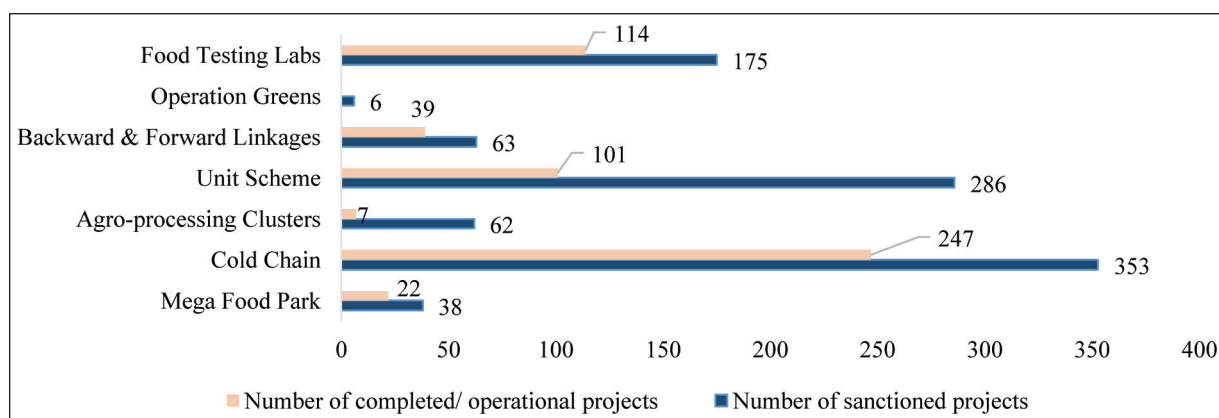
## Prime Minister-Formalization of Micro Food Processing Enterprises (PM-FME)

7.56 Under the ANB Mission, Ministry of Food Processing Industries (MoFPI) has launched a new Centrally Sponsored Scheme, PM-FME with a total outlay of ₹ 10,000 crore over the period 2020-2025. Under the scheme, One District One Product (ODOP) status for 137 unique products in 710 districts of 35 States/ UTs has been approved by the Ministry. 75 proposals for incubation with an outlay of ₹ 200.30 crore have been sanctioned/approved out of which 52 proposals were approved in 2020-21 and 23 in 2021-22.

## Pradhan Mantri Kisan SAMPADA Yojana (PMKSY)

7.57 Under the umbrella central sector scheme PMKSY, the Ministry is implementing various component schemes, inter-alia, including (i) Mega Food Parks, (ii) Integrated Cold Chain and Value Addition Infrastructure, (iii) Infrastructure for Agro-processing Clusters, (iv) Creation of Backward and Forward Linkages (v) Creation / Expansion of Food Processing & Preservation Capacities, (vi) Operation Greens and (vii) Food Testing Laboratories. The status of projects sanctioned and completed /operational as on 28.12.2021 may be seen in Figure 26.

**Figure 26: Status of projects sanctioned and completed/operational under PMKSY**



Source: Based on data received from MoFPI.

## TOP Scheme

7.58 Operation Greens Scheme was announced in the Union Budget for 2018-19 to promote Farmer Producer Organisations (FPOs), agri-logistics, processing facilities and professional management for Tomato, Onion and Potato (TOP) crops. The Scheme was launched with two components:

(i) Long term: Value Chain Development Projects - Under this, support is provided to capital investment projects for TOP crops. In pursuance of Budget announcement 2021-22, the scope of this scheme has been expanded from TOP to Twenty-Two Perishable products.

(ii) Short term: Price Stabilization Measures - Under this, subsidy is provided at the rate of 50 per cent on transportation and storage at the time of harvest for evacuation of surplus production of TOP crops from the producing area to the consumption centres. Transportation subsidy under the scheme was also extended to Kisan Rail Scheme w.e.f. 12.10.2020. The scope of short-term measures under the scheme was extended from TOP to TOTAL (41 notified fruits and vegetables) w.e.f. 11.06.2020 as a part of ANB announcement. Transport subsidy of ₹ 115.01



crore has been released till 15.12.2021 by Indian Railways against the transportation of approx. 5.68 Lakh MT of Fruits & Vegetables.

## **FOOD MANAGEMENT**

7.59 The major 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 buffer stock for food security and price stability. The instruments used are procurement at MSP from farmers and sale at Central Issue Price (CIP) under the Targeted Public Distribution System (TPDS). The nodal agency which undertakes procurement, distribution and storage of foodgrains is the Food Corporation of India (FCI). The distribution of foodgrains is undertaken primarily under the National Food Security Act, 2013 (NFSA) and other welfare schemes of the Government of India.

### **Procurement of Foodgrains**

7.60 During Kharif Marketing Season (KMS) 2020-21, 601.85 lakh metric tons (LMT) of rice has been procured against an estimated target of 642.58 LMT. In the KMS 2021-22, a total of 566.58 LMT of paddy (equivalent to 379.98 LMT rice) was procured as on 16.01.2022. During RMS 2021-22, 433.44 LMT of wheat was procured against 389.92 LMT procured during RMS 2020-21. Also, during the Kharif & Rabi Marketing Season 2020-21, approx. 11.87 LMT of coarse grains has been procured which is highest in the last five years.

### **Allocation of Foodgrains**

7.61 To ameliorate the hardships faced by the poor due to economic disruption caused by COVID-19 Pandemic, the Government launched Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) initially for the period from April to June 2020. However, keeping in view the need for continuous support to the poor and the needy, the scheme has been extended and implemented in various phases. Currently Phase V of PMGKAY is in operation covering December, 2021 to March 2022. Under the scheme, 5 kg of additional foodgrains per person per month has been/is being provided free of cost to NFSA beneficiaries in all the phases. During the year 2020-21, about 322 LMT of food-grains and during the year 2021-22, about 437.37 LMT of foodgrains have been allocated free of cost under PMGKAY scheme to around 80 crore NFSA beneficiaries.

7.62 During the year 2021-22, the Government had allocated 1052.77 lakh tons of food grains to States/UTs under NFSA and other welfare schemes as compared to 948.48 lakh tons in 2020-21.

### **Fortification of Rice and its Distribution**

7.63 The Government of India approved the Centrally Sponsored Pilot Scheme 'Fortification of Rice and its Distribution under Public Distribution System' on 14.02.2019 for a period of 3 years beginning 2019-20. The Pilot Scheme is being implemented in 15 Districts (1 District per State). Eleven States including Andhra Pradesh, Gujarat, Maharashtra, Tamil Nadu, Chhattisgarh, Uttar Pradesh, Odisha, Telangana, Madhya Pradesh, Uttarakhand and Jharkhand have started distributing the fortified rice in their identified districts under the pilot scheme. Nearly 3.38 LMT of fortified rice has been distributed till December, 2021 under the Pilot Scheme.

7.64 The Government has started distributing fortified rice under Integrated Child Development Scheme and PM Poshan schemes across the country during 2021-22 in an effort to scale up the distribution of fortified rice in the country to fight malnutrition and micronutrient deficiencies among pregnant women, lactating mothers, children etc. Nearly 19.79 LMT (as on 04.01.2022) of fortified rice has been procured by FCI and Decentralized Procuring States for distribution under ICDS and PM Poshan across the country.

### **One Nation One Ration Card**

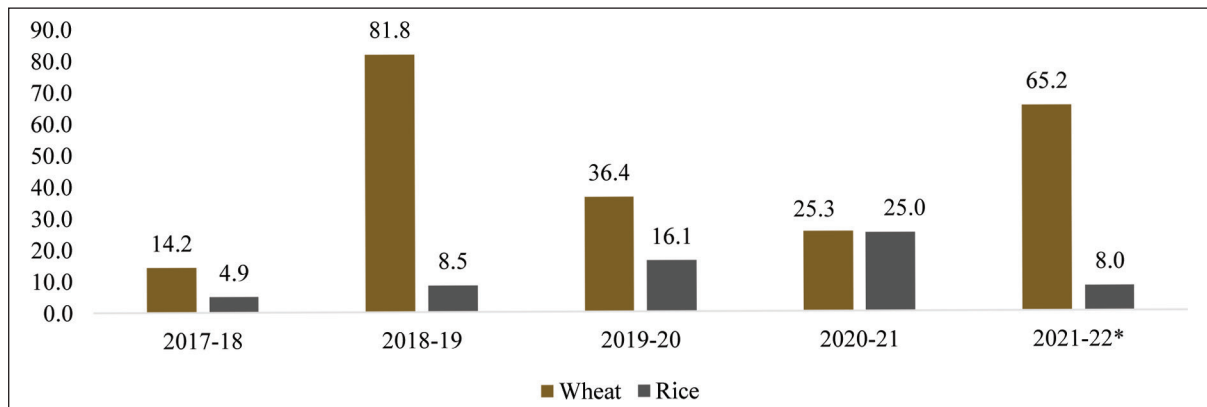
7.65 Under the scheme "Integrated Management of Public Distribution System" which was started during 2018-19 and 2019-20, One Nation One Ration Card (ONORC) System has been launched. The validity of the scheme has been extended to 31.03.2023 from the existing 31.03.2022. Through this system migratory beneficiaries shall be able to access their food security entitlements from any fair price shop (FPS) of their choice by using their same ration card after biometric/Aadhaar authentication on electronic Point of Sale (ePoS) devices at the FPS. Presently, the facility of national/inter-State portability is enabled in 34 States/UT covering nearly 75 crore beneficiaries (94.3 per cent of total NFSA population). Constant efforts are being made to expand the reach of national portability to the beneficiaries of remaining two States also.

### **Open Market Sale Scheme**

7.66 In addition to maintaining buffer stocks and for making a provision for meeting the requirement of the Targeted Public Distribution System (TPDS) and other welfare schemes, FCI on the instructions from the Government 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 called reserve prices. A target of 75 LMT of wheat has been set for sale by FCI including retail sale out of Central Pool in the open market under OMSS (D) during 2021-22. Also, a target of 50 LMT of rice has been set for sale by FCI out of Central Pool in the open market under OMSS (D) during 2021-22.

7.67 Under the OMSS (D) 2020-21 policy, a special dispensation for supply of foodgrains to all the charitable or non-governmental organizations etc. engaged in relief or running community kitchens for migrant labourers/vulnerable groups due to the present lock down condition was introduced since 08.04.2020. Under this scheme, wheat at the uniform rate of ₹ 21 per kilogram and rice at the uniform rate of ₹ 22 per kilogram are issued to charitable institutions/NGO. There is no upper limit of allocation of foodgrains to each of such organizations from any FCI depot. This special dispensation was initially till June, 2020 which was extended for rest of the year 2020-21 at the same rate, terms and conditions. In view of resurgence of COVID pandemic, the said special dispensation was further extended till 31st March 2022 or till further order, whichever is later, at the same rate, terms and conditions. Under this scheme, 1126 organizations had lifted 10422 MT of rice and 230 organizations had lifted 1,246 MT of wheat till 25.03.2021. Further, in the year 2021-22, 34 organizations have lifted 847 MT of rice and 6 organizations have lifted 10 MT of wheat till 13.01.2022. The quantities of wheat and rice sold under the OMSS (D) during the last five years and FY 2021-22 is given in Figure 27.

**Figure 27: Sale of Wheat and Rice Sold under OMSS (D) during the Last Five Years (Quantity in LMT)**

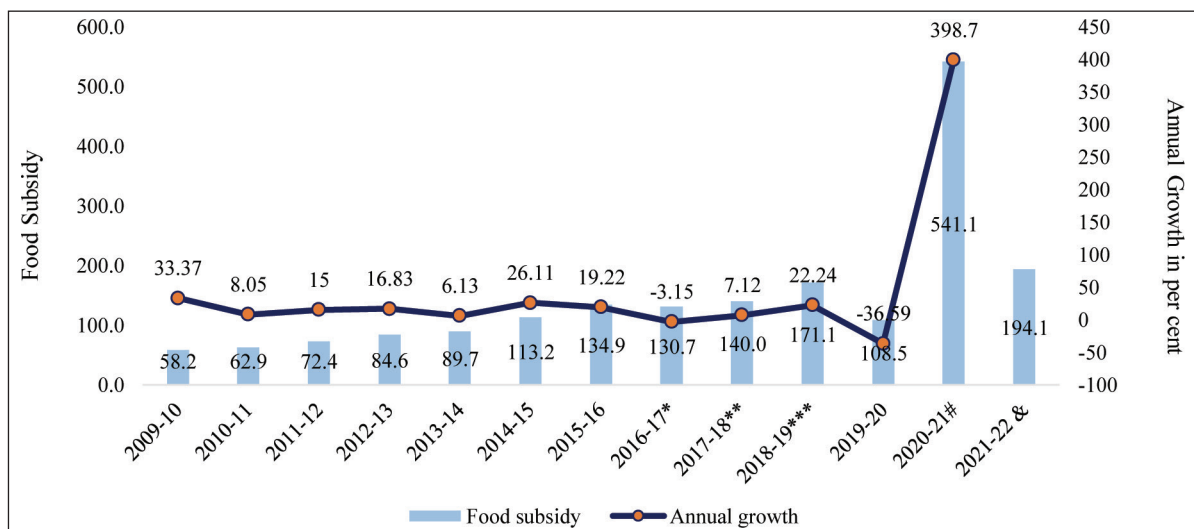


Source: Based on data received from DFPD.  
\* upto 3rd weekly e-auction of January, 2022

### Food Subsidy

7.68 The difference between the per quintal economic cost and the per quintal Central Issue Price (CIP) gives the quantum of per quintal food subsidy. The economic cost of wheat has increased from Rs 1908.32 per quintal in 2013-14 to ₹ 2993.80 per quintal in 2021-22. Similarly, the economic cost of rice has increased from Rs 2615.51 per quintal in 2013-14 to ₹ 4293.79 per quintal in 2021-22. However, as a pro-poor measure, the CIPs for NFSA beneficiaries have not been revised since the commencement of the NFSA. Measures are being taken by the Government to improve the efficiency of food management to reduce the gap between economic cost and CIP. A trend in food subsidy bill may be seen in Figure 28.

**Figure 28: Food Subsidy (in ₹ thousand crore) and Annual Growth in Food Subsidy (in per cent)**



Source: Based on data received from DFPD.

\*Includes NSSF loan of ₹ 25000 crore to FCI. \*\* Includes National Small Savings Fund (NSSF) loan of ₹ 40000 crore to FCI. \*\*\*Includes NSSF loan of ₹ 70000 crore to FCI. # ₹ 11436 crore has been reimbursed to DCP State from unutilized NSSF Loan sanctioned to FCI as per instruction of MoF in the FY 2019-20. Out of ₹ 11436 crore, ₹ 10000 crore has been repaid to FCI. & As on 18.01.2022.

## Ethanol Blended with Petrol (EBP) Programme

7.69 The Government has now set 20 per cent ethanol blending target for mixing ethanol with petrol to be achieved by 2025. It is estimated that the blending target at 10 per cent would be achieved during 2022. With a view to achieve these targets, Government has allowed production of ethanol from different feed stocks viz B-Hy & C-Hy molasses, cane juice, sugar syrup, sugar and damaged food grains including surplus FCI rice, maize, etc. by the distilleries either attached with sugar mills or standalone. Financial assistance in the form of interest subvention are also provided to eligible distilleries for augmentation of ethanol production capacity in the country. The ethanol supply under the EBP program, which was only 38 crore liters in Ethanol Supply Year (ESY) 2013-14, has increased to 173.3 crore liters during ESY 2019-20 and is expected to be more than 302 crore liters by the end of ESY 2020-21 to achieve approx. 8.1 per cent blending. Ethanol blending target for ESY 2021-22 is 10 per cent which is to progressively increase to 20 per cent by year 2025.

## Storage

7.70 The storage capacity available with FCI, a part of warehousing capacity available with Central Warehousing Corporation (CWC) and State Warehousing Corporations (SWCs) and capacity hired from private sector is used for storage of foodgrains procured for central pool by the Government Agencies. The total storage capacity available with FCI and State Agencies for storage of foodgrains as on 31.12.2021 was 961.73 LMT, comprising covered godowns of 792.81 LMT and Covered and Plinth (CAP) facilities of 168.92 LMT. Out of the total available storage capacity of 961.73 LMT, the capacity of 463.24 LMT was with FCI and 498.49 LMT with State Agencies. Moreover, as on 31.12.2021, a capacity of 144.34 LMT has been created under the Private Entrepreneurs Guarantee Scheme in which construction of godowns are undertaken in PPP mode.

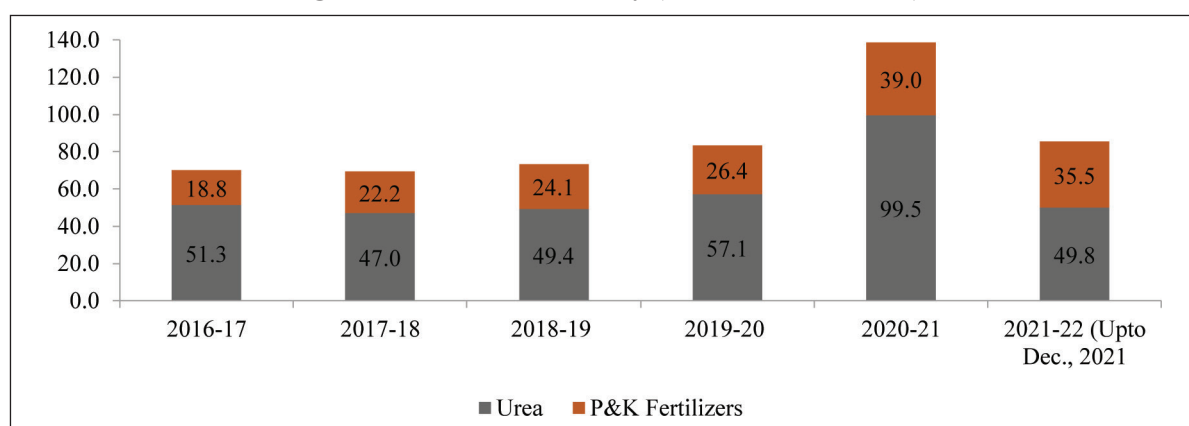
7.71 Government is implementing a Central Sector Scheme for construction of godowns with focus on augmenting storage capacity in the States of North Eastern (NE) Region and a few other States. Under this Scheme, funds are released directly to FCI in the form of equity for land acquisition and construction of storage godowns and infrastructure like railway sidings, electrification, installation of weighbridge, etc. Funds are also released as grants-in-aid to the Governments of the North-Eastern States including Jammu & Kashmir for construction of intermediate storage godowns considering the storage gaps as well as difficult geographical & climatic conditions in these States. During 12th Five Year Plan (2012-17), a total capacity of 1,84,175 MT had been created in NE States and other than NE States. This scheme has further been extended for five years upto 31.03.2022. A total capacity of 82,760 MT (65,870 MT by FCI and 16,890 MT by State Governments) has been created from 01.04.2017 to 31.12.2021.

7.72 Government of India has also approved an action plan/road map for construction of steel silos in the country in Public Private Partnership (PPP) mode for modernizing storage infrastructure and improving shelf life of stored foodgrains. Under the plan for silo development, upto 31.12.2021, 29.25 LMT capacity in various locations throughout the country have been awarded. Out of which, a capacity of 11.125 LMT is completed and remaining are under various stages of development.

## FERTILIZERS

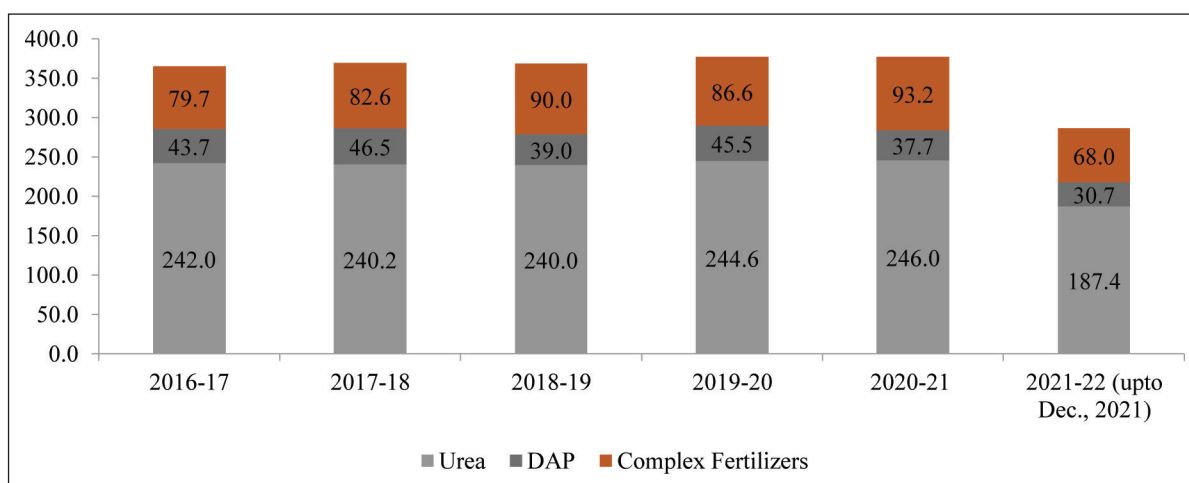
7.73 Government is making available fertilizers, namely Urea and 24 grades of P&K fertilizers to farmers at subsidized prices through fertilizer manufacturers/importers. Urea is being provided to the farmers at a statutorily notified Maximum Retail Price (MRP). As far as Phosphatic and Potassic (P&K) fertilizers are concerned, Government is implementing Nutrient Based Subsidy (NBS) Scheme w.e.f 01.04.2010. Under the said scheme, subsidy is provided on each grade of subsidized Phosphatic and Potassic (P&K) fertilizers depending upon its nutrient content. Figure 29 shows fertilizer subsidy provided by the Government over years in order to keep the fertilizers available at affordable prices. Figures 30 and 31 show production and import of various categories of fertilizers.

**Figure 29: Fertilizer Subsidy (in ₹ thousand crore)**

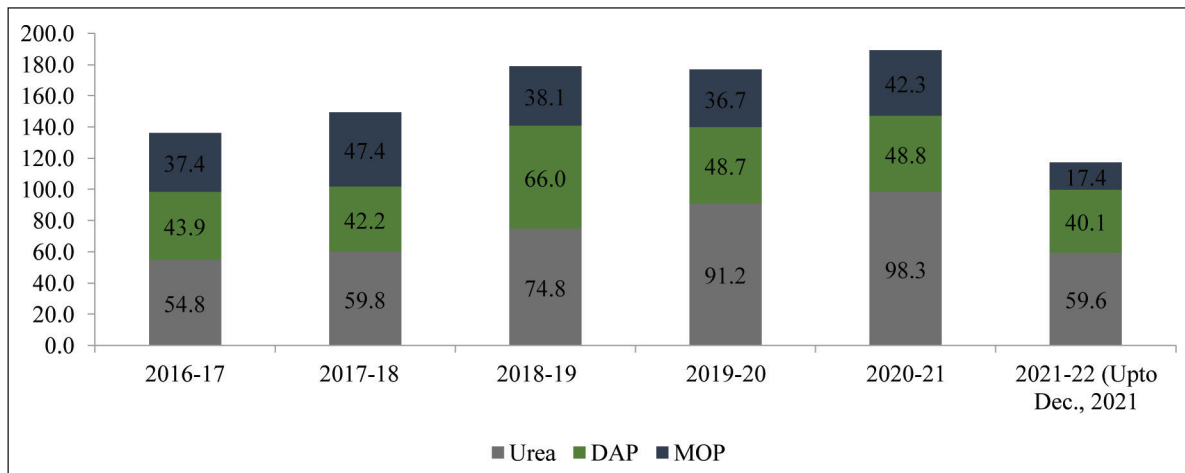


Source: Based on data received from the Department of Fertilizers.

**Figure 30: Production of Fertilizers (LMT)**



Source: Based on data received from the Department of Fertilizers.

**Figure 31: Imports of fertilizers (LMT)**

Source: Based on data received from the Department of Fertilizers.

7.74 In order to tackle the import dependency and make the subsidy regime more efficient and transparent, the Government has taken several steps. For example, New Urea Policy-2015 has been notified with the objectives of maximizing indigenous production, promoting energy efficiency in production, and rationalizing subsidy burden on the government. Government has made it mandatory for all the domestic producers of urea to produce only neem coated urea. Government has brought Potash Derived from Molasses (PDM) under Nutrient Based Subsidy (NBS) scheme for the first time since its inception in 2010 to give a push to its manufacturing by Sugar Mills as a by-product and reduce its import dependence. Latest technologies such as coal gasification; implementation of Direct Benefit Transfer for providing benefits to farmers through Point of Sale machines, etc. are being promoted.

## CONCLUSION

7.75 The performance of the agriculture and the allied sector has been resilient to the COVID 19 shock. The sector grew at 3.6 per cent in 2020-21 and improved to 3.9 per cent in 2021-22. However, as shown by the latest SAS report, the fragmentation of landholdings has led to alternate sources such as livestock, fishery and wage labour becoming significantly important for an agricultural household. Increasing importance of allied sectors including animal husbandry, dairying and fisheries in growth and income of the farmers indicates that focus needs to shift more towards harnessing the potential of allied activities. There is also a need to improve productivity of small and marginal farmers through development and implementation of small holding farm technologies.

7.76 Crop diversification towards oilseeds, pulses and horticulture needs to be given priority by addressing the core issues of irrigation, investment, credit and markets in their cultivation. While the Government has adopted the use of MSP as signal to encourage crop diversification, there is also a need for coordinated action from the State Governments to facilitate the shift to high value and less water consuming crops to enable realization of the objective of doubling farmers' income in a sustainable way.

7.77 Research and development in agriculture & allied sectors can play a major role in realisation of sustainable agriculture practice that efficiently meets the objectives of nutritional security and improvement in farm income. Research shows that every rupee spent on agricultural research and development, yields better returns compared to returns on money spent on subsidies or other expenditures on inputs. The increase in agriculture R & D therefore may improve productivity in the crop and allied sectors.

7.78 There is a need to explore options and promote use of alternative fertilizers such as Nano Urea and organic fertiliser which protect the soil, are more productive and contribute to higher nutrient use efficiency. Focus should be on use of new technology including drones and AI-based decision support systems, reduction in use of chemical fertilizers and use of low-cost organic inputs and supporting start-ups for innovations.